



EPA-HQ-OAR-2015-0531

Protection of Visibility: Amendments

To Requirements for State Plans

COMMENTS OF UTAH PHYSICIANS FOR A HEALTHY ENVIRONMENT ON  
EPA PROPOSALS TO REVISE ITS REGIONAL HAZE RULE

(August 10, 2016)

Utah Physicians for a Healthy Environment is a non-profit organization of over 400 physicians, scientists, and engineers that was formed to clarify the link between environmental degradation and impaired human health. Our objective is to encourage policy makers to make better informed decisions concerning the mitigation of pollution and the benefits that such mitigation has on public health.

According to the American Lung Association, although great strides in cleaning up the air have been made under the Clean Air Act in 1970, more than half of all Americans—166 million people—still live in counties where they are exposed to unhealthy levels of ozone and fine particulates (PM<sub>2.5</sub>), in the sense that they violate either or both of the current ambient air health standards for ozone and fine particulates established by the EPA.<sup>1</sup> More relevant to physicians concerned with public health, almost the entire American population (those living in major urban centers or within 150

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<sup>1</sup> State of the Air, 2016, The American Lung Association, available at <http://www.lung.org/assets/documents/healthy-air/state-of-the-air/sota-2016-full.pdf>. at 8.

miles of such centers) is exposed to levels of these pollutants that impair their health, as indicated by a large and growing body of epidemiological studies. UPHE participates in regional haze proceedings because the pollutants most responsible for impairing visibility in Utah's 5 iconic national parks (Ozone, NOx and PM2.5) have the collateral effect of impairing the health of those visiting these parks and those residing in the large population centers of the Wasatch Front. Clearing the air by reducing the concentration of these pollutants enough to noticeably improve visibility in Utah's Class 1 Airsheds will, as a co-benefit, cause major improvements to the health of Utah's residents.

Utah has at its center a cluster of five coal-fired power plants (the Hunter and Huntington complexes). The pollution that disperses outward from that complex encompasses five national parks and the Wasatch Front—the State's major population center. Central Utah's coal-fired power plants are major contributors of NOx and PM2.5 concentrations in both Utah's parks and its major cities. For example, they emit about 40% of the state's NOx—the State's main precursor of ozone (O<sub>3</sub>). Automobile exhaust is the other major source of Utah's NOx. Together, these sources have put both Utah's national parks and its major population centers at risk of violating Federal ozone health standards. Utah expects to designate almost all of the Wasatch Front communities, as well as Tooele, and the Uinta Basin, as ozone nonattainment areas for violating the EPA's new 70 ppb ambient eight-hour standard.<sup>2</sup> Utah's most iconic national parks (Zion, Arches, and Canyonlands) are also at risk of violating that standard.<sup>3</sup>

This pattern is repeated across the country. Urban areas with their coal-fired power plants and heavy vehicular traffic are typically the main sources of ozone

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<sup>2</sup> See "Utahns Will See More Red Air Days This Summer," By Emma Penrod, The Salt Lake Tribune, May 05 2016, at <http://www.sltrib.com/home/3856273-155/utahns-will-see-more-red-air>.

<sup>3</sup> Other Utah national parks and monuments are at risk of violating the new ozone standard as well. These include Cedar Breaks, Capitol Reef, the Grand Staircase, Dinosaur National Monument and the Lone Peak Wilderness Area. These conclusions are based on the ozone concentration data averaged over five years (2009-2013) that the National Park Service provides at [http://nature.nps.gov/air/maps/airatlas/docs/Air\\_Atlas\\_Values\\_Tables/Ozone/NPS\\_AQC\\_Ozone\\_0913\\_web.pdf](http://nature.nps.gov/air/maps/airatlas/docs/Air_Atlas_Values_Tables/Ozone/NPS_AQC_Ozone_0913_web.pdf). See also "These 12 National Parks Won't Meet EPA's Ozone Standard," Sean Hackbarth, U.S. Chamber of Commerce website, Dec 09, 2014, available at <https://www.uschamber.com/above-the-fold/these-12-national-parks-won-t-meet-epa-s-ozone-standard.n>

precursors, but ozone concentrations are often as high or higher in adjacent rural areas because precursors that originate in urban areas evolve into ozone as they spread hundreds of miles downwind over adjacent rural areas.

Prominent examples of regions in which a large population center violates the 70 ppb ambient ozone health standard and, at the same time, is a major contributor to ozone violations in the region's Class I Airsheds include Los Angeles/Sequoia National Park, the San Francisco Bay area/Yosemite, Las Vegas/Grand Canyon, the Wasatch Front/Canyonlands/Arches/Capitol Reef, Denver/Rocky Mountain National Park, Atlanta/Great Smoky Mountains National Park, Shenandoah National Park/Washington D.C., and Boston/Cape Cod National Seashore/Acadia National Park.<sup>4</sup>

Although ozone is an invisible gas, it supports chemical reactions that turn blue skies into a yellow-brown haze. At the same time, it significantly harms human health at average concentrations that now prevail in many major metropolitan areas and adjacent Class I Airsheds. Ozone damages human health by reacting with molecules in the lining of our airways. Inhaled ozone breaks chemical bonds in lung tissue and transforms that tissue by adding oxygen atoms. The oxidation inflames the lining of our airways (the endothelium) and makes it less able to protect the rest of our bodies from microbes, toxic chemicals, and allergens. Our airways respond to ozone by covering the affected areas with fluid and by contracting muscles, making breathing more difficult.

Asthma is a growing threat to children and adults. Children make up 25 percent of the population but comprise 40 percent of asthma cases. For asthmatics having an attack, the pathways of the lungs become so narrow that breathing becomes akin to sucking a thick milk shake through a straw. Ozone triggers asthma, causing more

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<sup>4</sup> These conclusions are based on the ozone concentration data averaged over five years (2009-2013) provided by the National Park Service at [http://nature.nps.gov/air/maps/airatlas/docs/AirAtlasValuesTables/Ozone/NPS\\_AQC\\_Ozone\\_0913\\_web.pdf](http://nature.nps.gov/air/maps/airatlas/docs/AirAtlasValuesTables/Ozone/NPS_AQC_Ozone_0913_web.pdf). These data show that these parks were either over the new ambient ozone national limit of 70 ppb, or within one ppb of that limit. Ozone concentration data used were provided by the Virginia Department of Environmental Quality for Shenandoah National Park and the Virginia suburbs of Washington, D.C. at <http://www.deq.virginia.gov/Programs/Air/AirQualityForecasting/Eighthourozoneexceedances.aspx>, and a national mapping of ozone concentration above the 65 ppb level mapped by analysts for the U.S. Chamber of Commerce, available at <https://www.uschamber.com/above-the-fold/map-shows-if-your-area-will-meet-epa-s-ozone-standard>.

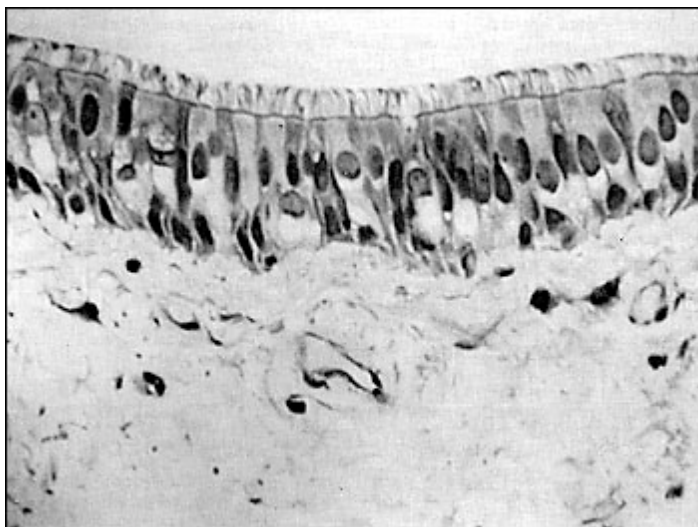
asthma attacks, increased use of medication, more medical treatment, and more visits to hospital emergency clinics.

When exposure to moderately elevated ozone levels 6 to 8 hours at a time is repeated over the long term, it raises causes respiratory, cardiovascular, metabolic, and neurodegenerative disease. It impairs lung defense mechanisms, and can cause permanent changes in lung structure, which leads to premature aging of the lungs and/or chronic respiratory illnesses such as emphysema and chronic bronchitis. Ozone has these effects on the general population—not just the young and the old—at concentrations well below the EPA's newly adopted 8-hour ambient air standard of 70 parts per billion.

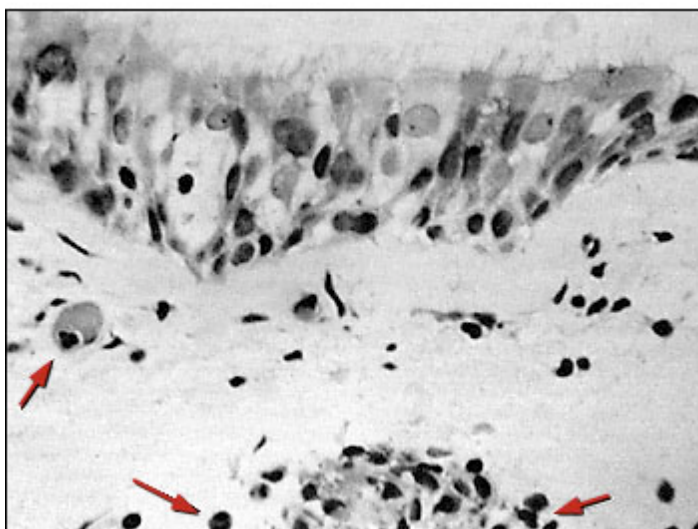
Healthy adults who exercise moderately outdoors can suffer reductions in lung function of 15 to 20% from exposure to moderately elevated levels of ozone over just several hours. Repeated exposure to moderately elevated levels of ozone can cause permanent damage to lung tissue in the same way that repeated sunburns age and damage skin. This reduces the quality of life as people age. Animal studies indicate that exposure to high levels of ozone over a period of several months can produce permanent structural damage in the lungs. Healthy adults who are most at risk for such damage are people who spend substantial time outdoors during the ozone season while exercising moderately. This includes construction and other outdoor workers.

Short-term increases in the concentration of ozone of just 20 ppb above unpolluted background levels are sufficient to make physiological changes to the lungs of healthy adults. The figure below shows two slides of endothelium—the tissue that lines the lung. The top slide is tissue taken from a person not exposed to man-caused pollutants. Note that the tiny cilia that clear the lung of pollutants appear on the top in a neat and regular row. The bottom slide is tissue taken from the same person after four hours of moderate exercise when just 20 ppb are experimentally added to unpolluted baseline levels of ozone. Note that many of the cilia are now missing or misshapen. The small black dots indicated by the arrows are neutrophils. Their proliferation is a response to inflammation of the lung.

## **Healthy Lung Tissue and Lung Tissue Exposed to Low Levels of Ozone**



Healthy Lung Tissue



Ozone-damaged Lung Tissue

Source: The American Thoracic Society, from American Review of Respiratory Diseases, Vol. 148, 1993, Robert Aris et al., pp. 1368-1369.

The damage to the lungs displayed in these photos resulted from temporary exposure to ozone concentrations that were only 20 ppb above background levels of 15 ppb.<sup>5</sup> In other words, the exposure that was sufficient to visibly damage this normal

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<sup>5</sup> Ozone concentrations in air without anthropogenic pollution averages between 10 and 15 ppb in calm conditions without significant foreign-origin contributions. See "The Ozone We Breathe," By Jeannie Allen, April 19, 2002, NASA Earth Observatory, available at <http://earthobservatory.nasa.gov/Features/OzoneWeBreathe/>.

healthy adult's lungs was to half the concentration of the new 8-hour ambient air health standard and for half as long, i.e., about one fourth of the exposure allowed under the new 8-hour standard of 70 ppb. Daytime ozone concentrations exceed 35 ppb for entire seasons (usually spring and summer) at most of the population-center/Class 1-Airshed pairs listed above.<sup>6</sup>

Exposure to concentrations of ozone well below the EPA's 70 ppb 8-hour standard can be deadly. A study of 48 largest cities in the U.S. examined the association between ozone and all-cause mortality during the summer months. Average ozone concentrations by city over the summer ranged from 16 percent to 80 percent lower than the 70 ppb 8-hour standard that the EPA currently considers safe. Researchers found that ozone concentrations well below the 70 ppb standard was associated with significant additional deaths from cardiovascular disease, strokes, and respiratory illness.<sup>7</sup>

The impact of relatively short-term (eight-hour) increases in ozone concentrations on health and well-being can be profound. For example, increasing ozone concentrations by just 20 ppb have been shown to increase elementary school absences by 63%, and to increase the incidence of respiratory disease by 83%.<sup>8</sup>

The EPA, as well as its Clean Air Scientific Advisory Committee (CASAC), have compiled a large body of research that shows dramatic reductions in respiratory symptoms and disease when the 8-hour concentration of ozone is reduced by just 10

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<sup>6</sup> See National Park Service table of 3-month ozone exposures at the areas that it administers at [http://nature.nps.gov/air/maps/airatlas/docs/Air\\_Atlas\\_Values\\_Tables/Ozone/NPS\\_AQC\\_Ozone\\_0913\\_web.pdf](http://nature.nps.gov/air/maps/airatlas/docs/Air_Atlas_Values_Tables/Ozone/NPS_AQC_Ozone_0913_web.pdf). These exposures are expressed in terms of parts-per-million/hours. The National Park Service notes that when this measure is expressed as parts per million, they generally exceed 0.06 ppm. <http://nature.nps.gov/air/maps/airatlas/ozone.cfm>. 0.06 parts per million equates to 60 ppb.

<sup>7</sup> Zanobetti A, Schwartz J. Mortality displacement in the association of ozone with mortality: an analysis of 48 cities in the United States. *Am J Respir Crit Care Med*. 2008.

<sup>8</sup> Gilliland, Frank D., et al. 2001: The Effects of Ambient Air Pollution on School Absenteeism Due to Respiratory Illnesses. *Epidemiology*, January 2001, Vol 12, 43-54.

ppb (from 75 ppb to 65 ppb).<sup>9</sup> The European Union's 8-hour ozone health standard is 60 ppb. If the current guidelines of the World Health Organization were followed in the United States, our 8-hour exposure to ozone would be kept below 51 ppb.

Daytime ozone concentrations commonly exceed what epidemiological research has demonstrated to be harmful levels for entire seasons (typically lasting from three to five months) at most of the population-center/Class 1-Airshed pairs listed above. Reductions in ozone precursors brought about by the Regional Haze Rule that are large enough to noticeably increase visibility are, at the same time, likely to result in substantially reduced ozone exposure, which will lead to substantial improvements to public health in the population centers listed above.

PM2.5, or fine particulate matter, is composed primarily of carbon soot, ammonium sulfate, ammonium nitrate, and fine soil. While its composition varies regionally, carbon soot is usually the largest component. When PM2.5 absorbs light, it turns a clear sky into a brown haze. When it reflects light, it produces a white haze. Coal-fired power plants produce fine soot (the main ingredient of PM2.5) directly. Burning coal for fuel generates 33 times as much soot (on a per-btu-basis) as does burning oil for fuel. Coal-fired power plants also produce large amounts of SO<sub>x</sub> and NO<sub>x</sub>, which are precursors of PM2.5.

Due to its ability to penetrate deep into the lungs and blood stream unfiltered, PM2.5 is more harmful than an equivalent concentration of ozone or NO<sub>x</sub>. When inhaled, it increases the incidence of respiratory, cardiovascular, metabolic, and neurodegenerative disease, largely due to its inflammatory effects. This can cause permanent DNA mutations, heart attacks, and premature death.<sup>10</sup> The International Agency for Research on Cancer (IARC) and the World Health Organization classify PM2.5 as a Group 1 carcinogen.

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<sup>9</sup> See table summarizing this research in *Environ Health Perspectives*, 2008 Jul; 116(7): A302–A305. PMID: PMC2453178.

<sup>10</sup> See "Health | Particulate Matter | Air & Radiation | US EPA," [epa.gov](http://epa.gov), November 17, 2010, Retrieved February 1, 2015.



The EPA's 24-hour ambient air health standard for PM<sub>2.5</sub> is 35 µg/m<sup>3</sup>. Its annual mean health standard is 12 µg/m<sup>3</sup>. These standards, however, are not consistent with the most recent medical research, which shows significant harm to human health from lower concentrations. More consistent with the available research is the World Health Organization's 24-hour guideline (25 µg/m<sup>3</sup>), and annual mean guideline (10 µg/m<sup>3</sup>).

Many recent studies of PM<sub>2.5</sub> conclude that the harmful effects of exposure are linear, meaning that there is no threshold below which breathing PM<sub>2.5</sub> is safe.<sup>11</sup> A long-term study of six U.S. cities tracked from 1974 to 2009 found that cleaning up particle pollution had almost immediate health benefits. It estimated that each reduction of just 1 µg/m<sup>3</sup> in annual exposure to PM<sub>2.5</sub> could prevent approximately 34,000 premature deaths a year.<sup>12</sup> A 2013 study involving 312,944 people in nine European countries found that for every 10 µg/m<sup>3</sup> increase in annual exposure to PM<sub>2.5</sub>, the lung cancer rate rose 36%. This study concluded that there is no threshold below which this effect ceases.<sup>13</sup> A 2014 European study found an increase in estimated annual exposure to PM<sub>2.5</sub> of just 5 µg/m<sup>3</sup> resulted in a 13% increased incidence of heart attacks.<sup>14</sup>

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<sup>11</sup> See Estimating the National Public Health Burden Associated with Exposure to Ambient PM<sub>2.5</sub> and Ozone Neal Fann, \* Amy D. Lamson, Susan C. Anenberg, Karen Wesson, David Risley, and Bryan J. Hubbell, DOI: 10.1111/j.1539-6924.2011.01630.x, at 9.

<sup>12</sup> Lepeule J, Laden F, Dockert D, Schwartz J. Chronic Exposure to Fine Particles and Mortality: An Extended Follow-up of the Harvard Six Cities Study from 1974 to 2009. *Environ Health Perspect.* 2012; 120: 965-970.

<sup>13</sup> Ole Raaschou-Nielsen; et al., "Air pollution and lung cancer incidence in 17 European cohorts: prospective analyses from the European Study of Cohorts for Air Pollution Effects (ESCAPE)". *The Lancet Oncology* 14 (9): 813–22. doi:10.1016/S1470-2045(13)70279-1. PMID 23849838. Published July 10, 2013, retrieved July 10, 2013.

<sup>14</sup> EU's PM<sub>2.5</sub> Limit Festering: New Study Linked PM with Heart Attack Cesaroni G, Forastiere F, Stafoggia M., Stafoggia; Andersen; Badaloni; Beelen; Caracciolo; De Faire; Erbel; Eriksen; Fratiglioni; Galassi; Hampel; Heier; Hennig; Hilding; Hoffmann; Houthuijs; Jöckel; Korek; Lanki; Leander; Magnusson; Migliore; Ostenson; Overvad; Pedersen; j; Penell; et al. (2014). "Long term exposure to ambient air pollution and incidence of acute coronary events: prospective cohort study and meta-analysis in 11 European cohorts from the ESCAPE Project". *BMJ (Clinical research ed.)* 348: f7412. doi:10.1136/bmj.f7412. PMC 3898420. PMID 24452269.

Inhaling PM2.5 in concentrations normally experienced in the population-center/Class 1-Airshed pairs listed above impairs the health not just of the fetus in the womb, children, and the elderly, but of otherwise healthy adults.<sup>15</sup> Therefore, if the Regional Haze Rule is used to reduce concentrations of PM2.5 enough to measurably improve visibility in Class I Airsheds, it is, at the same time, likely to reduce the harmful effects of PM2.5 on public health as a major co-benefit.

As noted, the vast majority of Utah's population resides along the Wasatch Front. Every county along the Wasatch Front violates the current PM2.5 24-hour standard of 35 µg/m,<sup>3</sup> and, therefore, is in the PM2.5 nonattainment area.<sup>16</sup> Across the U.S., high concentrations of PM2.5 and ozone usually occur together because the sources are largely the same—coal-fired power plants and heavy vehicular traffic.<sup>17</sup> There are, however, regional variations. In the Mountain West, the summer forest fire season and winter temperature inversions in mountain valleys also contribute to high concentrations of PM2.5. In the Ohio Valley, where coal-fired power plants are heavily relied on to produce electricity, concentrations of PM2.5 tend to be higher than most of the rest of the country, year round.

Despite significant improvements in air quality in recent decades, recent levels of ozone and PM2.5 still pose a public health risk in many regions of the United States. PM2.5 and ozone at current average concentrations significantly increase mortality rates above natural background levels. For example, a study was conducted in 2011 of the health impacts of exposure to 2005 concentrations of ozone and RM2.5 for one year and compared to what those health effects would have been if there had been no man-caused ozone and PM2.5.

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<sup>15</sup> See <http://www.sltrib.com/news/3534955-155/utah-doctors-air-pollution-harms-unborn>.

<sup>16</sup> See Utah Division of Air Quality 2015 Annual Report at 6.

<sup>17</sup> See Estimating the National Public Health Burden Associated with Exposure to Ambient PM2.5 and Ozone Neal Fann, \* Amy D. Lamson, Susan C. Anenberg, Karen Wesson, David Risley, and Bryan J. Hubbell, DOI: 10.1111/j.1539-6924.2011.01630.x, at 8.

The study estimated that the man-caused PM<sub>2.5</sub> resulted in additional mortality of between 130,000 and 340,000. This estimated range of mortality means that PM<sub>2.5</sub> was one of the leading causes of death in the United States in 2005. For perspective, in that year, there were 120,000 deaths caused by accidents, 72,000 deaths caused by Alzheimer's, and 63,000 deaths caused by influenza.

In addition to increased mortality, the study estimated that man-caused PM<sub>2.5</sub> resulted in 80,000 additional cases of chronic bronchitis, 180,000 additional non-fatal heart attacks, 30,000 additional hospital admissions for respiratory ailments, 62,000 additional hospital admissions for cardiovascular ailments, 110,000 additional emergency room visits for asthma, 200,000 additional occurrences of acute bronchitis, 2,400,000 additional occurrences of lower respiratory symptoms, 2,000,000 additional occurrences of upper respiratory symptoms, 2,500,000 additional instances of asthma exacerbation, and 18,000,000 additional lost work days.

The same study concluded that the effects of man-caused ozone were generally much less, but still very substantial. It estimated that in 2005, exposure to the man-caused increment of ground-level ozone resulted in 19,000 additional deaths, 58,000 additional hospital visits, 19,000 additional emergency room visits, 11,000,000 million additional school absences, and 29,000,000 additional days in which minors' outside activities were curtailed.<sup>18</sup> These estimates of the harm to human health of exposure to man-caused PM<sub>2.5</sub> resulted from a national mean annual PM<sub>2.5</sub> concentration of only 7.8 µg/m.<sup>3</sup> The estimated harm from ozone exposure resulted from a national mean 8-hour concentration of only 47.9 ppb. Although these national average concentrations are well below the EPA's ambient air health standards (70 ppb for ozone, 12 µg/m<sup>3</sup> for PM<sub>2.5</sub>), the study found that they still impose the large burdens on public health described.

Because national average concentrations of ozone and PM<sub>2.5</sub> cause substantial harm to public health, applying the Regional Haze Rule to reduce concentrations of

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<sup>18</sup> See Estimating the National Public Health Burden Associated with Exposure to Ambient PM<sub>2.5</sub> and Ozone Neal Fann,\* Amy D. Lamson, Susan C. Anenberg, Karen Wesson, David Risley, and Bryan J. Hubbell, DOI: 10.1111/j.1539-6924.2011.01630.x, at 12.

ozone and PM2.5 enough to measurably improve visibility in Class I Airsheds can be expected to cause substantial improvements to the health of the people residing in many major population centers adjacent to those Class I Airsheds, improving the health of a large percentage of America's population as a whole.

Until now, the regional haze rule has led to modest visibility improvements in those parts of the country where Class 1 Airsheds are concentrated. But its purpose is to restore air quality in our all of our national parks to their natural clarity by 2064. It is not living up to that purpose. The national parks conservation association estimates that at current rates of improvement, only 10% of our national parks will achieve natural levels of clarity in 50 years. The revisions to the Regional Haze Rule proposed in this rulemaking will move closer to the Rule's statutory goal. In the process, they can be expected to significantly improve the health of the residents of many of America's major population centers. We therefore welcome the proposed revisions that strengthen the rule's accountability and analytical standards governing Best Available Retrofit Technology determinations. We also welcome the proposed revisions that would make it clear that states that do not have Class 1 air sheds, but contribute to visibility impairment in states that do, share responsibility for cleaning up out-of-state airsheds.

However, we oppose those proposed revisions to the Regional Haze Rule that would eliminate the current requirement that states prepare formal interim progress reports that are subjected to public hearings and the approval of the EPA. Without scrutinized progress reports, states will be able to hide inadequacies in the implementation of their State Implementation Plans until those plans are overtaken by the next planning period. Perhaps states with an established track record of cooperating with Regional Haze Rule directives and timely achievement of objectives set under the Rule could be given waivers of the interim report requirement; but if **all** states were **automatically** excused from filing formal interim progress reports, as this rule proposes, it would reward states with a record of resisting and foot-dragging, and make the Regional Haze Rule ineffectual as to them.

The EPA proposes to allow a state to delay its duty to prepare a pollution control plan in response to a park manager's identification of sources of Reasonably

Attributable Visibility Impairment (RAVI) for as much as 9.5 years. We also oppose this proposed revision. It would create a loophole to selectively neutralize RAVI designations and make them nearly meaningless, without a plausible rationale for doing so.

Finally, we counsel against moving the next deadline for submitting state implementation plans from 2018 to 2021. Putting off installation of the best technology currently available to clear the air to a time far in the future seems to be a hallmark of the regional haze regulatory system under the current rule. For example, Utah's 2011 State Implementation Plan included an attempt to evade its obligation to require the installation of BART NO<sub>x</sub> controls on Rocky Mountain Power's coal-fired power plants in Central Utah. Five years later, the EPA has finally decided to uphold that obligation, but the order doing so gives Rocky Mountain Power an additional five years to comply. This result has been 10 years of regulatory delay. The Hunter and Huntington power plants in question were built in the mid-1970s. The average useful life of coal-fired power plants is 48 years,<sup>19</sup> which means that the economically useful lives of these units will likely be over by 2023. If Rocky Mountain Power waits until 2021 to install BART NO<sub>x</sub> controls, the Regional Haze Rule will have resulted in cleaned-up emissions from these plants for less than 10% of their useful lives. It would have been far preferable for these plants to have installed BART early enough to clean up the majority of the total NO<sub>x</sub> pollution that these plants will have emitted over their lifetimes, rather than to install BART toward the end of their useful lives, when it can clean up only a small fraction their lifetime emissions.

The Navajo Generating Station coal-fired power plant, located in the Four Corners area, provides another example of the futility of further regulatory delay. Navajo Station is the third largest single source of carbon dioxide in the nation. It spreads a prodigious amount of pollution over not only Lake Powell, but Monument Valley, Canyonlands, Arches, and Mesa Verde National Parks, spoiling the long-distance views that are essential to the enjoyment of all of these iconic parks and

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<sup>19</sup> See <http://www.powermag.com/americas-aging-generation-fleet/>.

recreation areas. Visibility in these affected Class 1 Airsheds will not substantially improve until 2030 when, under the settlement agreed to by the EPA, the Navajo Generating Station will finally install BART NOx controls.<sup>20</sup> I am a member of the Baby Boomer Generation. By the year 2030, many Baby Boomers will be candidates for a nursing home—unlikely ever to have the chance to see the iconic landscapes of the Four Corners area under clear blue skies, as the amended Clean Air Act intended. A rule that postpones the achievement of this statutory objective until it is no longer relevant to a major portion of our country's population is not working as the statute intends.

Delay is the principal flaw in the Regional Haze Rule as it has been administered up to now. Even the Fifth Circuit Court of Appeals, in its recent opinion granting stays of the FIPs for Texas and Oklahoma, prominently cited unreasonable delay among the factors supporting its decision.<sup>21</sup> The Regional Haze Rule primarily affects coal-fired power plants. Only those built before 1977 are subject to its requirements. Such plants are already approaching the end of their economically useful lives. Building further avenues of delay into the Regional Haze Rule's efforts to limit the haze-causing emissions from those plants will exacerbate what is already its principal flaw. When the visibility improvements targeted by the Regional Haze Rule are delayed, the substantial health benefits that accompany the clearing of the air are delayed as well. For that reason, UPHE strongly opposes the elements of the proposed rule that would add opportunities for delay, and water down the accountability of State Implementation Plans to the EPA and the public.

Brian Moench, MD

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<sup>20</sup> After decades of delay, the settlement worked out by the EPA would close one of three units in 2019, and delay installation of BART NOx controls on the remaining two until 2030.

<sup>21</sup> In its opinion, the Fifth Circuit noted that the EPA only moved to propose a FIP to replace parts of the Texas and Oklahoma SIPs in 2014—five years after it received Texas's SIP and four years after receiving Oklahoma's SIP, and promulgated a final rule partially disapproving the SIPs in 2016, nearly seven years after Texas submitted its SIP. *Texas, et al. v. EPA*, United States Court of Appeals for the Fifth Circuit, No. 16-60118, July 15, 2016.

President

Utah Physicians for a Healthy Environment