

**MAKING IMPLEMENTATION OF THE NATIONAL
AMBIENT AIR QUALITY STANDARDS FOR
GROUND-LEVEL OZONE ATTAINABLE:
LEGISLATIVE HEARING ON S. 263 AND S. 452**

HEARING

BEFORE THE

SUBCOMMITTEE ON CLEAN AIR
AND NUCLEAR SAFETY

OF THE

COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

ONE HUNDRED FIFTEENTH CONGRESS

FIRST SESSION

MAY 23, 2017

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ONE HUNDRED FIFTEENTH CONGRESS
FIRST SESSION

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MAKING IMPLEMENTATION OF THE NATIONAL AMBIENT AIR QUALITY STANDARDS FOR GROUND-LEVEL OZONE ATTAINABLE: LEGISLATIVE HEARING ON S. 263 AND S. 452

TUESDAY, MAY 23, 2017

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON CLEAN AIR
AND NUCLEAR SAFETY,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:31 p.m. in room 406, Dirksen Senate Building, Hon. Shelley Moore Capito [chairwoman of the subcommittee] presiding.

Present: Senators Capito, Inhofe, Fischer, Ernst, Carper, Whitehouse, Merkley, Gillibrand, Duckworth, Booker, and Carper.

**OPENING STATEMENT OF HON. SHELLEY MOORE CAPITO,
U.S. SENATOR FROM THE STATE OF WEST VIRGINIA**

Senator CAPITO. The hearing will come to order.

I would like to welcome everybody to the EPW Subcommittee on Clean Air and Nuclear Safety.

I would like to welcome the witnesses. Our first witness is someone we know very well. We will do our opening statements and then I will recognize you, Senator Flake. As we know, he is our colleague from Arizona, Senator Jeff Flake, a sponsor of S. 452, the ORDEAL Act. We are glad to have him here.

With that, I will proceed with my opening statement.

Today's hearing in the Subcommittee on Clean Air and Nuclear Safety will focus on the challenges posed by the implementation of the National Ambient Air Quality Standards, the NAAQS, for ground level ozone.

I will begin by recognizing myself for an opening statement and then move to Ranking Member Whitehouse for his statement.

Roughly a year has passed since the subcommittee last had a hearing on the Ozone NAAQS and legislation seeking to address the uncertainty regarding implementation of the new standards. A year later, no legislative fix has been enacted and so that uncertainty continues.

The EPA took 7 years to finalize implementing regulations of its 2008 standards. Nearly contemporaneously, it announced a revision, EPA did, of the standards to 70 ppb.

Now State and local governments and private industry are faced with potentially abiding by two different standards at the same time.

To that end, I request unanimous consent to submit for the record two letters: one signed by more than 200 trade associations from around the Country to congressional leadership in support of last year's version of S. 263, and a letter sent yesterday by the Association of Air Pollution Control Agencies to this subcommittee expressing concerns over the NAAQS review and implementation process.

Is there objection?

[No audible response.]

Senator CAPITO. Hearing none, so submitted.

[The referenced information follows:]

April 18, 2016

The Honorable Mitch McConnell
Majority Leader
United States Senate
Washington, D.C. 20510

The Honorable Paul Ryan
Speaker
United States House of Representatives
Washington, D.C. 20515

The Honorable Harry Reid
Minority Leader
United States Senate
Washington, D.C. 20510

The Honorable Nancy Pelosi
Minority Leader
United States House of Representatives
Washington, D.C. 20

Dear Majority Leader McConnell, Speaker Ryan, and Minority Leaders Reid and Pelosi:

The undersigned, which represent a diverse group of industries from across the country, write to express our strong support for H.R. 4775, the “Ozone Standards Implementation Act of 2016.” This legislation provides a common-sense approach for implementing national ambient air quality standards, recognizes ongoing state efforts to improve air quality through a reasonable implementation schedule for the 2015 ozone standards, streamlines the air permitting process for businesses to expand operations and create jobs, and includes other reforms that bring more regulatory certainty to federal air quality standards. Additionally, the undersigned support the request by numerous members of the House of Representatives that certain elements of H.R. 4775 be included in the Fiscal Year 2017 Interior, Environment and Related Agencies Appropriations bill.

We have significant concerns that the 2015 ozone standards overlap with existing state plans to implement the 2008 standards, leading to duplicative and wasteful implementation schedules, and unnecessary and severe economic impacts. The new ozone standards were promulgated in October 2015, only months after states received their final guidance from the Environmental Protection Agency (EPA) on how to implement the 2008 standards. This delay was the result of the Obama administration’s decision to halt work on the 2008 standards during a 2010-2011 reconsideration period. The EPA, however, did not account for this self-imposed delay when issuing the 2015 standards, thereby imposing duplicative costs and burdens of implementing multiple standards simultaneously. This is particularly wasteful as the EPA itself projects that nearly the entire country would attain the 2015 standards simply by being provided an opportunity to fully implement their state implementation plans for the 2008 standards. Local economies also face severe impacts, as analysis of data indicates that the 2015 standards could expand nonattainment to more than 950 counties if reductions under the 2008 standards are not allowed time to take effect, subjecting large parts of the country to costly nonattainment control requirements.

Notwithstanding concerns expressed by thousands of elected officials, state agencies, businesses, community groups, and other stakeholders, the EPA issued the 2015 standards without addressing the overlap with the 2008 standards and the enormous impacts that dual implementation would have on limited state resources, permitting, and the economy. It is now up to Congress to address these issues, and that is why we support the introduction of H.R. 4775. By better aligning the 2015 ozone standards with the 2008 standards and their associated emissions reductions, H.R. 4775 will help prevent unnecessary nonattainment designations and cost burdens, without sacrificing environmental protection. The legislation’s permitting relief and other reforms are also an important step towards air standards that balance environmental protection and economic development.

In sum, H.R. 4775 and the related appropriations request provide a common-sense plan that maintains continued air quality improvement without unnecessarily straining state and local economic resources.

We strongly encourage Congress to act quickly on this critical legislation.

Alabama Forestry Association
Alabama Petroleum Council
Alaska Chamber
Alliance of Automobile Manufacturers
Aluminum Association
American Chemistry Council
American Coalition for Clean Coal Electricity
American Coatings Association
American Coke and Coal Chemicals Institute
American Composites Manufacturers Association
American Concrete Pressure Pipe Association
American Farm Bureau Federation
American Forest & Paper Association
American Foundry Society
American Fuel & Petrochemical Manufacturers
American Highway Users Alliance
American Iron and Steel Institute
American Petroleum Institute
American Road & Transportation Builders Association (ARTBA)
American Wood Council
Anderson Area Chamber of Commerce
API New York
API Ohio
Arizona Chamber of Commerce and Industry
Arkansas Petroleum Council
Arkansas State Chamber of Commerce
Ascension Chamber of Commerce
Asphalt Roofing Manufacturers Association (ARMA)
Associated Industries of Arkansas
Associated Petroleum Industries of Michigan
Associated Petroleum Industries of Pennsylvania
Association of American Railroads
Association of Washington Business
Baton Rouge Area Chamber
Black Hills Forest Resource Association
Business Council of Alabama

Central Chamber of Commerce
Charleston Metro Chamber of Commerce
Charlotte Chamber of Commerce
Chemical Industry Council of California
Chemical Industry Council of Delaware
Chemical Industry Council of Illinois
Chemistry Council of New Jersey
Cherry Creek Chamber of Commerce
Clay County Chamber of Commerce
Colorado Association of Commerce & Industry
Colorado Business Roundtable
Colorado Petroleum Association
Colorado Timber Industry Association
Connecticut Petroleum Council
Consumer Energy Alliance
Consumer Specialty Products Association
Corn Refiners Association
Corpus Christi Chamber of Commerce
Council of Industrial Boiler Owners (CIBO)
Dallas Regional Chamber
Delaware State Chamber of Commerce
Denver Metro Chamber of Commerce
Extruded Polystyrene Foam Association (XPSA)
Fashion Jewelry & Accessories Trade Association
Flexible Packaging Association
Florida Chamber of Commerce
Florida Petroleum Council
Forest Resources Association
Galveston Regional Chamber of Commerce
Gas Processors Association
Georgia Agribusiness Council
Georgia Association of Manufacturers
Georgia Chamber of Commerce
Georgia Chemistry Council
Georgia Petroleum Council
Glass Packaging Institute (GPI)

Global Cold Chain Alliance
Granbury Chamber of Commerce
Greater Beaumont Chamber of Commerce
Greater El Paso Chamber of Commerce
Greater Elkhart Chamber of Commerce
Greater Irving-Las Colinas Chamber of Commerce
Greater New Braunfels Chamber of Commerce
Greater North Dakota Chamber of Commerce
Greater Port Arthur Chamber of Commerce
Greater Summerville/Dorchester County Chamber of Commerce
Greater Topeka Chamber of Commerce
Greenville Chamber
Iberville Chamber of Commerce
Illinois Chamber of Commerce
Illinois Fertilizer & Chemical Association
Illinois Petroleum Council
Independent Lubricant Manufacturers Association
Independent Petroleum Association of America
Indiana Chamber of Commerce
Indiana Petroleum Council
Industrial Energy Consumers of America (IECA)
Industrial Environmental Association
Industrial Minerals Association - North America
Institute of Makers of Explosives
Institute of Shortening and Edible Oils
Intermountain Forest Association
International Association of Refrigerated Warehouses
International Institute of Synthetic Rubber Producers, Inc.
Iowa Association of Business & Industry
ISSA, The Worldwide Cleaning Industry Association
Kansas Chamber of Commerce
Kansas Independent Oil & Gas Association
Kansas Petroleum Council
Kentucky Association of Manufacturers
Kentucky Chamber of Commerce
Kentucky Chemical Industry Council

Kitchen Cabinet Manufacturers Association
League City Regional Chamber of Commerce
Louisiana Association of Business and Industry
Louisiana Chemical Association
Lubbock Chamber of Commerce
Maine State Chamber of Commerce
Maryland Petroleum Council
Massachusetts Petroleum Council
Metro Atlanta Chamber
Michigan Chemistry Council
Milledgeville-Baldwin County Chamber
Minden-South Webster Chamber of Commerce
Minnesota Chamber of Commerce and Industry
Minnesota Crop Production Retailers
Minnesota Petroleum Council
Mississippi Economic Council
Missouri Agribusiness Association
Missouri Chamber of Commerce
Missouri Petroleum Council
Monroe Chamber of Commerce
Montana Chamber of Commerce
Motor & Equipment Manufacturers Association
Myrtle Beach Area Chamber of Commerce
National Association for Surface Finishing
National Association of Chemical Distributors
National Association of Convenience Stores
National Association of Home Builders
National Association of Manufacturers
National Black Chamber of Commerce
National Corn Growers Association
National Cotton Council
National Council of Textile Organizations
National Federation of Independent Business
National Lime Association
National Marine Manufacturers Association
National Mining Association

National Oilseed Processors Association
National Tooling and Machining Association
National Waste & Recycling Association
NATSO, Representing America's Travel Plazas and Truckstops
Nebraska Chamber of Commerce & Industry
Nevada Manufacturers Association
New Jersey Chamber of Commerce
New Jersey Petroleum Council
New Mexico Association of Commerce and Industry
New Mexico Business Coalition
New Mexico Oil & Gas Association
New York State Chemical Council
North American Die Casting Association
North Carolina Chamber
North Carolina Petroleum Council
North San Antonio Chamber
Ohio AgriBusiness Association
Ohio Chamber of Commerce
Ohio Chemistry and Technology Council
Oklahoma State Chamber
Oregon Women In Timber
Overland Park Chamber of Commerce
Palacios Chamber of Commerce
Pennsylvania Chamber of Business and Industry
Pennsylvania Chemical Industry Council
Petroleum Marketers Association of America
Portland Cement Association
Precision Machined Products Association
Precision Metalforming Association
Roanoke Valley Chamber of Commerce
Rogers-Lowell Area Chamber of Commerce
Roof Coatings Manufacturers Association (RCMA)
Silver City Grant County Chamber of Commerce
Society of Chemical Manufacturers and Affiliates
Society of Independent Gasoline Marketers of America
South Carolina Chamber of Commerce

South Carolina Manufacturing Alliance
 South Carolina Petroleum Council
 SPI: The Plastics Industry Trade Association
 Tennessee Chamber of Commerce and Industry
 Tennessee Petroleum Council
 Texas Association of Business
 Texas Association of Manufacturers
 Texas Chemical Council
 Texas Forest Industries Council
 The Business Council of New York State
 The Chamber of Commerce of Reno, Sparks, and Northern Nevada
 The Fertilizer Institute
 The Greater Summerville/Dorchester County Chamber of Commerce
 The Kansas Chamber of Commerce
 The Lake Houston Area Chamber of Commerce
 The Ohio Manufacturers' Association
 Treated Wood Council
 Truck and Engine Manufacturers Association
 U.S. Chamber of Commerce
 Upstate Chamber Coalition
 Utah Petroleum Association
 Virginia Chamber of Commerce
 Virginia Forestry Association
 Virginia Manufacturers Association
 Virginia Petroleum Council
 West Baton Rouge Chamber of Commerce
 West Virginia Chamber of Commerce
 West Virginia Manufacturers Association
 West Virginia Petroleum Council
 Western Wood Preservers Institute
 Wichita Metro Chamber of Commerce
 Wisconsin Manufacturers & Commerce
 Wisconsin Paper Council
 Wyoming Ag-Business Association
 Wyoming Business Alliance
 CC: U.S. House of Representatives
 U.S. Senate



May 22, 2017

The Honorable Shelley Moore Capito
Chair, U.S. Senate Committee on Environment
and Public Works Subcommittee on Clean Air
and Nuclear Safety
410 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Sheldon Whitehouse
Ranking Member, U.S. Senate Committee on
Environment and Public Works Subcommittee
on Clean Air and Nuclear Safety
456 Dirksen Senate Office Building
Washington, DC 20510

Subject: Clean Air Act Modernization Principles

Dear Chair Capito and Ranking Member Whitehouse:

Members of the Association of Air Pollution Control Agencies (AAPCA)¹ are responsible for protecting and improving air quality in our states and local areas, which include more than 140 million Americans and over 60 percent of total energy production in the United States. We are also responsible for implementing many parts of the federal Clean Air Act.

We are firmly committed to ensuring that our citizens enjoy the benefits of clean air, and we recognize that the Clean Air Act has been a remarkable success. Its model of cooperative federalism, which requires that state and local governments and the U.S. Environmental Protection Agency (EPA) work together to protect the air we breathe, has been responsible for dramatic improvements in air quality since 1970.

We do note, however, that the Clean Air Act has remained essentially unchanged since 1990. Since that time, we have learned a great deal about the science of air pollution and the most effective ways of controlling emissions. We believe it is time for Congress to seek targeted approaches to modernizing the Act in order to take advantage of the many lessons we have learned over the last two and a half decades.

Although there is disagreement about many Clean Air Act issues, we all support commonsense modernizations to the Act that would simplify the process for state implementation plans, harmonize regulatory deadlines, and streamline programs that have become unnecessarily burdensome. These improvements would also clarify the roles and responsibilities of state and local governments and strengthen the model of cooperative federalism that is at the heart of the Clean Air Act. The principles outlined below reflect the consensus feedback of AAPCA members, but they do not imply endorsement from all individual state and local agencies.

¹ AAPCA is a national, non-profit, consensus-driven organization focused on assisting state and local air quality agencies and personnel with implementation and technical issues associated with the federal Clean Air Act. AAPCA represents more than 40 state and local air agencies, and senior officials from 20 state environmental agencies currently sit on the AAPCA Board of Directors. AAPCA is housed in Lexington, Kentucky as an affiliate of The Council of State Governments. You can find more information about AAPCA at: <http://www.cleanairact.org>. In addition, more information on AAPCA agencies can be found in the recently released report, *The Greatest Story Seldom Told: Profiles and Success Stories in Air Pollution Control*.



ASSOCIATION OF AIR POLLUTION CONTROL AGENCIES

We would be very pleased to work with you and your colleagues to see that these principles are incorporated into any effort to update the Act:

National Ambient Air Quality Standards Reviews & State Implementation Plans

- Maintain health-based national ambient air quality standards (NAAQS), but harmonize planning and attainment deadlines to allow states to develop multi-pollutant State Implementation Plans (SIPs) for attaining and maintaining all NAAQS. As is the case today, there might be different attainment deadlines for different NAAQS, but deadlines must take feasibility into account.
- Consider a more realistic review cycle that reflects the rigor and time required to meaningfully evaluate and, if necessary, revise a NAAQS.
- Maintain EPA responsibility for reviewing and approving SIPs but require EPA to meet deadlines for approval or disapproval. Preserve state primacy by allowing EPA to disapprove SIPs only for clear and significant deficiencies that would have a meaningful impact on air quality, and provide that SIPs are deemed approved unless EPA disapproves them by the current statutory deadlines.
- Maintain the current procedure for designating nonattainment areas, but clarify that such designations must be made based on data from approved air quality monitors.

Ability of State and Local Agencies to Participate in Clean Air Act Suits and Settlements

- Maintain current provisions for citizen suits but ensure that, in any such suit, states, local governments, and affected businesses are provided the opportunity to participate as parties.
- Require any settlement agreement, consent decree or court order arising from such cases to consider resource constraints and the views of all parties.

Permitting

- Maintain permitting requirements but allow facilities to be built or expanded in any area of the country as long as: (1) state or local environmental officials determine that the facility will not have a meaningful adverse impact on human health or the environment; and (2) they employ the best available technology to control their emissions.
- Maintain state and local agency discretion in permitting decisions and clarify that permits may be challenged only for clear and significant deficiencies that would have a meaningful impact on air quality.
- Provide for a limited exemption from Prevention of Significant Deterioration/New Source Review permitting for projects determined to be environmentally beneficial based upon a cumulative impacts analysis.

Thank you for your consideration of these comments and principles. If you have any questions, please contact cwoods@csg.org or (859) 244-8040.

Sincerely,

Sean Alteri
Director, Kentucky Division for Air Quality
President, AAPCA

Senator CAPITO. This is a multibillion dollar issue, as there are severe constraints on economic development in areas designated as in “nonattainment.” Perversely, in nonattainment areas it may be more profitable for a company to close a factory and kill jobs to create ozone offset credits to sell, than it would be to reinvest in or expand that facility.

Furthermore, while this committee is improving our Nation’s infrastructure, nonattainment status delays affected-area access to Federal support for transportation projects. I think one of our witnesses will address that issue.

The bills before us today are meant to end the regulatory uncertainty and its impacts on the livelihood of Americans.

S. 263, the Ozone Standards Implementation Act, which I introduced with Senators Cornyn, Fischer, Flake, Inhofe, and Manchin, would make needed reforms to the implementation of the standards, including requiring that the EPA promulgate implementing regulations at the time it finalizes the standards, not 8 years later.

Where there is a range of levels that would protect public health, it would also require the EPA to consider whether the selected standard is technically feasible.

S. 452, the Ozone Regulatory Delay and Extension of Assessment Length, the ORDEAL Act, introduced by Senator Flake with myself as a co-sponsor, and Senators Cotton, McCain, and Wicker, would, like my bill, move the EPA from a 5-year schedule of reviewing the standards to a 10-year schedule, affording enough time for compliance.

The EPA has repeatedly failed to comply with the existing 5-year schedule and, as the standards have gradually tightened, compliance has become costlier and more complicated. The longer schedule will give much needed time to comply.

Different States and regions have unique challenges in meeting the ozone standards. Elevation, weather patterns, natural phenomena, traffic, varying levels and types of industrial activity, and interstate and international transport of ozone and its precursors all impact ozone levels and vary significantly by jurisdiction.

With all of those variables in mind, modeling is extremely complicated and is largely left up to the States and municipalities, at great cost. Western and mountain States are particularly burdened by elevated background levels of ozone.

To achieve compliance, governments and industry need a clear, certain timeline for implementation of standards and a willing partner in the EPA. Up to now, we have not had that support in Washington.

The EPA repeatedly misses the deadlines for finalization, 2008 was not an outlier. One of these delays was 14 years. Implementation almost always takes longer than the 5-years required by statute.

Now, just as the 2008 standards are being implemented, implementation regulations for 2015 are being drawn up. Areas that have just reached attainment status may once again be thrown into nonattainment, even as ozone levels nationally are trending downwards.

Based on data collected between 2013 and 2015, the number of counties in nonattainment will increase from 197 to 214 across 20

States and the District of Columbia. More than one-third of the US population would live in areas facing regulatory sanctions for non-attainment.

EPA has estimated the cost to comply with this new standard will be \$1.4 billion annually for 49 States and \$800 million annually for California, which would have until the 2030's to come into attainment.

Ground-level ozone is already declining nationwide due to emissions controls. There is no need to rush into implementation of new standards when the trend lines are positive and the late implementation of 2008 has not allowed the compliance process to play out.

Even a State like West Virginia, which is projected to be in attainment under both the 2008 and, narrowly, the 2015 standards have raised opposition with the EPA over the tightening of the standards over the uncertainty and costs the standards generate on those grounds.

The West Virginia Department of Environmental Protection has noted in communications to the EPA that "the costs of achieving lower ozone concentrations increase exponentially as the standard is lowered, a policy decision as to the level at which the NAAQS should be set should not require the expenditure of billions of dollars to achieve health benefits that are not real, or at least extremely dubious under the science."

I request unanimous consent that this letter be entered into the record.

[The referenced information follows:]



west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

March 17, 2015

Attention: Docket ID No. EPA-HQ-OAR-2008-0699
U.S. Environmental Protection Agency
Submitted via email to A-and-R-docket@epa.gov

RE: “*National Ambient Air Quality Standards for Ozone; Proposed Rule*,” 79 *Federal Register* 75234, et. seq. (December 17, 2014).

Dear Docket Manager:

The West Virginia Department of Environmental Protection (WVDEP) appreciates this opportunity to comment on the proposal to revise the *National Ambient Air Quality Standards for Ozone*, which was published in the *Federal Register* on December 17, 2014. WVDEP has reviewed the proposed rule and offers the following comments.

Executive Summary

The WVDEP strongly opposes lowering of the National Ambient Air Quality Standard (NAAQS) for ozone and supports retention of the current primary standard of 75 parts per billion (ppb). Little has changed in the body of science connecting ozone with health impacts since the Environmental Protection Agency (EPA) established the current ozone NAAQS in 2008 and rejected a lower standard of 70 ppb, as it was not sufficiently supported by scientific study. The studies upon which EPA would now rely to reduce the standard are subject to substantial uncertainties in the ways that monitored ozone levels reflect actual human exposure, the practical reality that controlled exposure studies do not reflect actual human exposure, the presence of many confounding factors and the influence of co-pollutants. As one considers the science in relation to ozone concentration, the lower the concentration being considered, the more uncertain and tenuous any evidence supporting a reduction becomes.

While the bare statutory criteria for establishing a NAAQS generally do not include costs as a part of EPA’s consideration, it is inescapable that, as the Clean Air Science Advisory Committee (CASAC) has pointed out, EPA’s task in so doing comes down to a *policy judgment*.

Promoting a healthy environment.

Docket ID No. EPA-HQ-OAR-2008-0699
 WVDEP Comments
 March 17, 2015
 Page 2 of 19

One cannot make a policy judgment that ignores the exorbitant costs of achieving increasingly uncertain health benefits, for which the available science provides little or no support. The press has reported the observations of some that this proposed rule would be the most expensive regulation the federal government has ever promulgated. These viewpoints may well be correct. Previous efforts to control ozone and fine particulate matter, which shares nitrogen oxides (NO_x) as a precursor, have already eliminated most “low hanging fruit.” Such efforts include: the NO_x SIP Call, the 1997 Ozone NAAQS, Regional Haze, Clean Air Interstate Rule (CAIR), Cross State Air Pollution Rule (CSAPR) and the 2008 Ozone NAAQS. As EPA admits, 30 percent of the controls necessary to achieve a NAAQS of 70 ppb and 45 percent of the controls necessary to achieve a NAAQS of 65 ppb *are unknown*. EPA’s own estimates of the *annual* costs¹ of attaining the NAAQS under consideration in this proposal put the cost of reductions of ozone from 75 ppb down to 70 ppb at \$780 million per ppb, the cost of reductions down to 65 ppb at \$3 billion per ppb, and the cost of reductions down to 60 ppb at \$7.8 billion per ppb. There is significant scientific uncertainty that any real health benefits will be derived from lowering the NAAQS to 70 ppb, and this uncertainty only increases as lower ozone concentrations are considered. While at the same time, the costs of achieving lower ozone concentrations increase exponentially as the standard is lowered, a policy decision as to the level at which the NAAQS should be set should not require the expenditure of billions of dollars to achieve health benefits that are not real, or at least extremely dubious under the science. EPA’s proposed standard fails to adequately analyze and account for uncertainties in the science. Additional study to account for any uncertainty associated with the health impacts of ozone at lower concentrations is necessary before a lowering of the NAAQS is warranted.

Another consideration in EPA’s policy judgment should be the attainability of the standard. Ozone forms naturally in the absence of the anthropogenic influences over which EPA and states have any control. As lower ozone concentrations are considered as NAAQS, these background levels of ozone are approached. This is especially an issue at the lower end of the range that EPA is considering. A NAAQS should not be set at background levels at which there are no realistic compliance options available. Areas should not be designated as non-attainment and subjected to the economic constraints that come from such a designation where there is no readily available way to attain the standard.

EPA’s proposed ozone standard, as well as some of the science upon which it relies, also fails to adequately consider reductions in ozone that are projected to result from other regulatory efforts that are already ongoing. Indeed, the whole of the regulatory effort that affects future ozone concentrations is one of so many moving parts that isolating the impacts or benefits

¹ While EPA admits that a large percentage of the control measures necessary to attain the NAAQS it is considering are unknown, somehow it is able to put a cost on these unknown measures. Having eliminated all of the known, “low hanging fruit” for ozone control, the real costs of unknown controls cannot be predicted. EPA is not engaging in the kind of reasoned decision-making that should receive deference by the courts or the American public.

attributable to any one of them may be impossible. Due to litigation, the final interstate regulation for the 1997 ozone NAAQS has been in effect only since the first of this year. EPA's implementation rule for the 2008 ozone NAAQS was published just eleven (11) days ago. Since the first of the year, EPA has announced an intent to develop an interstate rule for the 2008 ozone NAAQS. Tier III fuel standards loom on the horizon. Ozone levels will also be further affected by other recently promulgated or proposed EPA rules, such as the Mercury and Air Toxics rule (MATS) and EPA's proposed 111(d) performance standards for existing electric generating units. If all of these "moving parts" are put into place, the picture of ozone air quality and the impacts therefrom will be significantly different than that of today. Any new ozone NAAQS should take into account the demonstrated effects on health from implementation of these other developments.

Many of EPA's recent air quality regulations and proposals will have a disproportionate impact on coal-fired power generation, which is a significant source of high-paying jobs for middle class families. This proposal is just the latest in a long series of such rules. The harm from this to our state's economy and job market cannot be overstated. As these jobs disappear, many citizens may have to accept a lower standard of living and the lower quality of life and health that go with it. One cannot help but wonder whether whatever health benefits may be claimed to arise from this proposal are not offset by greater harm to the public health and welfare as a result of the economic dislocation of our citizens through the jobs they will lose.

WVDEP's principal position is that the proposed lowering of the ozone NAAQS is unsupported by the current body of science, is exorbitantly expensive and should be abandoned. However, the agency realizes that EPA may nonetheless go forward with some aspects of the proposed rule and, therefore, also offers the comments summarized immediately below and expressed in more detail in this document.

WVDEP supports the following:

- Retention of the current primary ozone standard of 75 ppb.
- Setting the level of the standard at the upper level of the proposed range, if EPA determines that it should revise the primary standard.
- Setting the secondary standard equal to the primary standard, since the W126 index can be related to a secondary standard using the same units (ppb) as the primary standard.
- Revising the AQI to be consistent with any revision of the NAAQS.
- The proposed PSD grandfathering provision based on the date a permit application is formally determined to be complete.
- Retaining the current ozone season and monitoring requirements in West Virginia.
- Timely issuance of implementation guidance.

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WVDEP offers the following comments in support of the points it has made in this Executive Summary.

Primary Standard

EPA requested comment on retaining the current primary ozone standard of 0.075 parts per million (ppm) or 75 ppb. WVDEP strongly supports retention of the current primary standard of 75 ppb for the following reasons:

- Uncertainty in the current body of science.
- Background ozone concentrations approach, or exceed, the level of the standard.
- Allows sufficient time for the implementation of the current standard and existing rules.
- Unknown controls and unattainable standards.
- Exorbitant implementation costs, without commensurate benefits.

As with all proposed NAAQS revisions, a great deal of analysis and documentation on the benefits of a new standard are provided as justification for the proposed action. However, the proposal relies heavily on recommendations of the Clean Air Science Advisory Committee (CASAC), in which CASAC itself acknowledged that, “the choice of a level within the range recommended based on scientific evidence (i.e., 70 to 60 ppb) is a *policy judgment* under the statutory mandate of the Clean Air Act.” 79 Fed. Reg. 75300 (emphasis added). Air quality is improving nationally, as well as in West Virginia. The national trend is toward decreasing ozone concentrations (<http://www.epa.gov/airtrends/aqtrends.html#airquality>). In this light, it seems unlikely that less ozone is causing more health impacts than during EPA’s last NAAQS review in 2008. The CAA does not require EPA to establish a primary NAAQS at a zero risk level or at background concentrations, but rather at a level that protects public health with an adequate margin of safety. West Virginia and many other states have made significant progress in controlling emissions that affect ozone formation in recent years and air quality has greatly improved due to these efforts. The availability and impact of additional controls are quickly diminishing. Ultimately, a balance must be struck between clean air goals and the practical ability to meet them.

WVDEP appreciates that the CAA directs EPA to focus on the health impacts with an adequate margin of safety in establishing NAAQS. However, where the costs associated with attainment of a NAAQS are very high, this should necessarily require a high level of certainty in the underlying scientific data and analyses underpinning such a standard. The latest scientific knowledge must be used in establishing NAAQS, however, this data must be accurately interpreted within the context of actual populations. In the proposed rule, it appears EPA is primarily relying on a re-casting of its analysis of previous ozone statistics to justify a more stringent ozone NAAQS. The proposed rule fails to acknowledge the gains in human health and air quality that is certain to come from regulatory actions already in play. EPA’s policy analysis

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improperly gives greater weight to controlled clinical exposure studies than to epidemiological studies. The extrapolation and level of uncertainty introduced by attempting to expand the controlled clinical exposure studies lead to fundamental deficiencies in EPA's rationale for changing the standard.

Uncertainty in the Current Body of Science

The Administrator has solicited comment on retaining the current primary standard, as well as comment on her proposal to revise the primary standard at a lower level within the range of 0.065 to 0.070 ppm, and on alternate standard levels below 0.065 ppm to as low as 0.060 ppm. EPA recognized that CASAC recommended a range of levels from 0.060 ppm to 0.070 ppm could potentially be supported. However, the Administrator noted that setting the standard below 0.065 ppm would inappropriately place very little weight on the uncertainties in the health effects evidence and exposure/risk information. 79 Fed. Reg. 75236. The lower one goes in the range of ozone concentrations being considered, the greater the uncertainty about the existence of health effects. In other words, the lower the standard, the less certain the body of science is with respect to potential health impacts.

It is important to balance concerns about potential health effects with the increasing uncertainty associated with our understanding of the likelihood of such effects at lower ozone levels. However, any tightening of the standard must be clearly warranted and based upon thorough, compelling, and certain scientific health data. Substantial uncertainties exist in the body of scientific evidence which EPA has relied upon in its proposed rule. The studies cited by EPA to support lowering the standard do not adequately demonstrate that the adverse health effects are solely due to ozone.

In its supporting Policy Assessment (PA) document, EPA highlighted many uncertainties associated with establishing standards for ozone during and after completion of the NAAQS review, and noted additional research is needed to fully understand health effects, population exposures, and risks of exposure for purposes of setting standards. Specifically, the PA noted that with respect to an ozone standard below 80 ppb, additional research is needed to evaluate health risks in the range of 40 to 70 ppb. The PA concluded that ozone health research needs and priorities have not changed substantially since the 2007 ozone staff paper which supported the current 8-hour ozone standard². The key uncertainties, limitations and need for further research that existed at that time as to concentrations lower than the current standard have not changed.

Most of the recent studies and analyses EPA considered continue to show no evidence for a clear threshold in the relationships between ozone concentrations commonly observed in the United States (U.S.). during the ozone season and health endpoints. Evidence indicates less

² US EPA, August 2014. Policy Assessment for the Review of the Ozone National Ambient Air Quality Standards, page 4-70. [EPA-HQ-OAR-2008-0699-0404.]

certainty in the shape of the concentration-response curve at the lower end of the distribution of ozone concentrations. EPA also notes that there continues to be heterogeneity in study data across cities or regions, including effect modifiers that vary regionally, which are additional sources of uncertainty.

It is unknown whether study errors, misclassifications, multiplicity of confounding factors or potential impacts of other co-pollutants may be obscuring potential thresholds. A broad mix of photochemical oxidants and, more generally, other co-pollutants in the ambient air (e.g., particulate matter (PM), NO_x, sulfur dioxide (SO₂), etc.) may play a role in modifying or contributing to the uncertainty in study results. A better understanding of sources of the broader pollutant mix, of human exposures, and of how other pollutants may modify or contribute to the health effects of ozone in the ambient air is needed to provide better information for EPA to justify a more stringent ozone NAAQS. There remains a need to further examine and to better understand the role of co-pollutants in the ambient air. Additionally, there remains uncertainty around the role of temperature as a potential confounder or effect modifier in study models.

EPA's studies of short-term exposure effects have employed time-series or case-crossover study designs and have been conducted in large populations. These study designs are subject to uncertainty due to the use of ambient fixed-site data serving as a surrogate for ambient exposures, and to the difficulty of determining the impact of any single pollutant among the mix of pollutants in the ambient air. Measurements made at stationary outdoor monitors have been used as independent variables for air pollution, but the accuracy with which these measurements actually reflect subjects' exposure is not yet fully understood and remains subject to substantial doubt. Also, additional research is needed to improve the characterization of the degree to which discrepancy between stationary monitor measurements and actual pollutant exposures introduces error into statistical estimates of pollutant effects in epidemiologic studies.

EPA also noted that improved understanding of human exposures to ambient ozone and to related co-pollutants is an important research need. Such population-based information is needed to better evaluate current and future ozone exposure models, and is also needed for sufficient periods to facilitate evaluation of exposure models throughout the ozone season. Thus, further information is needed to improve inputs to current and future population-based ozone exposure and health risk assessment models. Collection of time-activity data over longer time periods is needed to reduce uncertainty in the modeled results that form an important part of the basis for decisions regarding NAAQS for ozone and other air pollutants.

The final decision to revise or retain the current primary ozone standard is a public health policy judgment to be made by the Administrator. 79 Fed. Reg. 75243. It is apparent that manifold uncertainties, limitations and the need for further research to improve the current body of scientific evidence should cause EPA to sustain the adequacy of the current 8-hour primary ozone standard in the final rule, and allow implementation of the 2008 ozone standard to unfold.

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Although WVDEP opposes lowering the existing standard, if EPA elects to strengthen the primary ozone standard, WVDEP encourages EPA to set the level of the primary standard at the upper end of the proposed range so as to maximize the confidence in the body of supporting science and minimize uncertainty in the purported health benefits.

Background Ozone Concentrations

An important consideration in the ozone NAAQS review is the characterization of background levels. Background ozone concentrations are of legitimate concern when considering revising the standard, especially since ozone occurs naturally and can be transported into the U.S. from other countries.

The CAA is clear that the NAAQS should be set at achievable levels. CAA Section 107(a) requires states to submit implementation plans which specify the manner in which the NAAQS “will be achieved and maintained.” CAA Section 110(a)(2)(c) requires state implementation plans to include a program which provides for the enforcement and regulation of stationary sources “as necessary to assure that national ambient air quality standards are achieved.” Furthermore, the legislative history of the CAA clearly shows that Congress did not intend the NAAQS be set at unachievable background levels³.

WVDEP has concerns about an individual state’s ability to attain the new standards when a significant portion of the proposed range is attributable to natural background levels. Substantial uncertainties remain in the characterization of 8-hour daily maximum ozone background concentrations. Further research to improve the evaluation of the global and regional models which have been used to characterize estimates of background levels would improve understanding of the role of both natural ozone formation and non-U.S. anthropogenic emissions on ozone levels over the country. EPA should not ignore natural background levels of ozone, which approach or exceed levels that are within the agency’s proposed range. For example, Emery et al. conclude that policy relevant background levels of ozone in the U.S. modeled with the Comprehensive Air Quality Model with Extensions (CAMx) ranged from 25-50 ppb and reached well over 60 ppb in the west⁴.

Ozone is not a pollutant which is directly emitted from sources, rather it is a pollutant which is formed during complex chemical reactions in the atmosphere, and this formation may be limited by controlling the emissions of the precursors NO_x and volatile organic compounds

³ “Some have suggested that since the standards are to protect against all known or anticipated effects and since no safe thresholds can be established, the ambient standards should be set at zero or background levels. Obviously, this no-risk philosophy ignores all economic and social consequences and is impractical.” H.R. Rep. No. 294, 95th Cong., 1st Sess. 127 (1977)

⁴ *Atmospheric Environment*, November 2011: *Regional and global modeling estimates of policy relevant background ozone over the United States* by Christopher Emery, Jaegun Jung, Nicole Downey, Jeremiah Johnson, Michele Jimenez, Greg Yarwood, and Ralph Morris.

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(VOCs). EPA's proposal indicates that in 2011, approximately 60 percent of annual NO_x emissions were attributable to onroad and nonroad mobile sources, while the electric power industry accounted for 15 percent. With respect to VOC emissions, anthropogenic or manmade emissions account for only 30 percent of total VOC emissions, industrial processes and mobile sources accounted for about 57 and 39 percent, respectively. However, VOC emissions from natural sources "comprise around 70 percent of total VOC emissions nationally, with a higher proportion during the O₃ season and in areas with more vegetative cover." 79 Fed. Reg. 75370.

To establish a standard lower than 75 ppb when states have little or no control over greater than 50 percent of VOC and NO_x emissions, would make compliance with the standard using the regulatory mechanisms available to the states practically impossible.

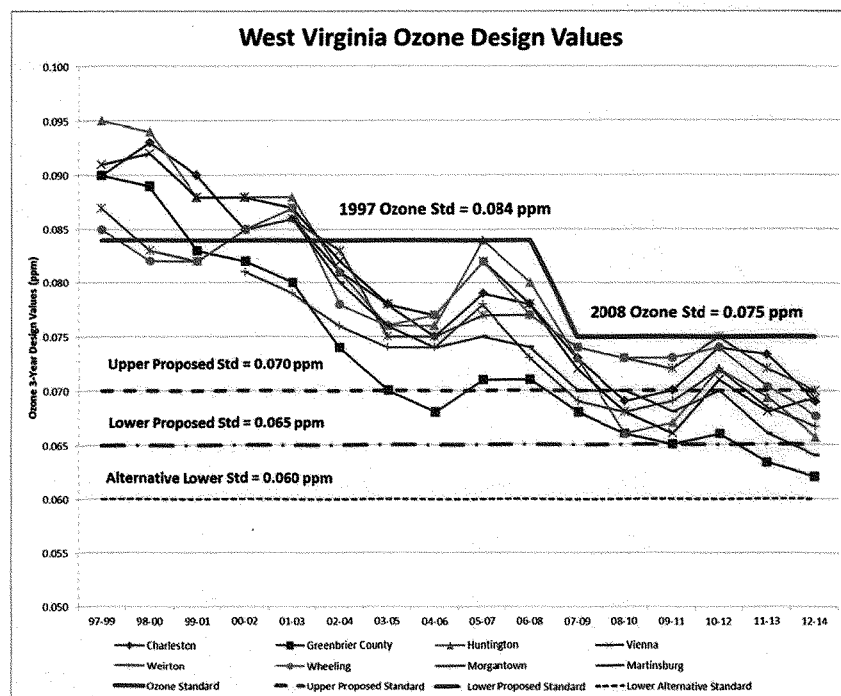
Allow Implementation of Current Ozone Standard and Existing Rules

EPA should allow the current standard to be implemented and then evaluate the effect of existing rules on ozone concentrations. The *Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements; Final Rule*, 80 Fed. Reg. 12264, was only published in the *Federal Register* on March 6, 2015. Additional NO_x reductions will be realized as states develop and adopt state implementation plans to meet these requirements. EPA must recognize that setting a new standard does not in itself result in improved air quality. Emission reductions are required to achieve improvements in air quality and emission reductions require time to be implemented. Two significant problems arise for West Virginia if a more stringent or unachievable standard is set. Many areas of the State have large sources of NO_x which are already heavily controlled, thereby making further reductions difficult and very costly. Conversely, many rural areas do not have significant sources of NO_x and therefore, could not reduce emissions. Allowing the current standard to be implemented while evaluating the effect of existing rules will avoid both of these situations, which are inherent to a NAAQS set lower than may be achievable.

West Virginia has achieved significant reductions in NO_x, a key precursor to ozone formation, via heavily controlled sources such as electric generating units (EGUs) and large industrial boilers. Consequently, when EPA published the attainment designations for the 2008 Ozone NAAQS (0.075 ppm), all counties in West Virginia were designated attainment/unclassifiable. 77 Fed. Reg. 30155. This milestone is due to the fact that over the past fifteen years, and through great effort and expense, West Virginia's largest sources of NO_x emissions have demonstrated excellent performance as participants in the NO_x Budget Trading Program, CAIR and CSAPR. To this end, West Virginia sources have spent billions of dollars to install SCR NO_x controls. Under the NO_x SIP Call, sources in West Virginia were required to reduce NO_x emissions by 77 percent, a percent reduction requirement that was the greatest of the 28 NO_x SIP Call states. Under CAIR, West Virginia's NO_x emissions continued to decrease, as annual NO_x reductions were required in addition to ozone season reductions. As a result, West

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Virginia's air quality has dramatically improved. West Virginia's ozone NAAQS performance is evidenced by the 8-hour ozone design values in the following chart.



As the chart illustrates, West Virginia currently does not have any ozone nonattainment areas. However, if a more stringent ozone standard is adopted, a large number of new areas may be brought into nonattainment, especially at the mid to lower end of the proposed range. If the primary ozone standard is lowered to 0.065 ppm, six areas would exceed the standard based on 2012-2014 data. If the standard is lowered to 0.060 ppm, all eight ozone monitors in West Virginia would exceed the standard. Most of these new nonattainment areas will be small urban and even rural areas that have little influence or control over their local air quality, and will be particularly burdened by the regulatory and administrative requirements that come with a nonattainment designation. This burden is even more pronounced in that many of these requirements provide little in the way of air quality benefits in West Virginia.

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As EPA acknowledged in its fact sheet, *By the Numbers*, released with the proposal to update the ozone NAAQS, existing and other proposed federal rules will continue to help reduce ozone pollution. Rules that reduce toxic air pollution, like the MATS rules for power plants, reduce NO_x and VOCs, both ozone precursors, as a co-benefit of reducing air toxics. Other rules, including those which limit interstate transport, such as CSAPR, emission standards for stationary sources, and Tier III vehicle emissions and fuel standards, also reduce NO_x and VOCs. At this time CSAPR and MATS are just being implemented with associated NO_x reductions soon to be realized. The proposed Clean Power Plan is expected to bring about additional reductions from electric utilities. EPA indicates that with current and proposed federal rules in place, a total of nine counties with monitors (excluding California) are projected to violate a 0.070 ppm proposed standard in 2025, down from 358 counties with monitors that measured ozone above 0.070 ppm based on 2011-2013 air quality data. A total of 68 counties (again, excluding California) with monitors are projected to violate a 0.065 ppm standard in 2025, down from the 558 counties with monitors that measured ozone above the proposed level of 0.065 ppm based on 2011-2013 air quality data.

West Virginia's largest sources have significantly reduced NO_x emissions at substantial cost. Because of these reductions and the consequent improvement in air quality, all areas in West Virginia have attained the current ozone NAAQS. While some additional NO_x reductions at other stationary source facilities may be possible, they are smaller facilities and reductions from them will not have a significant impact on our ambient concentrations. As a result, West Virginia and other states will be forced to rely on regional and national emission reduction initiatives and federal regulations on vehicle emissions to attain a more stringent NAAQS. EPA should recognize that the imposition of a more stringent ozone standard will require additional NO_x control measures, which may or may not be achievable and will cause further economic hardship to the state. Under the CAA, the Administrator retains policy judgment with respect to setting a particular NAAQS. For these added reasons, the Administrator should exercise policy judgment and not revise the ozone NAAQS at this time.

Implementation Costs

WVDEP acknowledges the responsibility of EPA to protect public health by establishing NAAQS based on health considerations, however, the following comments focus not just on the level of the standards, but also raise important implementation and cost issues. EPA has estimated the total *annual* cost of \$3.9 billion to meet a proposed standard of 70 ppb, \$15 billion to meet a standard of 65 ppb, and \$39 billion to meet a standard of 60 ppb⁵. These projected costs rise almost exponentially as the standard is lowered: from \$0.78 billion/ppb to meet a

⁵ Regulatory Impact Analysis of the Proposed Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone 9EO12866_O3-NAAQS-RIN2060-AP38-NPR-RIA-20141024.docx, Page ES-3. [EPA-HQ-OAR-2013-0169-0020]

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standard of 70 ppb, \$3 billion/ppb to meet a standard of 65 ppb, and \$7.8 billion/ppb to meet a standard of 60 ppb.

Costs of Known and Unknown Controls

EPA's Regulatory Impact Analysis (RIA) preliminary results for 70 ppb indicate that the percent of emissions reductions from known controls is approximately 70 percent, and for 65 ppb is approximately 55 percent.⁶ In the RIA the known control cost estimates were based on improved data in the known control technology/cost tool, the application of maximum end-of-pipe controls to industrial and area sources, the application of available controls for nonroad mobile sources beyond those required by Tier III, and the application of additional SCRs to uncontrolled coal-fired EGUs, beyond the controls required under the proposed Clean Power Plan. Additional reductions will be required beyond those achievable through the application of known control measures. In fact 30-45 percent of the emission reductions required to achieve the proposed levels of the standard will have to be from unknown control measures.

EPA estimated the costs of emission reductions for unknown controls, which accounts for approximately 30 percent of the control required to meet 70 ppb, and 45 percent to meet 65 ppb, using an average-cost methodology. EPA assumed a \$15,000/ton cost for all unknown controls. EPA made this assumption, while acknowledging that uncontrolled units in source sectors that have been heavily controlled for NO_x (such as EGUs) would require controls that are more expensive per ton than the typical controls that have been applied in the past. Further, EPA has already applied known levels of NO_x control to industrial, area, mobile and nonroad source sectors, including source sectors such as residential furnaces, residential water heaters and space heaters. Very few control options remain after controls have been applied to all source sectors, even residential water heaters. EPA acknowledged there is limited value in assigning costs to unidentified control measures, however the agency did exactly that.

In its RIA, EPA made the following key observations:

- Tightening the ozone standards can incur significant, but uncertain costs.
- EPA's air quality modeling approach can introduce uncertainty.
- There may not be available technologies sufficient to attain a more stringent NAAQS.
- Some existing mobile source programs may help areas reach attainment.
- The economic impacts (i.e., social costs) of the costs of these modeled controls were not included in the analysis.
- Costs and benefits will depend on implementation timeframes.

⁶ U.S. Environmental Protection Agency, October 27, 2014. PowerPoint "Ozone NAAQS Proposal – Regulatory Impact Analysis, slide 9. [EPA-HQ-OAR-2013-0169-0021]

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Costs and Attainment Dates

The ozone NAAQS is expected to be finalized in late 2015, with nonattainment area designations expected in late 2017. CAA Part D, Subpart 2, Section 181 requires areas to attain the ozone standard as expeditiously as practicable, but no later than three years after designation (2020) for marginal areas, six years after designation (2023) for moderate areas, nine years after designation (2026) for serious areas, fifteen years (2032) for severe areas, and twenty years (2037) for extreme areas. In the RIA, EPA acknowledged that several factors contributed to lower cost estimates, including shifting the baseline year from 2020 to 2025 to allow for more time to attain and for federal measures to work.⁷ Advancing the attainment date from 2025 to 2020 or even 2023 would increase costs, yet EPA made no attempt to quantify the actual costs of compliance on the timeline required by the CAA. In fact EPA stated, “For capital investment, in order to attain standards by 2025 we assume capital investment to occur at the beginning of 2025. We make this simplifying assumption because we do not know what all firms making capital investments for control measures will do and when they will do it.”⁸ This appears to be deliberately misleading.

In order for a moderate area to demonstrate attainment with a three-year design value in 2023, controls must be installed and operating prior to 2023, controls for a marginal area would have to be installed and operating prior to 2020. Many of EPA’s anticipated air quality improvements will not have been realized by then, and the agency has significantly downplayed the number of areas which will remain in nonattainment by 2023. Likewise, the agency has virtually ignored the additional control measures that would be needed to attain by the earlier year.

Cost-Benefit Analysis

WVDEP has concerns with how EPA determined the benefits of a revised ozone standard. In the RIA, the cost-benefit analysis quantifies and monetizes the benefits of reducing PM. For primary benefits estimates in 2025, PM_{2.5} co-benefits account for 70-75 percent of the co-benefits. It appears that the benefits of PM reductions have also been counted in the RIAs for the PM_{2.5} NAAQS, CSAPR, SO₂ NAAQS, MATS, Boiler Maximum Achievable Control Technology rule, Clean Power Plan, Reciprocating Internal Combustion MACT, and the Tier III vehicle and fuel standards. It is unclear whether these benefits are being double or triple counted as the same reductions across multiple rules. Multiple counting of the benefits would be disingenuous – significantly overstating the benefits of the proposed rule. Therefore, WVDEP urges EPA to be forthright and count only the benefits of ozone reductions associated with a revised standard, not the coincidental benefits of reductions in other pollutants, such as PM, or the reductions that have already been accounted for in other recent EPA proposed or final rules.

⁷ RIA, page 8-6.

⁸ RIA, page 7-3.

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A large part of EPA's task is making policy judgments as to the strength of the scientific evidence supporting any conclusion of health benefits. When costs are great and a large percentage of the necessary compliance measures are unknown, EPA, in making such a policy judgment, should require clear and convincing evidence that health benefits will be achieved. There should be no doubt that lowering the standard will result in health benefits. That is not the case for this consideration of the ozone NAAQS, therefore, EPA should retain the current primary standard.

In its NAAQS analysis and consequent policy decision, EPA must be certain of benefits and costs, considering well-established science which supports the decision. Because of the proposed rule's high cost and uncertain benefits, if EPA makes a policy decision to tighten the ozone NAAQS, the agency should set the NAAQS at the highest level of the proposed range.

Secondary Standard

EPA is proposing to revise the secondary ozone standard to within the range of 0.065 to 0.070 ppm, which air quality analyses indicate would provide air quality, in terms of three-year average W126 index values, at or below a range of 13-17 ppm-hours (hrs). EPA solicited comment on the alternative approach of revising the secondary standard to a W126-based form, averaged over three years, with a level within the range of 13 ppm-hrs to 17 ppm-hrs, and setting such a distinct secondary standard with a level within the range extending below 13 ppm-hrs down to 7 ppm-hrs. The agency also solicited comment on retaining the current secondary standard without revision, along with the alternative views of the evidence that would support retaining the current standard. 79 Fed. Reg. 75237.

The secondary standard should be kept equal to the primary standard. WVDEP does not support the use of the W126 index. The W126 index would be much more difficult to effectively implement, and the added complexity of using the index has not been adequately shown to be necessary. The proposed rule advises that the W126 index can be related to a secondary standard using the same units (ppb) as the primary standard. In that case, leaving the primary and secondary standard equal will result in less confusion for stakeholders, including the general public, and will allow for more effective implementation of the standard.

Air Quality Index

The Air Quality Index (AQI) establishes a nationally uniform system of indexing pollutant concentrations for ozone, carbon monoxide, nitrogen dioxide, particulate matter and sulfur dioxide. The AQI converts pollutant concentrations in a community's air to a number on a scale from 0 to 500. 79 Fed. Reg. 75310. EPA has proposed changing the AQI to conform to any revised standard by setting the AQI value of 100 equal to the level of the 8-hour primary ozone

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standard, and proposing adjustments to the AQI values of 50, 150, 200 and 300. With respect to reporting requirements (40 CFR §58.50), EPA has proposed to revise 40 CFR §58.50 (c) to require the AQI reporting requirements be based on the latest available census figures, rather than the most recent decennial U.S. census. This change is consistent with their current practice of using the latest population figures to make monitoring requirements more responsive to changes in population. 79 Fed. Reg. 75311.

WVDEP recognizes the importance of revising the AQI to be consistent with any revisions of the NAAQS and supports EPA's proposal to set the AQI value of 100 equal to the level of the primary NAAQS, and making adjustments to the AQI values of 50, 150, 200 and 300. WVDEP does not oppose the proposed changes to the AQI reporting requirements. In order to prevent confusion, WVDEP suggests that the Administrator make the new AQI effective at the start of the first ozone season after any change to the primary ozone NAAQS is finalized. This would allow for a smoother transition, and eliminate public confusion regarding air quality levels that may result from switching to a new AQI scale mid-season.

Prevention of Significant Deterioration (PSD)

Grandfathering Provision

WVDEP supports the proposed prevention of significant deterioration (PSD) grandfathering provision based on the date a permit application is formally determined to be complete. This provision, as outlined under Section VII(D)(1)(a), would allow a PSD permit application issued after the effective date of the revised ozone NAAQS (but before the final designation date of non-attainment for the area where the proposed or modified facility is located) to have to show compliance with NAAQS in effect at the time of application completeness, as opposed to the revised NAAQS effective at the time of permit issuance. For West Virginia, as a SIP-approved state with a formal completeness requirement under 45CSR14-§7.4, this option is much preferred over a grandfathering provision with only a public notice option. One requirement of application completeness is submission of a complete air impact analysis performed according to an approved protocol. If, after this point in the review process, the applicant was required to show compliance with a revised set of NAAQS, it could result in an unreasonable delay in permit processing.

Request for Additional PSD Grandfathering Provision

For similar reasons, WVDEP encourages EPA to provide an additional PSD grandfathering provision to allow PSD permit applications that have been formally determined to be complete prior to the final designation date (if an area is being designated as non-attainment) to continue to be reviewed and issued under PSD and not be required to be issued as a nonattainment new source review (NANSR) permit. It would be an unreasonable burden on an applicant who, after

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receiving a determination of completeness for a PSD application and proceeding potentially as far as the end of the public comment period (but not yet been issued a permit), to be required to submit a new NANSR application for the facility or modification in question. The lead time in knowing generally the date of final designations does not mitigate this burden. Many reasonable scenarios exist where an applicant would in good faith believe that a permit would be issued prior to the final designation date but, for reasons beyond their control (or even the regulatory agency's control) or without their foreknowledge, the permit would not be issued prior to this date.

Air Monitoring

EPA is proposing to extend the length of the ozone monitoring season in West Virginia to include March. EPA estimates that the nationally adjusted incremental costs for states to expand their ozone season are \$230,000 per year. While this may seem to be a nominal sum to a federal agency, state governments must balance their budgets. EPA's lack of sensitivity to this reality is a significant problem, not only in this proposed rule, but in other areas of regulatory endeavor as well. There are no unobligated financial resources available to absorb any cost increase to the air monitoring operations, including adding one month of ozone monitoring. The month of additional monitoring results in more in-service hours on the monitors, less time to service the monitors in the off-season, and less time to devote to working on other site/instrument issues in the off-season. Ozone monitors will have to be deployed during the inclement weather month of February which presents logistical and safety problems. WVDEP does not support an extended ozone season, as existing monies will need to be utilized to support an expansion which in turn could mean making difficult decisions on funding allocations across the monitoring network. Further, WVDEP does not support implementing the revised State and Local Air Monitoring Site (SLAMS) ozone season prior to January 1, 2017, as states will need an opportunity to prepare for the extended season and provide for changes in funding allocations. Starting the season earlier would place an undue burden on already strained resources.

If current resources remain stable, it is possible that WVDEP could commence year-round ozone monitoring at *only* the National Core (NCore) site beginning on January 1, 2017, but not earlier. NCore has required the addition of new monitoring activities and technologies but there has been no new funding identified for continued operation of NCore. Defined, predictable funding streams should be established for NCore outside the Section 105 grant program, which would then allow the co-benefit of supporting year-round ozone monitoring at that site.

To date, WVDEP has never been required to operate or fund a Photochemical Assessment Monitoring Station (PAMS) site. WVDEP has historically viewed its primary mission to be to conduct monitoring to assess compliance with the health-based NAAQS. In the proposed rule, EPA appears to be requiring states to conduct what would be considered research grade ambient air monitoring with existing levels of funding. Adding new monitoring such as PAMS to the

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NCore site will further burden the resources WVDEP has available to operate its network, as the PAM monitors would compete for the same resources used to operate the NAAQS network and NCore site. Expanded monitoring requirements during a time of reduced funding present potentially insurmountable resource challenges for WVDEP, possibly jeopardizing the operation of the established NAAQS network.

WVDEP is also concerned that EPA is proposing PAMS-level carbonyl sampling at NCore sites in ozone nonattainment areas prior to incorporating sampling and analytical improvements into Method TO-11A. Additionally, we are concerned that to our knowledge, there is not a commercial instrument capable of running consecutive 3 hour samples for a 24 hour sampling period, or capable of running samples over weekends. We cannot overemphasize that PAMS (and enhanced ozone monitoring) will compete for the same limited resources allocated to NAAQS and NCore monitoring. EPA does state that it believes there is national funding available to support capital equipment funding (hopefully this would be available through a Section 103 grant since there are no additional state funds available to match a Section 105 grant). However, without a dedicated funding stream outside the Section 105 grant process to support the ongoing operation of PAMS, there will simply not be enough money to operate PAMS at NCore sites. EPA needs to fully fund the cost of implementing any new ozone monitoring requirements. These funds need to be in the form of Section 103 grant monies, rather than Section 105 grant monies. If the monitoring is funded with the Section 105 grant, many states may not be able to meet the applicable matching funds requirements. It is patently unfair to burden state air control agencies via unfunded mandates.

WVDEP believes that any PAMS expansion at NCore sites should be based upon population. The entire state of West Virginia only has a total population of 1,850,326 people. West Virginia's NCore site is located in Charleston, the state's largest city. Charleston has a population of 50,821 people (2013 census estimates) representing a one percent decrease since the 2010 census.⁹ The addition of a PAMS monitoring system to the Charleston NCore site would provide limited value relative to the installation and operating cost and acquisition of the technical skills necessary to operate PAMS. That value would be further diminished by the inefficiency of establishing research grade monitoring that would compete with the limited resources available for NAAQS and NCore monitoring. EPA used population as one of the metrics in determining monitoring for carbon monoxide and nitrogen. We believe that the same type of assessment regarding population should be applied in establishing PAMS monitoring at NCore sites in ozone nonattainment areas. WVDEP recommends that EPA consider repurposing

⁹ As of 2013, the population in the Charleston MSA (the largest MSA within state boundaries) was estimated at 224,742 which represent a decrease of 1 percent since the 2000 census. The Charleston MSA includes Boone County (population 24,224), Clay County (population 9,244), and Kanawha County (population 191,275). The area of the Charleston, WV MSA is 1,261 square miles with a population density of approximately 178 residents per square mile.

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the extensive federal funding necessary to expand PAMS by reallocating those funds to states to replace and upgrade their aging NAAQS monitoring systems.

Acquiring the resources and expertise necessary to operate and maintain a continuous automatic gas chromatograph (Auto-GC), NO₂ monitoring, intensive carbonyl sampling and expanding existing meteorological parameters would be a new significant monitoring burden to WVDEP and other state agencies. Regardless of funding, few, if any state/local air agencies would have adequate resources available to adequately operate and maintain NAAQS, NCore, PAMS and enhanced ozone monitoring simultaneously.

The addition of a ceilometer to the NCore sites constitutes another requirement to conduct research grade monitoring using resources that will directly compete with the NAAQS monitoring program at the state level. Therefore, we encourage EPA to instead continue to work with NOAA to establish and enhance a network of usable ceilometers.

WVDEP believes that the requirement to develop an Enhanced Monitoring Plan (EMP) in ozone nonattainment areas that do not have an NCore site places a significant undue burden on the state and its resources. The EMP would significantly expand workload, and may include additional PAMS monitoring sites, additional ozone and NO_x monitoring, ozone sondes or other aloft measurements, additional meteorological measurements and episodic or intensive studies. The EMP may also include collecting speciated VOCs, and radar profilers. Development of an EMP would be a new requirement for WVDEP to meet for ozone nonattainment areas that do not have an NCore site. Implementation of any new monitoring or development of new monitoring sites as a result of the EMP would place a significant undue burden upon the state. WVDEP does not have the resources necessary to assume any additional new monitoring or development of new sites required by the EMP, regardless of the date that such a plan should be implemented.

As previously stated, WVDEP's monitoring objective has been primarily to determine compliance of an area with EPA's health-based NAAQS. Resources provided by both the state and EPA have traditionally been utilized to support that objective. Those resources have been diminishing over the past several years while monitoring requirements have continued to expand. Establishment of new monitoring sites (potentially required sites under the EMP) take several years to complete, assuming adequate resources and personnel are available. Under the EMP, WVDEP's limited air monitoring resources will be required to compete with its NAAQS monitoring such that funds and personnel are either allocated to the operation of an EMP site or a NAAQS compliance site. There are no resources available to conduct both adequately.

The NCore site is located in Charleston in Kanawha County (population 191,275). In addition to the ozone monitor in Charleston, WVDEP operates seven other ozone monitors across the state. The population of the counties where the monitors are located range from 108,706 people (Berkeley County) to 30,291 (Greenbrier County). The addition of an EMP to an

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ozone nonattainment area would provide limited value relative to the installation and operating cost and acquisition of the technical skills necessary to expand monitoring under an EMP. In fact, requiring an EMP in West Virginia would only take away from those very limited resources allocated to the existing program. WVDEP recommends that EPA use an assessment that considers a population cutoff in requiring and implementing an EMP in potential ozone nonattainment areas that do not have an NCore site.

Because the proposed revisions to ambient monitoring provisions result in additional unfunded mandates, WVDEP does not support extending the ozone season, or the proposed revisions to state air monitoring requirements. However, if proposed revisions to ambient monitoring provisions are implemented, any expansion of PAMS or submittal of an EMP should be based upon population, as well as be properly funded.

Timely Guidance

EPA Administrator Gina McCarthy signed the *Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements* on February 13, 2015, and it was published in the March 6, 2015 Federal Register, 80 Fed. Reg. 12264, almost a full eight years after the 2008 Ozone NAAQS final rule, 73 Fed. Reg. 16436, and almost three years after attainment designations were finalized, 77 Fed. Reg. 30088. In fact, the Administrator signed the proposal to revise the 2008 ozone NAAQS, almost three months before EPA provided implementation guidance for the 2008 standard. For states required to submit a plan, untimely guidance potentially results in significant wasted efforts developing a plan that may or may not comport with the eventual guidance.

With respect to any future NAAQS, EPA must be prepared to assist in the standard implementation process by providing necessary guidance, procedures, and tools well in advance of planning deadlines. Doing so will provide states and localities time to develop the best and most appropriate local control strategies for improving air quality. Many of the analyses needed to develop NAAQS attainment plans require significant time and resources to complete, and often control plans are developed by large regional, and oftentimes, interstate planning organizations that require significant lead time to complete the air quality planning process. Due to these and other ever-increasing complexities within the planning process, EPA must make every effort to provide timely federal guidance, tools, and input into the planning process. WVDEP strongly encourages EPA to issue proposed implementation guidance concurrently with any final NAAQS, but certainly not more than six months after promulgation of a final rule.

Summary

The final decision to revise or retain the current primary ozone standard is a public health policy judgment to be made by the Administrator. 79 Fed. Reg. 75243. It is apparent that manifold uncertainties, limitations and the need for further research to improve the current body

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of scientific evidence should cause EPA to sustain the adequacy of the current 8-hour primary ozone standard of 75 ppb in a final rule, and allows implementation of the 2008 ozone standard to unfold. If, however, the Administrator feels compelled to revise the primary ozone standard, she should do so only at the upper end of the proposed range.

The Administrator should also set the secondary standard equal to primary standard and update the AQI based upon any revision of the primary standard. Since the W126 index can be related to a secondary standard using the same units (ppb) as the primary standard, WVDEP recommends that the current level and form of the secondary standard be retained, along with adequate supporting documentation.

The proposed revisions to the ambient monitoring provisions result in additional unfunded mandates, therefore WVDEP does not support extending the ozone season, or the proposed revisions to state air monitoring requirements. However, if proposed revisions to ambient monitoring provisions are implemented, any expansion of PAMS should be adequately funded and based upon a population metric comparable to other criteria pollutants.

WVDEP supports the proposed grandfathering provisions under PSD, as well as additional PSD grandfathering to allow complete PSD permit applications to continue to be reviewed and issued under PSD prior to the final designation date of an area that is to be designated as non-attainment. WVDEP strongly encourages EPA to issue implementation guidance as soon as possible and certainly not more than six months after promulgation of a final rule.

WVDEP appreciates this opportunity to provide comments on the proposed rule and associated documents. If you have any questions or concerns regarding this submittal or require additional information, please contact me at (304) 926-0462.

Sincerely,

A handwritten signature in black ink, appearing to read 'William F. Durham', with a stylized flourish at the end.

William F. Durham
Director, Division of Air Quality

cc: Randy Huffman, Cabinet Secretary

Senator CAPITO. Our panel has a unique perspective. I welcome them. I look forward to the debate and hearing from our witnesses. I yield to Ranking Member Whitehouse for a 5-minute opening statement.

[The prepared statement of Senator Capito follows:]

**Sen. Shelley Moore Capito
Opening Statement
Clean Air Subcommittee Hearing on Ozone
May 23, 2017**

Thanks to everyone for being here today.

Today's hearing in the Subcommittee on Clean Air and Nuclear Safety will focus on the challenges posed by the implementation of the National Ambient Air Quality Standards (NAAQS) for ground-level ozone.

I will begin by recognizing myself for a brief opening statement before turning the floor over to Ranking Member Whitehouse for five minutes.

I will then recognize Senator Flake as our first panel, before introducing our second panel composed of expert witnesses whom will each be afforded five minutes for oral testimony.

With that bit of housekeeping out of the way, let's begin.

Recognizing myself for five minutes.

###

Roughly a year has passed since the Subcommittee last had a hearing on the Ozone NAAQS and legislation seeking to address the uncertainty regarding implementation of the new standards.

A year later, no legislative fix has been enacted and so that uncertainty continues.

The EPA took seven years to finalize the implementing regulations of its 2008 standards. Nearly contemporaneously, it announced a revision of the standards to 70 parts per billion.

Now state and local governments and private industry are faced with potentially abiding by two different standards at the same time.

To that end, I request unanimous consent to submit for the record two letters: one signed by more than

200 trade associations from around the country to congressional leadership in support of last year's version of S. 263, and a letter sent yesterday by the Association of Air Pollution Control Agencies to this Subcommittee expressing concerns over the NAAQS review and implementation process.

This is a multibillion dollar issue, as there are severe constraints on economic development in areas designated as in "nonattainment." Perversely, in nonattainment areas it may be more profitable for a company to close a factory and kill jobs to create ozone offset credits to sell, then it would be to reinvest in or expand that facility.

Furthermore, while this Committee is improving our nation's infrastructure, nonattainment status delays affected areas' access to federal support for transportation projects.

The bills before us today are meant to end the regulatory uncertainty and its impacts on Americans' livelihoods.

S. 263, the Ozone Standards Implementation Act, which I introduced with Senators Cornyn, Fischer, Flake, Inhofe, and Manchin, would make needed reforms to the implementation of the standards, including requiring that the EPA promulgate implementing regulations at the time it finalizes the standards. Where there is a range of levels that would protect public health, it would also require the EPA to consider whether the selected standard is technically feasible.

S. 452, the Ozone Regulatory Delay and Extension of Assessment Length (ORDEAL) Act, introduced by Senator Flake with myself, and Senators Cotton, McCain, and Wicker, would, like my bill, move the EPA from a five-year schedule of reviewing the standards to a ten-year schedule, affording enough time for compliance.

The EPA has repeatedly failed to comply with the existing five-year schedule and, as the standards have gradually tightened compliance has become costlier and more complicated. The longer schedule will allow the time needed for regulators,

governments, and regulated parties to understand and fulfill their obligations.

Different states and regions have unique challenges in meeting the ozone standards. Elevation, weather patterns, natural phenomena, traffic, varying levels and types of industrial activity, and interstate and international transport of ozone and its precursors all impact ozone levels and vary significantly by jurisdiction.

With all of those variables in mind, modeling is extremely complicated and is largely left up to the states and municipalities, at great cost. Western and mountain states are particularly burdened by elevated background levels of ozone.

To achieve compliance, governments and industry need a clear, certain timeline for implementation of standards and a willing partner in the EPA. Up to now, they have not had that support from Washington.

The EPA repeatedly misses the deadlines for finalization – 2008 was not an outlier. One of these delays was 14 years. Implementation almost always takes longer than the five years required by statute.

Now, just as the 2008 standards are being implemented, implementation regulations for 2015 are being drawn up. Areas that have just reached attainment status may once again be thrown into nonattainment, even as ozone levels nationally are trending downwards.

Based on data collected between 2013 and 2015, the number of counties in nonattainment will increase from 197 to 214 across 20 states and the District of Columbia. More than one-third of the US population would live in areas facing regulatory sanctions for nonattainment.

EPA has estimated the cost to comply with this new standard will be \$1.4 billion annually for 49 states and \$800 million annually for California, which would have until the 2030s to come into attainment.

Ground-level ozone is already declining nationwide due to emissions controls. There is no need to rush into implementation of new standards when the trend lines are positive and the late implementation of 2008 has not allowed the compliance process to play out.

Even a state like West Virginia, which is projected to be in attainment under both the 2008 and – narrowly – the 2015 standards has raised opposition with the EPA over the tightening of the standards over the uncertainty and costs the standards generate on those grounds.

The West Virginia Department of Environmental Protection has noted in communications to the EPA that “the costs of achieving lower ozone concentrations increase exponentially as the standard is lowered, a policy decision as to the level at which the NAAQS should be set should not require the expenditure of billions of dollars to achieve health benefits that are not real, or at least extremely dubious under the science.” I request

unanimous consent that this letter be entered into the record.

Our panel has the unique perspective of regulators that have addressed the challenges posed by the implementation of the Ozone NAAQS and by a civic leader from one American city, Baton Rouge, that has been whipsawed by the EPA's start-stop approach to implementation and faces a nonattainment re-designation later this year or early next.

I look forward to the debate and hearing from our witnesses. I yield to Ranking Member Whitehouse for a five minute opening statement.

###

**OPENING STATEMENT OF HON. SHELDON WHITEHOUSE,
U.S. SENATOR FROM THE STATE OF RHODE ISLAND**

Senator WHITEHOUSE. Let me thank Chairman Capito and other members of the subcommittee and our witnesses for being here today to discuss the EPA's 2015 National Ambient Air Quality Standards for ozone, colloquially known as NAAQS and two related legislative proposals.

Ironically, this hearing comes the week that the American Thoracic Society, 16,000 strong, is here in Washington urging action to protect American lungs from climate change and pollution.

In March, President Trump unveiled an Executive Order instructing agencies to review regulations that affect domestic energy production, which includes EPA's 2015 ozone standard. A few weeks later, EPA attorneys were granted a delay in the ozone standard's case now before the U.S. Court of Appeals for the D.C. Circuit.

EPA stated it needed time as "EPA officials in the new Administration will be closely scrutinizing the 2015 rule to determine whether the standard should be maintained, modified or otherwise reconsidered."

Despite all this administrative activity, we are here today talking about bills to delay implementation and formation of health standards for ozone and other pollutants. Why is that? The answer, I am afraid, is that there is neither the law nor the science to dismantle the ozone standard quickly through administrative action, so the fossil fuel industry is calling as usual on politics.

The Clean Air Act mandates that NAAQS be set solely based on what is necessary to protect public health, specifically not on how it affects domestic energy production. The 2015 ozone standard was based on sound peer-reviewed science and the 70 ppb standard was the high bound of the proposed 60 ppb to 70 ppb range.

EPA's independent science advisors, leading medical groups like the American Medical Association, the American Academy of Pediatrics, the American Thoracic Society, the American Lung Association and the American Heart Association, and public interest groups such as the NAACP, had all called for a stricter standard, closer to 60 ppb. Winning with 70 ppb was not enough for the fossil fuel industry.

State compliance dates are linked to the severity of their pollution. Some States have upwards of 20 years to comply. The congressional Research Service compiled a preliminary list of non-attainment areas based on State recommendations.

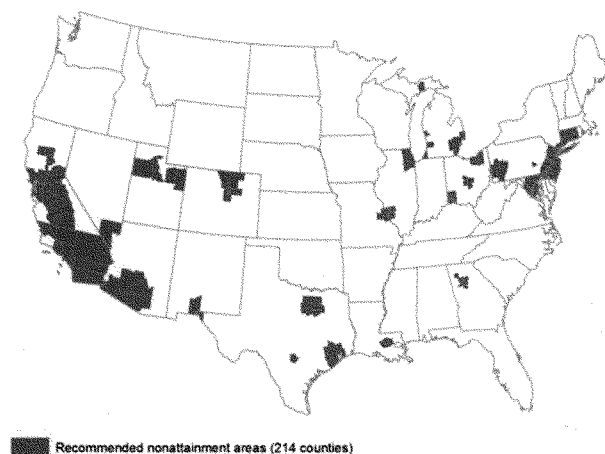
As you can see from this chart, West Virginia, Arkansas, Oklahoma, Nebraska, Iowa, Kansas, Mississippi and Alabama, the States represented by the Republicans on the subcommittee, all believe they are already in attainment of the 2015 standard. Why then delay ozone compliance for these States that are already in attainment?

I would ask unanimous consent to enter the CRS material into the record, Madam Chair.

Senator CAPITO. Without objection.

[The referenced information follows:]

Figure 1: Congressional Research Services' Preliminary List of Nonattainment Areas for the 2015 Ozone NAAQS (State- and Tribe-identified areas, generally based on 2013-2015 monitoring)^a



State	Nonattainment Areas	Counties and Partial Counties in the Identified Areas
Alabama	0	0
Alaska	0	0
Arizona	2	4
Arkansas	0	0
California	19	38
Colorado	1	9
Connecticut	2	8
Delaware	1	1 ^b
District of Columbia	1	1 ^c
Florida	0	0
Georgia	1	8
Hawai'i	0	0
Idaho	0	0
Illinois	2	11
Indiana	0	0
Iowa	0	0
Kansas	0	0
Kentucky	1	3
Louisiana	1	5
Maine	0	0
Maryland	3	12
Massachusetts	0	0
Michigan	5	11
Minnesota	0	0
Mississippi	0	0
Missouri	1	5
Montana	0	0
Nebraska	0	0
Nevada	1	1
New Hampshire	0	0
New Jersey	1	21
New Mexico	1	1 ^d
New York	1	9

North Carolina	0	0
North Dakota	0	0
Ohio	3	15
Oklahoma	0	0
Oregon	0	0
Pennsylvania	4	14
Rhode Island	0	0 ^e
South Carolina	0	0
South Dakota	0	0
Tennessee	0	0
Texas	4	21
Utah	3	7
Vermont	0	0
Virginia	1	9
Washington	0	0
West Virginia	0	0
Wisconsin	0	0 ^f
Wyoming	0	0
Total	55^g	214
Tribal submissions		
Fond du Lac (MN)	0	0
Forest County Potawatomi (WI)	0	0
Gila River (AZ)	0	0
Morongo Band (CA)	1	1
Pechanga (CA)	1	2
Ute (UT)	0	0 ^h

Source: CRS, based on information in U.S. EPA, 2015 *Ozone Standards—State Recommendations*, November 9, 2016, available at <https://www.epa.gov/ozone-designations/2015-ozone-standards-state-recommendations>. Maryland's submission was not available on the EPA website, as of December 30, 2016. Data for Maryland were estimated by CRS.

a. Information submitted to EPA on or about October 1, 2016. In many cases, the submission letter included preliminary information for 2016, through August 31 of the year. Final designations will be based on 2014-2016 data.

b. Delaware's letter notes that emissions contributing to nonattainment in New Castle County, Delaware, originate in 15 states in addition to Delaware. The state proposed that EPA establish a nonattainment area encompassing all of these states and Delaware. If EPA rejects this recommendation, the state recommended that New Castle County be designated as a stand-alone nonattainment area.

c. The District of Columbia has no county-level government, but EPA counts it as one county.

d. Two monitors in Dona Ana County in southern New Mexico indicate nonattainment with the NAAQS. New Mexico believes that emissions from sources beyond the international border within Mexico contribute to the violations indicated by the Dona Ana County monitors. The state "intends to explore this aspect of New Mexico's situation" with EPA over the coming year, prior to the final designation of nonattainment areas.

e. Based on monitoring data for 2013-2015, a monitor in Narragansett would indicate nonattainment and, based on previous practice, all five counties in Rhode Island would be included in a nonattainment area. However, the state's submission indicates that preliminary data for 2014-2016 show all monitors in the state indicating attainment. The state, therefore, asked that EPA consider a recommendation of attainment for all five counties.

f. Monitoring data for lakeshore counties in Wisconsin apparently indicated nonattainment in 2013-2015, but the Governor's submission letter states that a designation of "attainment is justified for several reasons. Wisconsin's lakeshore counties ... continue to suffer the consequences of diminished air quality and resulting nonattainment due to emissions originating beyond Wisconsin's borders.... Unless and until EPA takes action to fully address downwind state attainment issues, Wisconsin sources must not be required to reduce emissions further in order to meet EPA's new standard."

g. Several areas include counties in more than one state, including areas in Kentucky and Ohio (Cincinnati nonattainment area); Connecticut, New Jersey, and New York (metropolitan New York City nonattainment area); Delaware, Maryland, New Jersey, and Pennsylvania (Philadelphia nonattainment area); Illinois and Missouri (St. Louis nonattainment area); and the District of Columbia, Maryland, and Virginia (Washington, DC, nonattainment area). To avoid double-counting the number of nonattainment areas, the Total counts each of these areas only once.

h. Data from the Ouray monitoring station on Ute tribal land in the Uintah Basin of Utah indicate nonattainment with the 2015 ozone NAAQS in the period 2013-2015. The Ute Tribe submitted an exceptional event demonstration to EPA in August 2015, however, and has requested that the area be designated attainment/unclassifiable.

Senator WHITEHOUSE. Polluters never want to reduce their pollution and regularly attack the Clean Air Act based on overblown costs that always ignore the other side of the ledger, the public health and other benefits of reducing pollution.

My State is on the other side of that ledger. We are downwind of the polluters. For years, tall, upwind, out-of-State smokestacks have been launching ozone-forming pollution into the prevailing winds that carry it to the playgrounds and backyards of Rhode Island.

Rhode Island parents should not have to tell their children they cannot play outside on what looks like a perfect summer day because it is a bad air day caused by out-of-State, upwind pollution.

In evaluating proposed ozone legislation, I encourage members of the subcommittee to take both sides of the ledger into account, including the substantial public health benefits of reducing pollution.

Madam Chair, I would like to ask unanimous consent that a letter from my Director of Environmental Management, Janet Coit, and four other northeastern States, be entered into the record in opposition to the proposed legislation.

Senator CAPITO. Without objection.

[The referenced information follows:]

May 23, 2017

The Honorable John Barrasso, Chairman
 The Honorable Tom Carper, Ranking Member
 U.S. Senate
 Committee on Environment and Public Works
 410 Dirksen Senate Office Building
 Washington, DC 20510-6175

**RE: S. 263 and H.R. 806, Ozone Standards Implementation Act of 2017
 S. 452, ORDEAL Act of 2017**

Dear Chairman Barrasso and Senator Carper:

We, the signatory states, voice our strong opposition to S. 263 and its companion bill H.R. 806, the Ozone Standards Implementation Act of 2017, and S. 452, the ORDEAL Act of 2017 (collectively referred to as “the Bills”) because the Bills undermine the health-based protections of the Clean Air Act. The Northeast and Mid-Atlantic states measure the highest ozone levels in the country, with the exception of California, and over 70 million citizens in those states are exposed to unhealthy air. Much of this harmful air originates in Southeastern and Western states regardless of the efforts of the Northeast and Mid-Atlantic states to control their own emissions of ozone-forming pollutants. Thus, we rely on the health-based protections of the Clean Air Act to help us ensure that our citizens breathe healthy air today and tomorrow. The Bills’ systemic weakening of the health protections afforded by the Clean Air Act is not in the interest of our citizens, our environment, or our future.

The Clean Air Act requires states to attain the ozone national ambient air quality standards (NAAQS) as expeditiously as practicable, a responsibility that would be impeded by the Bills. Because the NAAQS are set to protect public health with an adequate margin of safety and are based on the best available science, any delay in implementing the NAAQS would prolong exposure by the public to unhealthy air. EPA’s 2015 ozone NAAQS is expected to provide public health benefits across the United States, including preventing 230,000 asthma attacks in children; 630 asthma-related emergency room visits; and 320 to 660 premature deaths annually by 2025 (excluding California). The Bills would postpone these substantial public health and environmental benefits for almost a decade.

Arbitrarily delaying implementation of the 2015 ozone NAAQS to 2025 would leave the 2008 standard – which has been found to be outdated and not sufficiently protective of public health – as a prolonged inadequate benchmark for protecting public health. This unnecessarily puts our citizens in greater peril of suffering from ozone’s adverse health and welfare impacts, including premature mortality. In addition, it does not accurately inform the public of the true quality of their air. The Bills’ provisions to extend the review cycle for all NAAQS from five years to ten years further exacerbate this problem. Experience has shown that NAAQS reviews rarely occur within the current statutory five-year cycle, and an extension to ten years with additional analysis will likely result in a much longer review time, and additional work by EPA that will extend well beyond ten years. Thus, our states’ ability to provide clean, healthy air “as expeditiously as practicable” becomes an unattainable goal.

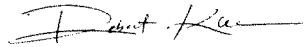
Allowing technological feasibility to be considered when setting NAAQS runs counter to the original core principle of the Clean Air Act – NAAQS should be set solely on the basis of health. This is now well-settled law, including a unanimous opinion from the Supreme Court. Once health-based standards are established, the Clean Air Act appropriately allows states to consider other factors, such as costs and technological feasibility, as they develop strategies to attain the standards. Allowing the consideration of technological feasibility when setting NAAQS will defeat the critical purpose of health-based standards. The adverse harm from polluted air as a matter of science has nothing to do with control technology costs. Furthermore, historical experience has shown that current considerations of technological feasibility are poor predictors of future innovation breakthroughs created by the technology-forcing nature of the Clean Air Act.

The Bills' provisions regarding permitting also imperil the health of our citizens. Allowing air pollution sources to obtain permits under an outdated standard – whether because of an arbitrary delay, as proposed for the 2015 ozone NAAQS, or because EPA has not issued rules or guidance – imprudently punishes people who reside and work in areas with poor air quality. If Congress is truly concerned about the timeliness of EPA rules, Congress should ensure that EPA has adequate resources to carry out its responsibilities.

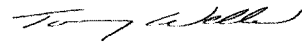
The Bills also inappropriately address “exceptional events” by expanding the exceptional events criteria to include conditions occurring on the days during which the highest pollution episodes actually occur. This makes setting a health-based ozone NAAQS a meaningless exercise by absolving EPA and the states from taking efforts to achieve it under the prevalent conditions leading to the worst air quality days. The intent of the exceptional event criteria is to allow a state to discount NAAQS exceedances that result from a one-time, unpredictable, and uncontrollable event – for example, a wildfire. This short-sightedness would result in the continuation of harmful exposure to polluted air while ignoring that a repeatable, predictable, and preventable high pollution day occurred.

Other provisions of the Act already address the issues that appear to be motivating this legislation. The Act's nonattainment area classifications provide areas with more difficult ozone pollution problems with more time to comply. Other mechanisms allow states the flexibility to adjust the minimum pollution reduction requirements based on the showing of need, success in lowering ozone levels, and the adoption of certain other measures. In addition, the Act's good neighbor provisions require states with emissions that contribute significantly to other states' ozone nonattainment to take action to reduce their contribution.

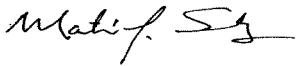
The states in the Ozone Transport Commission have extensive experience developing plans to reduce ozone levels in order to comply with the ozone NAAQS. Our experience is that the current structure works when EPA and upwind states that contribute significantly to our ozone levels do their own share to complement our emission control measures. Although passage of these Bills would offer temporary relief from the administrative burden of developing an ozone state implementation plan, the lengthy delay in achieving the public health benefits of the 2015 ozone standard is, in our view, much too high a price to pay. Proponents of the Bills assert that the intent is to make State implementation of the federal ozone standards more efficient. Instead, the Bills upset well-understood and proven approaches to protecting public health through appropriate rulemaking. The federal government and our states need to continue to work aggressively to improve air quality based on science and to provide clean air to our citizens. For the aforementioned reasons, we strongly oppose the Ozone Standards Implementation Act of 2017.



Robert J. Klee, Commissioner
CT- Department of Energy & Env. Protection



Tommy Wells, Director
DC - Department of Energy & Environment



Martin Suuberg, Commissioner
MA - Department of Energy & Environmental Affairs



Clark Freise, Assistant Commissioner
NH – Department of Environmental Services



Janet Coit, Director
RI - Department of Environmental Management

Senator WHITEHOUSE. I have another opposition letter from 22 public interest groups including the Appalachian Mountain Club, the National Parks Conservation Association, the Nebraska Wildlife Federation and the Wilderness Society be put into the record.

Senator CAPITO. Without objection.

[The referenced information follows:]

350 Maine * Alaska Wilderness League * Appalachian Mountain Club
 Appalachian Trail Conservancy * Aroostook Band of Micmacs * Center for Biological Diversity
 Earthjustice * Environment America * Friends of Acadia * League of Conservation Voters
 Livelihoods Knowledge Exchange Network * National Parks Conservation Association
 Nature Abounds * Nebraska Wildlife Federation * New Energy Economy
 Natural Resources Defense Council * Physicians for Social Responsibility – Maine Chapter
 Sierra Club * Southern Environmental Law Center * The Wilderness Society
 Valley Forge Park Alliance * WildEarth Guardians

**OPPOSE S. 452: Ozone Regulatory Delay and Extension of Assessment Length Act of 2017
 &
 S. 263: Ozone Standards Implementation Act of 2017**

May 22, 2017

Dear Senator,

The undersigned organizations and our millions of members and supporters nationwide urge you to **oppose S. 452** – Ozone Regulatory Delay and Extension of Assessment Length (ORDEAL) Act of 2017 and **S. 263** – Ozone Standards Implementation Act of 2017 when they come before the Senate Environment and Public Works Subcommittee on Clean Air and Nuclear Safety on May 23rd. Both bills seek to delay action on the implementation of current National Ambient Air Quality Standards (NAAQS) for ozone pollution by at least eight years and extend the review cycle for all NAAQS from five to ten years. If enacted, either bill will irrevocably harm human health, natural ecosystems and the economy.

For 47 years, Congress has given Americans the right to clean air based on science alone; these bills undermine that right by allowing political delay to deny Americans the timely right to safe air based on the latest medical understandings. NAAQS are intended to defend the public from harmful air pollution that comes from vehicles, energy producers and industrial sources by setting health and welfare based pollution standards with which all states must comply. That's nowhere more important than in our national parks, forests, and other public lands – places set aside to protect America's natural and cultural resources and provide healthful outdoor recreation for millions of people. Iconic landscapes across the country from Sequoia and Kings Canyon National Parks in California to Acadia National Park in Maine, still experience times when levels of ozone are unhealthy for parks and people. High levels of ozone damage wildlife and vegetation and can harm the health of otherwise healthy individuals while working or exercising outdoors.

Ozone pollution is linked to serious breathing problems and premature death, stifles tree and crop growth, causes leaves of common tree species to blacken and wither, and is also a potent greenhouse gas. Formed by emissions from power plants, factories, solvent use, and motor vehicles, ozone is the principal component of smog. It affects tens of millions of people in the United States, posing a particular threat to asthmatics, children and the elderly, and is especially harmful to people spending time outdoors, including in our nation's parks. Beyond the healthcare costs related to respiratory problems, lost worker days and reduced worker productivity, local

economies are affected by ozone pollution as visitors to parks and wilderness areas may reduce the length of their stay or alter their travel plans where air quality is compromised.

NAAQS should be set and revisited every five years to ensure that the most up to date science is reflected in public health and ecosystem protections against air pollution. Many NAAQS reviews already take 8-10 or more years under a 5-year statutory deadline. By extending the statutory deadline from five to ten years, S. 452 and S. 263 would set our nation backward, further delaying implementation and review of critical clean air safeguards.

We urge you to oppose both bills and instead be a strong voice to protect our parks and communities, including the elderly, the young and everyone in between, so all can thrive in good health and have beneficial experiences in America's most treasured landscapes. Please get in touch with Ani Kame'enui at NPCA with any questions: akameenui@npca.org, (202) 454-3391.

Sincerely,

350 Maine
Alaska Wilderness League
Appalachian Mountain Club
Appalachian Trail Conservancy
Aroostook Band of Micmacs
Center for Biological Diversity
Earthjustice
Environment America
Friends of Acadia
League of Conservation Voters
Livelihoods Knowledge Exchange Network
National Parks Conservation Association
Nature Abounds
Nebraska Wildlife Federation
New Energy Economy
Natural Resources Defense Council
Physicians for Social Responsibility – Maine Chapter
Sierra Club
Southern Environmental Law Center
The Wilderness Society
Valley Forge Park Alliance
WildEarth Guardians

Senator WHITEHOUSE. I have an opposition letter from 15 State Attorneys General, the District of Columbia Attorney General, and the Acting Secretary of the Pennsylvania Department of Environmental Protection be put into the record.

Senator CAPITO. Without objection.

[The referenced information follows:]

**Attorneys General of New York, California, Connecticut, Delaware, Illinois, Iowa,
Maryland, Massachusetts, New Mexico, Oregon, Pennsylvania, Rhode Island,
Vermont, Virginia, Washington, and the District of Columbia, and the Acting
Secretary of the Pennsylvania Department of Environmental Protection**

April 26, 2017

The Honorable John Barrasso, Chairman
The Honorable Tom Carper, Ranking Member
Committee on Environment and Public Works
U.S. Senate
Washington, D.C. 20510-6175

Re: Opposition to S. 263, *Ozone Standards Implementation Act of 2017*

Dear Senator Barrasso and Senator Carper:

We write in opposition to S. 263, *Ozone Standards Implementation Act of 2017*. This bill would not only delay implementation of more protective ozone air quality standards, but, more broadly, would undermine the mandate in the Clean Air Act (Act) that the national ambient air quality standards for ozone and other criteria pollutants be based on up-to-date scientific evidence and focus *solely* on protecting public health and welfare. As explained below, these measures would be a significant step backward in combatting the dangers of ozone and other criteria pollutants.

Many of our states have struggled for decades with the pervasive problem of ozone pollution. The scientific evidence of harm to public health from ozone pollution is well established, as are the economic consequences. At certain concentration levels, ozone irritates the respiratory system, causing coughing, wheezing, chest tightness and headaches. People exposed to elevated levels of ozone suffer from lung tissue damage, and aggravation of asthma, bronchitis, heart disease, and emphysema. Children, older adults, people with asthma or other lung diseases, and people who are active outdoors are particularly susceptible to the harmful health effects of ozone. Public health harms also exact an economic toll. For example, increased hospital admissions on bad ozone days increase health care costs borne by states and local governments. Ozone pollution also harms public welfare by damaging trees and reducing crop yields by interfering with the ability of plants to produce and store food and making them more susceptible to disease, insect pests, and other stressors. Ozone can also inhibit the ability of plants and trees to mitigate harms from climate change.

To protect against these and other adverse impacts and “to promote the public health and welfare and the productive capacity of its population,” the Act aims “to protect and enhance the quality of the Nation’s air resources.” 42 U.S.C. § 7401(b)(1). To achieve this goal, the Act requires EPA to adopt primary standards for certain criteria pollutants, such as ozone, at a level that protects public health with an “adequate margin

of safety.” 42 U.S.C. § 7409(b)(1). The Act also requires EPA to adopt secondary standards at a level that protects the public welfare from “any known or anticipated adverse effects.” 42 U.S.C. § 7409(b)(2). The Act mandates that EPA review the air quality standards for each criteria pollutant every five years and revise the standards as advances in science warrant. As Justice Scalia explained for a unanimous Supreme Court, EPA’s review must set the primary and secondary standards based on the scientific evidence, and may not consider implementation costs or other economic consequences. *Whitman v. Am. Trucking Ass’n*, 531 U.S. 457, 465 (2001). Rather, implementation decisions are a matter for states, which are empowered to evaluate the costs and co-benefits of potential implementation strategies and determine, in light of those costs and co-benefits, which strategies are most suitable for them. *See Union Elec. Corp. v. EPA*, 427 U.S. 246, 266 (1976).

To ensure that our residents and natural resources enjoy the benefits of the clean air that the statute demands, our offices have advocated in rulemakings and litigation that EPA set standards that protect public health and welfare with an adequate margin of safety, as the Act requires. *E.g.*, *Mississippi v. EPA*, 744 F.3d 1334 (D.C. Cir. 2013) (State petitioners, including New York, California, Connecticut, Delaware, Illinois, Maryland, Massachusetts, New Mexico, Oregon, Rhode Island, and the District of Columbia, successfully argued for remand of secondary ozone standards); *American Farm Bureau Fed. v. EPA*, 559 F.3d 512 (D.C. Cir. 2009) (State petitioners and amici, including New York, California, Connecticut, Delaware, Illinois, Maryland, Massachusetts, New Mexico, Oregon, Pennsylvania Department of Environmental Protection, Rhode Island, and the District of Columbia, successfully argued for remand of primary fine particulate matter standards); *Murray Energy v. EPA* (D.C. Cir. 15-1385) (State amici, including California Air Resources Board, Delaware Department of Natural Resources, Massachusetts, New York, Rhode Island, Vermont, and the District of Columbia, filed a brief supporting the 2015 primary ozone standard against attempts to weaken it).

The ozone rule promulgated by EPA in 2015 strengthened the primary standard of 75 parts per billion (ppb) to 70 ppb. 80 Fed. Reg. 65,292 (Oct. 26, 2015). This level was at the high end (i.e., less stringent) of the 65-70 ppb range that EPA proposed in 2014. EPA’s independent science advisors, the Clean Air Scientific Advisory Committee, cautioned that this level may offer little margin of safety, particularly for sensitive subpopulations. Therefore, in comments on the proposal, several of our states urged EPA to adopt a primary standard lower than 70 ppb to protect public health with an adequate margin of safety. However, even tightening the standard from 75 ppb to 70 ppb will result in important public health benefits. For example, EPA conservatively estimated that meeting the 70 ppb standard nationally (not including California) will result in net annual public health benefits of up to \$4.5 billion starting in 2025. These national benefits include preventing approximately:

- 316 to 660 premature deaths;
- 230,000 asthma attacks in children;
- 160,000 missed school days;

- 28,000 missed work days;
- 630 asthma-related emergency room visits; and
- 340 cases of acute bronchitis in children.

Under current law, states will develop and submit their own plans to attain the 2015 standard by 2020 or 2021. But S. 263 would delay this deadline until October 2026 and delay other similarly related deadlines, postponing even further the life-saving benefits of attaining clean air. The bill should be rejected on these grounds alone.

In addition, S. 263 would undermine the protection of health and welfare from the dangers of all criteria air pollutants by weakening the national ambient air quality standards process for updating standards based on the most recent scientific evidence. Instead of requiring that standards be reviewed—and as necessary, revised—every five years based on the latest scientific evidence on the harms to public health and welfare from exposure to criteria pollutants, S. 263 would require updates only once a decade.

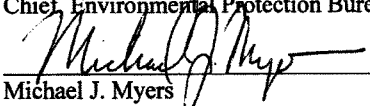
The bill would also eliminate the Act's requirement that air quality standards be set *solely* based on adequate protection of public health and welfare. Specifically, the bill would authorize the EPA Administrator to also consider "likely technological feasibility" in establishing primary and secondary standards. This provision appears designed to allow EPA to weaken standards nationwide if it thinks a single area might be incapable of meeting them. But if that were ever the case, the Act already provides relief mechanisms for the affected area. In addition, the bill undermines the Act's existing protections by creating a loophole that allows EPA to treat hot or dry weather as an "exceptional event" excusing an area's nonattainment.

Finally, the bill appears to be based on a misunderstanding of the Act's balance between federal and state authority. The bill directs EPA to cherry-pick hypothetical state implementation strategies and only evaluate their adverse side-effects, and, potentially, use that evaluation to weaken ambient air quality standards. But EPA cannot know at the time it sets standards what strategies states will choose, or how individual states will value their *beneficial* side-effects. Those considerations should remain separate from the standard-setting process.

In summary, ozone pollution remains a serious and persistent problem for our nation, posing a particular risk to the health of children, the elderly and the sick, as well as individuals who spend time outdoors. Because S. 263 would represent a significant step backward in combatting ozone and other dangerous criteria pollutants, we urge you to oppose the bill. Thank you for your attention to this critical matter.

Sincerely,

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 of Columbia
 441 4th St, NW, Suite 1100S
 Washington, DC 20001

cc: Hon. Mitch McConnell, Senate Majority Leader
 Hon. Charles E. Schumer, Senate Minority Leader
 Hon. Shelley Moore Capito, Chair, Subcommittee on Clean Air and Nuclear
 Safety
 Hon. Sheldon Whitehouse, Ranking Member, Subcommittee on Clean Air and
 Nuclear Safety
 Hon. Benjamin L. Cardin
 Hon. Tammy Duckworth
 Hon. Jodi Ernst
 Hon. Kristen Gillibrand
 Hon. Kamala Harris
 Hon. Edward Markey
 Hon. Jeff Merkley
 Hon. Bernard Sanders

Senator WHITEHOUSE. Finally, I have an opposition letter from 14 health and medical groups including the American Lung Association, the American Thoracic Society, the American Public Health Association and the Asthma and Allergy Foundation of America be put into the record.

Senator CAPITO. Without objection.

[The referenced information follows:]



May 22, 2017

Dear Senator:

Clean air is fundamental for good health, and the Clean Air Act promises all Americans air that is safe to breathe. The undersigned public health and medical organizations urge you to **oppose S. 263, the so-called "Ozone Standards Implementation Act of 2017."** A more fitting name for this legislation would be the "Smoggy Skies Act," as it delays lifesaving standards to reduce ozone pollution, or smog, and permanently weakens the Clean Air Act.

Clear, up-to-date, scientific evidence documented the need for greater protection from ozone pollution, and drove the stronger limit on ozone that the U.S. Environmental Protection Agency (EPA) finalized in 2015. To meet the updated standard, the states have clear authority and plenty of time to plan and then work to reduce pollution under the Clean Air Act's long-established, balanced implementation timeline. Despite those facts, the Smoggy Skies Act imposes additional delays and sweeping changes that will threaten health, particularly the health of children, seniors and people with chronic disease.

The Smoggy Skies Act also reaches far beyond implementation of the current ozone standards. It permanently weakens the Clean Air Act and future air pollution health standards for all criteria pollutants. **Specifically, the Smoggy Skies Act weakens implementation and enforcement of all lifesaving air pollution health standards, including those for carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide.** It would also permanently undermine the Clean Air Act as a public health law.

The Clean Air Act requires that EPA review the science on the health impacts of carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide air pollutants every five years and update these national ambient air quality standards according to the current science. **The Smoggy Skies Act would lengthen the review period of the air pollution health standards from once every five years to once every ten years for all criteria pollutants.** As the science continues to evolve, the public deserves that their protections be based on the most up-to-date science, certainly not a schedule that is twice as long as they currently have under the law. The work that EPA and states do to clean up air pollution should be based on the best and most current science.

Emerging research adds crucial information to our understanding of the impacts that air pollution has on human health, and EPA should not have to wait a decade to incorporate it. For example, on March 29, 2016, a newly

published study, *Particulate Matter Exposure and Preterm Birth: Estimates of U.S. Attributable Burden and Economic Costs*,¹ showed new information linking particulate air pollution to nearly 16,000 preterm births per year. Under the Smoggy Skies Act, EPA would have to wait as much as a decade to consider such new evidence when setting standards. **Ten years is far too long to wait to protect public health from levels of pollution that the science shows are dangerous or for EPA to consider new information.**

In the 2015 review of the ozone standard, EPA examined an extensive body of scientific evidence demonstrating that ozone inflames the lungs, causing asthma attacks and resulting in emergency room visits, hospitalizations, and premature deaths. A growing body of research indicates that ozone may also lead to central nervous system harm and may harm developing fetuses. In response to the evidence, EPA updated the ozone standards. While many of our organizations called for a more protective level, there is no doubt that the updated, 70 parts per billion standard provides greater health protections compared to the previous standard.

The Smoggy Skies Act would delay implementation of these more protective air pollution standards for at least eight years. This means eight years of illnesses and premature deaths that could have been avoided. Parents will not be told the truth about pollution in their community and states and EPA will not work to curb pollution to meet the new standards. **The public has a fundamental right to know when pollution in the air they breathe or the water they drink threatens health, and Congress must not add eight years of delay to health protections and cleanup.**

Furthermore, the American public overwhelmingly supports upholding these more protective limits on ozone. A [2017 poll](#) found that by a 2-to-1 margin, Americans believe Congress should leave EPA's updated standards in place, showing clear public opposition to the Smoggy Skies Act.

The Smoggy Skies Act would also permanently weaken implementation of the 2015 and future ozone standards. The Act would delay implementation to a date when the evidence shows that most states would meet the standard with cleanup measures already in place. It would also reduce requirements for areas with the most dangerous levels of ozone. Areas classified as being in "extreme nonattainment" of the standard would no longer need to write plans that include additional contingency measures if their initial plans fail to provide the expected pollution reductions. The Clean Air Act prioritizes reducing air pollution to protect the public's health, but the Smoggy Skies Act opens a new opportunity for communities to avoid cleaning up, irrespective of the health impacts.

Further, the bill would greatly expand the definition of an exceptional event. Under the Clean Air Act, communities can demonstrate to EPA that an exceptional event, such as a wildfire, should not "count" in determining whether their air quality meets the national standards. **This bill would recklessly expand the definition of exceptional events to include high pollution days when the air is simply stagnant – the precise air pollution episodes the Clean Air Act was designed to combat – and declare those bad air days as "exceptional."** Changing the accounting rules will undermine health protection and avoid pollution cleanup.

Additionally, the bill would permanently weaken the Clean Air Act. The Clean Air Act is one of our nation's premier public health laws because it puts health first. The Act has a two-step process: first, EPA considers scientific evidence to decide how much air pollution is safe to breathe and sets the standard that is requisite to protect public health with an adequate margin of safety. Then, states work with EPA to develop a plan to clean

¹ Trasande L, Malecha P, Attina TM. 2016. Particulate matter exposure and preterm birth: estimates of U.S. attributable burden and economic costs. *Environ Health Perspect* 124:1913–1918; <http://dx.doi.org/10.1289/ehp.1510810>

up air pollution to meet the standard. Cost and feasibility are fully considered in the second phase during implementation of the standard.

This bill states that if EPA finds that “a range of levels” of an air pollutant protect public health with an adequate margin of safety, then EPA may consider technological feasibility in choosing a limit within that range. Further, the bill would interject implementation considerations, including projections of adverse economic and energy effects, into the standard setting process. **These changes will permanently weaken the core health-based premise of the Clean Air Act – protecting the public from known health effects of air pollution with a margin of safety.**

These changes would reverse the intention of the Clean Air Act explicitly included by its bipartisan authors in Congress: that basing the standard on the protection of public health would push technology to develop new tools and techniques to reduce emissions. They understood that pushing the cleanup technology to meet the urgent need to protect health would help to expand job development and growth. They were correct, as the emission control industry today has helped the nation meet stronger standards in creative, cost-effective ways.

The Smoggy Skies Act is a sweeping attack on lifesaving standards that protect public health from air pollution. This bill is an extreme attempt to undermine our nation’s proven clean air health protections. Not only does it delay the long-overdue updated ozone standards and weaken their implementation and enforcement, it also permanently weakens the health protections against many dangerous air pollutants and the scientific basis of Clean Air Act standards.

Please prioritize the health of your constituents and vote NO on the Smoggy Skies Act.

Sincerely,

Allergy & Asthma Network
 Alliance of Nurses for Healthy Environments
 American Lung Association
 American Public Health Association
 American Thoracic Society
 Asthma and Allergy Foundation of America
 Center for Climate Change and Health
 Children’s Environmental Health Network
 Health Care Without Harm
 National Association of County & City Health Officials
 National Environmental Health Association
 National Medical Association
 Physicians for Social Responsibility
 Trust for America’s Health

Senator WHITEHOUSE. Thank you, Madam Chair.

Senator CAPITO. Before we proceed to Senator Flake, Senator Carper, the Ranking Member of the full committee, is going to introduce a member of the next panel. He asked if he could make a 4-minute statement which I granted him the right to do but if you would do your introduction at the same time, I would appreciate that.

**OPENING STATEMENT OF HON. TOM CARPER,
U.S. SENATOR FROM THE STATE OF DELAWARE**

Senator CARPER. I am happy to do that.

In 2015, the EPA finished its congressionally mandated review of the 2008 ozone health standard. After reviewing more than a thousand scientific studies, the EPA concluded that the 2008 ozone health standard was too weak and no longer adequately protected public health.

The EPA's rule is essentially a statement of fact, in order to protect the 6.3 million children with asthma, we need less ozone pollution in our air.

Fortunately, many of today's biggest emitters of ozone pollution, such as old coal plants, are already scheduled to be cleaned up. This means the costs of compliance are not as high as they might have been two, four or 6 years ago.

If Administrator Scott Pruitt and Congress keep the clean air protections on the books today intact, only 14 counties outside of California will not meet the new ozone standard by 2025.

I have a friend when you ask him how he is doing, he always says compared to what. How many counties are there outside of California in the United States. There are 2,949. The path that we are on, only 14 of those 2,949 will be out of compliance for ozone by 2025.

However, instead of working together to help the remaining communities meet the new ozone health standard, this Administration, unfortunately, is doing the opposite. Not only is the Administrator working on rolling back Federal clean air protections that will put more communities at risk, the Administration's Fiscal Year 2018 budget, which was released today, slashes critical clean air resources to States and local governments.

Congress is not doing much more to be helpful. The bills that are the subject of today's hearing direct EPA and the States to ignore the health science for 10 years before having to think about cleaning up.

It is little like taking your children to the doctor to see if they are sick and the doctor waiting 10 years to call you back with the test results. Not acceptable to me, probably not acceptable to most of us. I think it is also unacceptable when EPA is doing it.

These delays only serve to harm the 6.3 million children in this Country who have asthma today, many of them living in downwind States in the Eastern U.S. at the end of what many of us call America's tailpipe.

I have one chart I want to refer to very briefly. The blue line up here, growth in gross domestic product, is almost 150 percent. The bottom line is aggregate emissions, the six most common pollut-

ants, during the same period of time since 1980, down by 63 percent. Those are pretty good trajectories for both of those.

Our Nation's clean air protections have allowed our Country to make remarkable progress. We need to make some more of that. We still have some ways to go. As Robert Frost used to say, "We have miles to go before we sleep."

Before I introduce Shawn Garvin, the Secretary of the Department of Natural Resources and Environmental Control, I want to point out sitting right behind him is Ali Mirzakhali. When Shawn testifies, you will see Ali move his lips. He has been our air guy forever.

Shawn Garvin was just confirmed for the position of Secretary of the Department of Natural Resources and Environmental Control by our State Senate in March of this year. This agency is tasked with protecting and managing the State's natural resources and protecting public health and the environment.

Shawn has years of experience serving the people of the first State and addressing clean air issues, especially the unique challenges that face downwind States like Delaware.

I have more to say here but you have been very generous already with giving my opening statement. I would ask unanimous consent to enter the rest of my statement and my introduction of Shawn for the record.

Thank you.

Senator CAPITO. Without objection.

Senator CARPER. Shawn, welcome.

Senator CAPITO. Thank you.

On our first panel is our colleague from Arizona, Senator Flake. Senator Flake, you are recognized for 5 minutes.

**OPENING STATEMENT OF HON. JEFF FLAKE,
U.S. SENATOR FROM THE STATE OF ARIZONA**

Senator FLAKE. Thank you, Chairwoman Capito and Ranking Member Whitehouse. I appreciate you allowing me to speak in support of the Ozone Standards Implementation Act of 2017 which I am pleased to join the Chairwoman in co-sponsoring. I believe it is a sensible piece of legislation.

I also want to thank Chairwoman Capito and Ranking Member Whitehouse and the rest of the panel for allowing my legislation, the Ozone Regulatory Delay and Extension of Assessment Length, the ORDEAL Act. It is an ordeal just to get through that acronym I know.

We all want clean air and as a Nation, we have come a long way since the Clean Air Act and its subsequent amendments. However, we all ought to be concerned about regulation that creates burdensome red tape for little or no appreciable benefit.

I am happy to see Director Cabrera representing the Arizona Department of Environmental Quality on the witness panel today and providing the perspective of Arizona environmental regulators who have to implement these standards.

I am also glad that Dr. Monica Kraft from Arizona is here to share her perspective as well.

This issue is very important to my home State of Arizona. I have testified twice on the pressing need for ozone reform. In 2015, the

EPA essentially changed the rules in the middle of the game and finalized its rules on the ozone emissions standard at 70 ppb.

After this rule came out, I heard from stakeholders throughout Arizona that it might be impossible for the State to meet this new standard. With costly compliance requirements, this onerous rule will burden counties and businesses already working in good faith to meet the previous standard.

In my opinion, the rule demonstrates complete tone deafness. It is particularly detrimental to Arizona where we greatly feel the impact of EPA's failed air regulatory regime. This rule comes with great cost and with little to no benefit.

In fact, Arizona's Attorney General joined other States in filing a lawsuit over the rule. I believe it is time for Congress to step in. That is why I was happy to work with Chairwoman Capito in introducing the Ozone Standards Implementation Act of 2017.

Among other provisions, this legislation phases-in the implementation of the 2008 and 2015 ozone standards, extending the compliance date for the 2015 standards to 2025. This bill also includes a provision from the bill I have introduced, the ORDEAL Act, that would change the mandatory review of national ambient air quality standards from 5 years to 10 years. This would make a big difference.

It is critical that States have the flexibility and time to implement their own innovative and proactive measures. That is why last year, I introduced a congressional Resolution to halt implementation of EPA's 2015 rule on ozone. We have to have time to be able to comply. We cannot change the rules in the middle of the game.

I am pleased that Congress is focusing on legislative remedies and I will continue to support legislation and regulatory changes to lessen the impact of this devastating rule on Arizona communities.

Thank you, Madam Chair and members of the subcommittee.

Senator CAPITO. Thank you, Senator Flake. I appreciate your testimony.

With that, I will ask the witnesses for the second panel to please join the table. Welcome to all of you. I am going to provide a brief introduction of all of you.

Mr. Garvin has been introduced. I will skip over him in the interest of time.

Our first panelist is Mr. Misael Cabrera, P.E., Director, Arizona Department of Environmental Quality. Thank you for coming. Next, we have Ahron Hakimi, welcome to you. He is the Executive Director, Kern Council of Governments in California. Next we have, Mr. Kyle Zeringue, Senior Vice President, Business Development, Baton Rouge Area Chamber in Louisiana. Last, we have Dr. Monica Kraft, MD, Past President of the American Thoracic Society, University of Arizona College of Medicine in Tucson.

Mr. Cabrera, you have 5 minutes.

**STATEMENT OF MISAEAL CABRERA, P.E., DIRECTOR, ARIZONA
DEPARTMENT OF ENVIRONMENTAL QUALITY**

Mr. CABRERA. Madam Chairman and members of the committee, my name is Misael Cabrera. I am the Director of the Arizona of

Environmental Quality. I greatly appreciate the opportunity to offer testimony today.

It is important to know that because ozone creating compounds can travel hundreds, if not thousands of miles, the new ozone rule punishes the victims of pollution, not just the polluters.

Because of that, we appreciate the ORDEAL Act and the Ozone Standards Implementation Act of 2017 because they provide immediate relief to all States and some of Arizona's industrialized areas, allowing enough time for measures required by the 2008 ozone standard to fully take effect and air quality to improve.

Irrespective of the implementation timeframe, however, the standard itself remains a challenge for Arizona. That is why we are the lead State challenging the standard in court. The Clean Air Act has five mechanisms to bring nonattainment areas into compliance or provide relief. All of them are inadequate for rural Arizona and likely other western States, again punishing the victims of pollution, not just the polluters.

These mechanisms include State regulation, designation of rural transport areas, designation of interState or international transport areas, and demonstrating exceptional events. I will discuss each mechanism and its shortcomings in the context of a small county in rural Arizona.

Yuma County is located in the southwest corner of Arizona bordered by both California and Mexico. The county contains a few small towns and the city of Yuma and has the highest unemployment rate of any metropolitan area in the U.S. as of July 2016 according to Bureau of Labor statistics.

Yuma is predominantly an agricultural community and despite its lack of industrialization, Yuma County exceeds the 2015 ozone standard. As you may know, volatile organic compounds and oxides of nitrogen react in the presence of sunlight to produce ozone.

According to the U.S. EPA's 2014 National Emission Inventory, industrial sources account for only 2 percent of total volatile organic compound emissions and only 5 percent of NOx emissions within the county.

All other sources are either naturally occurring or not regulated by the State of Arizona. Simply put, there are not enough emission sources that Arizona can regulate to achieve compliance with the new standard.

In addition, Yuma County would not qualify for the rural transport mechanism because the Clean Air Act states that a rural area seeking relief cannot be adjacent to or include any part of a metropolitan statistical area.

The cross-State air pollution rule does not apply to Yuma County. Although 20 percent of ozone concentrations in Yuma County emanate from California manmade sources, the rule only helps downwind nonattainment areas receive emissions reductions from upwind attainment areas. California has no emissions reductions to contribute downwind.

Further, the exceptional events rule is of dubious value to Yuma County, if not the whole Country. Although Arizona has been a national leader in development of an exceptional event documentation for dust events, the process for documenting and receiving EPA ap-

proval for ozone exceptional events has not been explained, will be resource intensive and is difficult to predict.

The best case scenario for Yuma is that our agency can make an international transport demonstration given that EPA's own modeling shows that international sources are responsible for up to 68 percent of ozone emissions affecting Yuma.

Unfortunately, that demonstration can only occur after the 3-year marginal attainment deadline is exceeded. Yuma would still have to comply with higher, nonattainment classification requirements, effectively limiting economic growth in a high unemployment area in perpetuity as a consequence of emission sources that originate primarily outside of Arizona or outside of Arizona's jurisdiction to control.

To further exacerbate the issue of international transport demonstrations, the EPA's proposed implementation rule requires an area to implement reasonable, available control measures before EPA will review the demonstration. In short, the current ozone rules punish the victims of the pollution, not the polluters.

For all these reasons, Arizona is challenging the 2015 ozone standard in court and favors longer implementation timeframes. We also request that consideration be given to legislation that would allow rural and international transport demonstrations before areas are classified as nonattainment and before unnecessary regulation is initiated.

Thank you. I am happy to answer any questions.

[The prepared statement of Mr. Cabrera follows:]

Testimony
U.S Senate Committee on Environment and Public Works
Subcommittee on Clean Air and Nuclear Safety
Tuesday, May 23, 2017
by
Misael Cabrera, Director
Arizona Department of Environmental Quality

Mr. Chairman, members of the Committee. My name is Misael Cabrera, I am the Director of the Arizona Department of Environmental Quality and I greatly appreciate the opportunity to offer testimony today.

The ORDEAL Act (Ozone Regulatory Delay and Extension of Assessment Length Act of 2017) and the Ozone Standards Implementation Act of 2017 provide immediate relief to all states and some of Arizona's industrialized areas, allowing enough time for measures required by the 2008 Ozone standard to fully take effect and air quality to improve (Attachment A).

Irrespective of the implementation timeframe, however, the standard itself remains a challenge for Arizona and that is why we are the lead state challenging the standard in court. The Clean Air Act has five mechanisms to bring nonattainment areas in to compliance or provide relief - all of them are inadequate for rural Arizona and likely other Western states. These mechanisms include: state regulation; designating rural transport areas; designating interstate or international transport areas; and demonstrating exceptional events. I will discuss each mechanism and its shortcomings in the context of a small county in rural Arizona.

Yuma County is located in the southwest corner of Arizona, bordered by both California and Mexico. The county contains a few small towns and the City of Yuma, and has the highest unemployment rate of any metropolitan area in the U.S. (July 2016¹). Yuma is predominantly an agricultural community, and despite its lack of industrialization, Yuma County exceeds the 2015 ozone standard.

As you may know, volatile organic compounds (VOCs) and oxides of nitrogen (NOx) react in the presence of sunlight to produce ozone. According to the U.S. Environmental Protection Agency (EPA) 2014 National Emission Inventory, industrial sources account for only 2% of total VOC emissions, and 5% of NOx emissions within the County.

¹ <https://www.bls.gov/opub/ted/2016/yuma-arizona-had-highest-unemployment-rate-in-july-2016.htm>

All other sources are either naturally occurring, or not regulated by the State. Simply put, there are not enough emissions sources that Arizona can regulate to achieve compliance with the new standard (Attachment B).

In addition, Yuma County would not qualify for the rural transport mechanism because the Clean Air Act states that a rural area seeking relief cannot be adjacent to or include any part of a Metropolitan Statistical Area (MSA), defined by the U.S. Census as an entire county comprising of 50,000 people or more.

The Cross-State Air Pollution Rule is yet another option that does not apply to Yuma County. Although 20% of ozone concentrations in Yuma County emanate from California manmade sources, the rule only helps downwind nonattainment areas receive emissions reductions from upwind attainment areas. California has already implemented the most stringent controls in the Country, is still unable to achieve compliance with the standard, and has no emissions reductions to contribute downwind (Attachment C).

Further, the exceptional events rule is of dubious value to Yuma County, if not the whole country. Although Arizona has been a national leader in the development of exceptional event documentation for dust events, the process for documenting and receiving EPA approval of ozone exceptional events has not been explained, will be almost certainly resource intensive, and is difficult to predict.

The best case scenario for Yuma is that our agency can make an international transport demonstration given that EPA's own modeling shows that international sources² are responsible for 68% of ozone emissions affecting Yuma (Attachment D – EPA Ozone Map & Data).

Unfortunately, that demonstration can only occur after the three-year marginal attainment deadline is exceeded and Yuma would still have to comply with higher nonattainment classification requirements – requirements that would limit economic growth in a high unemployment area in perpetuity as a consequence of emission sources that originate primarily outside of Arizona or outside of Arizona's jurisdiction and control.

² Includes natural and manmade sources outside of the modeling domain.

To further exacerbate the issue of international transport demonstrations, the EPA's proposed Implementation Rule requires an area to implement Reasonable Available Control Measures before the EPA will review the demonstration.

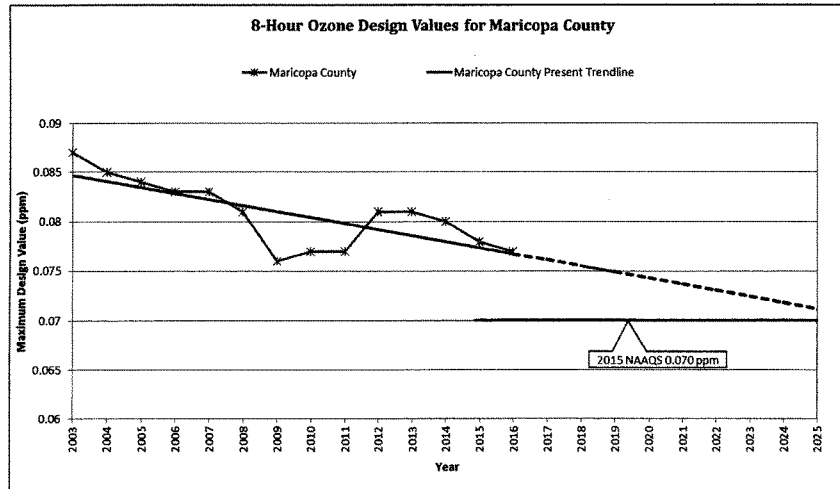
For all of these reasons, Arizona is challenging the 2015 ozone standard in court and favors longer implementation timeframes. We also request that consideration be given to legislation that would allow rural and international transport demonstrations before areas are classified as nonattainment and before unnecessary regulation is initiated.

Thank you and I am happy to answer any questions.

ATTACHMENT

A

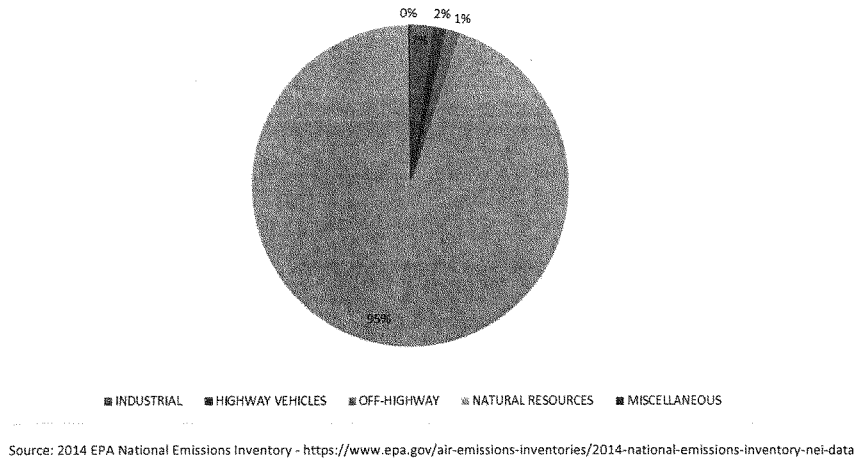
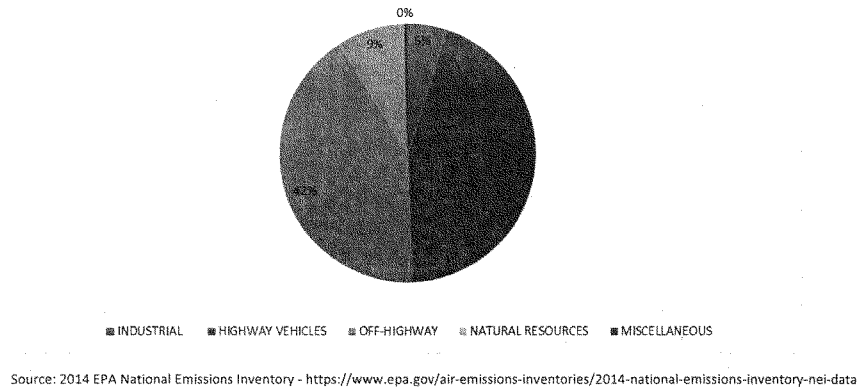
Projected Decrease in Ozone in Maricopa and Yuma Counties



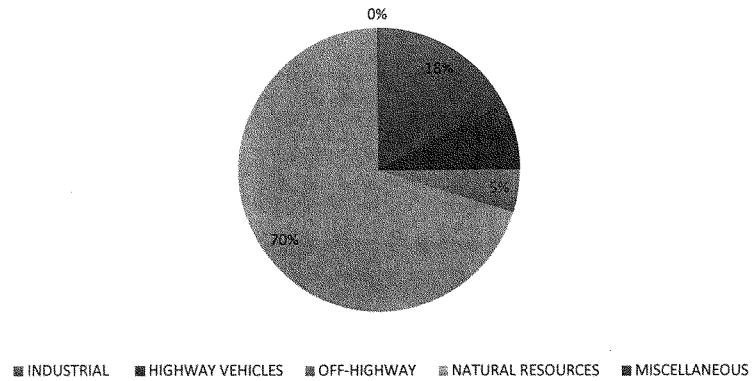
Source: EPA Air Data - <https://www.epa.gov/outdoor-air-quality-data>

ATTACHMENT

B

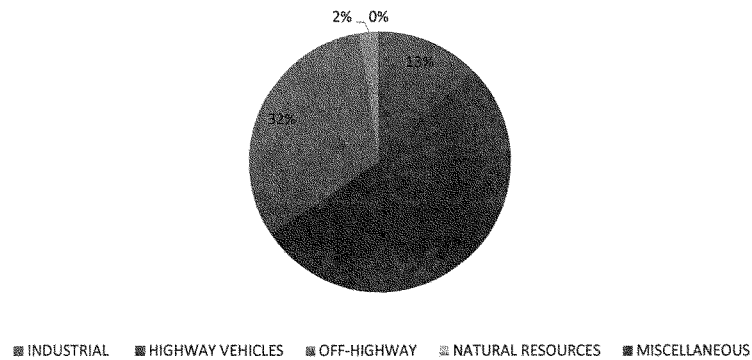
Yuma County - 2014 VOC National Emissions Inventory**Yuma County - 2014 NOx National Emissions Inventory**

Maricopa County - 2014 VOC National Emissions Inventory



Source: 2014 EPA National Emissions Inventory - <https://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data>

Maricopa County - 2014 NOx National Emission Inventory



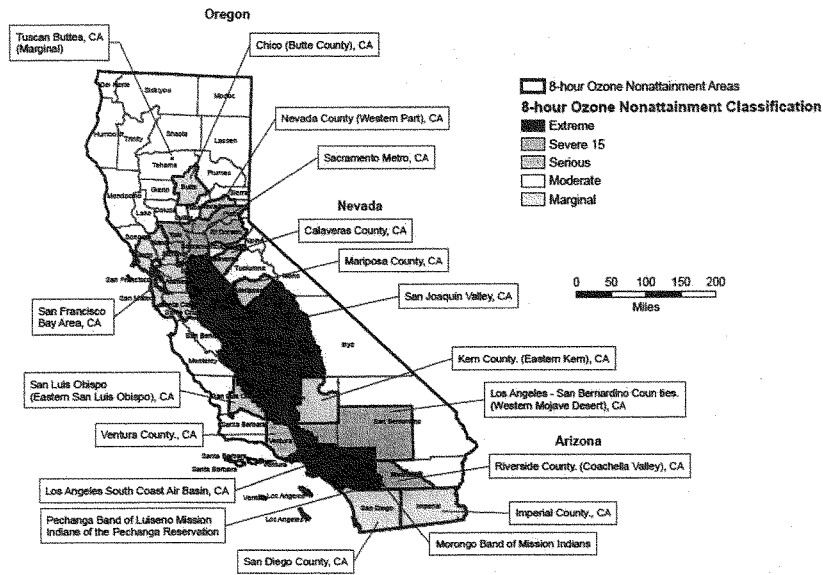
Source: 2014 EPA National Emissions Inventory - <https://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data>

ATTACHMENT C

Pre-2015 Ozone Nonattainment Area Classification in California

California 8-hour Ozone Nonattainment Areas (2008 Standard)

10/01/2015

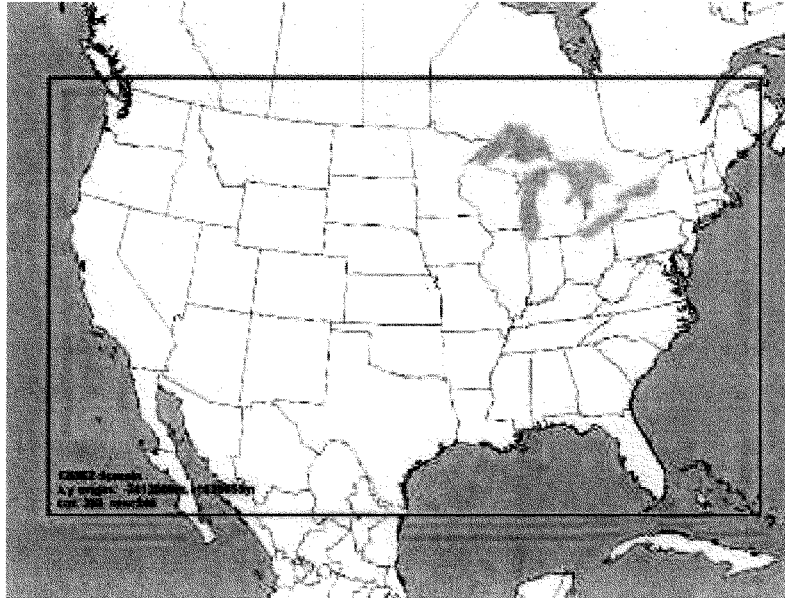


(Source: http://www.evomarkets.com/environment/emissions_markets/markets/emission_reduction_credits/california)

ATTACHMENT

D

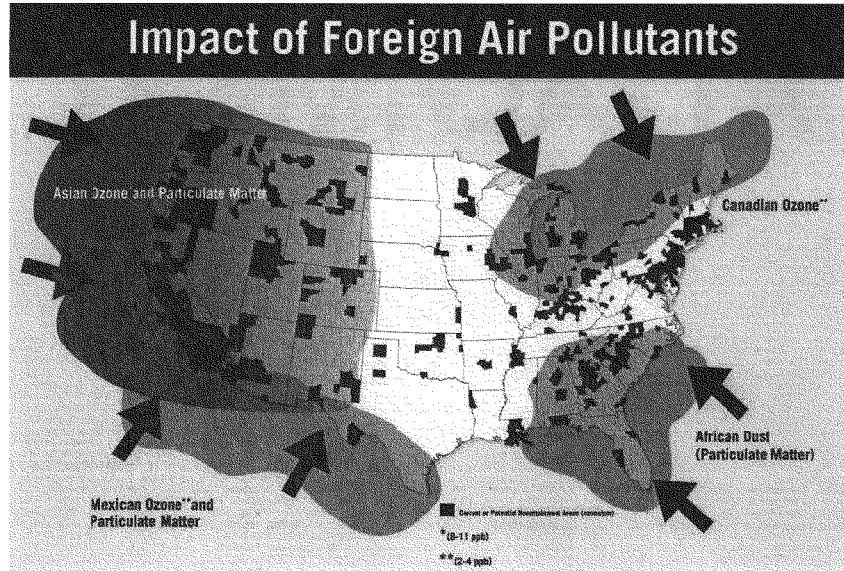
U.S Environmental Protection Agency Projection of Ozone Transport to Yuma County, Arizona



County	Percent Contribution			
	AZ (man-made sources)	CA (man-made sources)	Canada & Mexico (portions inside purple box)	Initial & Boundary (everything* outside purple box)
La Paz	10%	12%	3%	70%
Maricopa (JLG)	41%	5%	3%	45%
Yuma	6%	20%	7%	61%

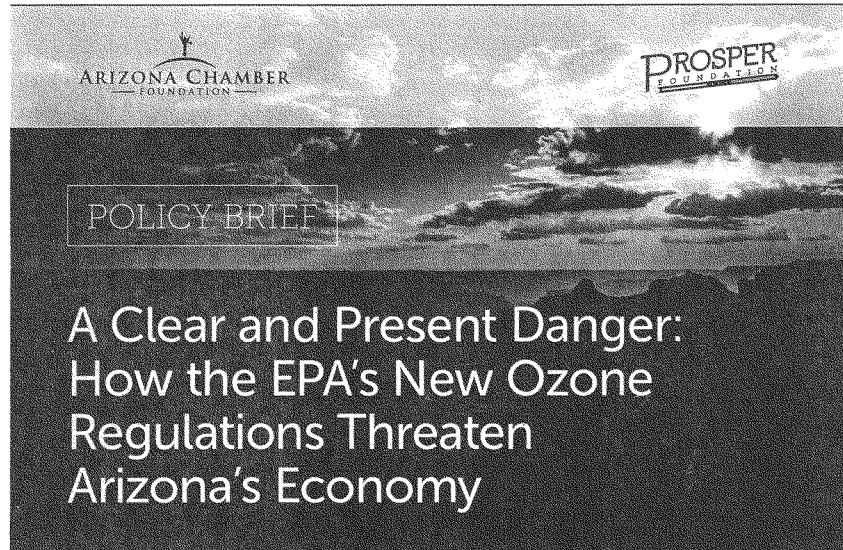
*Everything includes natural and man-made emissions

Source: EPA Transport Modeling: <https://www.epa.gov/airmarkets/proposed-cross-state-air-pollution-update-rule>



Source: <https://www.uschamber.com/issue-brief/ozone-national-ambient-air-quality-standards>

ATTACHMENT E



Introduction

In October 2015, the Environmental Protection Agency ("EPA") lowered the national standard for ground-level ozone to 70 parts per billion (ppb). Arizona's unique location in the southwest region of the United States makes achieving the lower standards unrealistic. Since 2008, when the EPA set the standard at 75 ppb, Arizona and other states across the country have been working diligently to reduce their emissions to meet that standard. Although Arizona was making great strides toward achieving attainment of 75 ppb, its climate and geographic location will make it nearly impossible for Arizona to meet the new lower standard despite best efforts by Arizona industry and regulators. The consequences of nonattainment could be dramatic for Arizona: existing Arizona businesses and companies interested in expanding in the state will be unable to secure necessary permits and face limitations or outright bans on construction, and Arizona's federal highway dollars will be compromised.

The EPA's move to lower the standard now is premature and unnecessary. States across the country, including Arizona, have only just begun to see the impacts of the control measures they implemented after the 2008 standard was promulgated. Furthermore, scientists from the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA) have found that, while "North American emissions contribute to global ozone levels, [there is no] evidence that these local emissions are driving the increasing trend in ozone above western North America."¹ While the western United States reduced its production of ozone by 21 percent between 2005 and 2010, the region's air quality did not enjoy the expected improvement in response.² That is because domestic reductions are being offset by increases in ozone originating in Asia and elsewhere.³

Given this disturbing international trend and other local factors that make attainment costly and difficult, lowering the standard from 75 ppb to 70 ppb is not substantiated by the required scientific data to support such a move. Protecting our air is of utmost importance to all of us lucky enough to call Arizona home—dare say even more so—than it

is to federal regulators in Washington. But Arizona and its businesses are already making great strides in protecting air quality and ensuring Arizonans enjoy healthy air. The EPA has acted far outside its mandate, setting a new standard that is unjustified by science and impossible to meet without severe economic consequences.

I. The Clean Air Act and the National Ambient Air Quality Standards

The Clean Air Act (CAA), originally passed by Congress in 1970, is the federal law that regulates air quality. The CAA was intended to protect public health by regulating emissions of common air pollutants from both mobile and stationary sources (i.e. vehicles and industry), which at that time were unregulated. To that end, the CAA authorizes the EPA to establish National Ambient Air Quality Standards (NAAQS) for a variety of air pollutants, including ground-level ozone.⁴

But the EPA's mandate to regulate in this area is not unlimited. Rather, pursuant to the CAA, the EPA may only regulate emissions to the extent that public health is protected "with an adequate margin of safety."⁵

Since the EPA set the first NAAQS at 80 ppb in 1971,⁶ emissions across the country have been reduced significantly.⁷ Ozone levels have declined by 33% since 1980,⁸ as man-made sources of ozone have fallen in North America and Europe as a result of air-quality legislation.⁹ Given the great strides toward attainment and the reductions we have already seen, the health impact of further reductions may be inconsequential at best while the costs associated with such reductions will be exponential.

The EPA has acknowledged the incremental nature of further reductions, stating that while there is "no bright-line rule delineating the set of conditions or

scales [within the range proposed] at which known or anticipated effects become adverse to public welfare," its position is nevertheless that the lower the standard, the better.¹⁰

Scientists involved in setting the new regulation looked at health impacts from ozone levels ranging from 60 to 72 ppb using various studies, most notably one from 2009 examining just 31 people exercising with varying levels of ozone exposure over a 6-hour period.¹¹ The EPA's policy assessment of the new standard makes clear that, based on this research, respiratory symptoms were seen at concentrations as low as 72 ppb, but that numerous exposure uncertainties existed with respect to the relative weight given to different risk estimates at lower levels.¹²

The EPA Administrator ultimately determined that within the probabilistic range of impact, lowering the standard to 72 ppb was supportable, but stated that she had "decreasing confidence that adverse effects will occur following exposures to [ozone] concentrations below 72 ppb."¹³ Nevertheless, the EPA set the new standard at 70 ppb anyway, despite the cost and consequences to states trying to come into attainment.¹⁴ Indeed, the EPA has acknowledged that, according to its own modeling, there are areas in the Intermountain Western U.S.¹⁵ in which "substantial background contributions . . . [already] approach or exceed the [75 ppb] NAAQS."¹⁶ Furthermore, a 70 ppb standard

was explicitly rejected by the EPA Administrator in a 1997 review of the then-current NAAQS precisely because it was too close to peak background concentrations.¹⁷ Lowering the standard to 70 ppb now only makes sense in a world in which an

emissions target of zero is the goal and the cost of further reduction is of no consequence. Even the EPA, however, acknowledges that the CAA does not require a zero-risk level.¹⁸

II. Understanding Ozone

At the stratospheric level, ozone is a good thing—it protects us from the sun's harmful U.V. rays. In contrast, ground-level ozone—the primary component of smog—may affect air quality. Some studies (while inconclusive) suggest that ground-level ozone on its own or when mixed with other potential pollutants such as particulate matter can have adverse health consequences like asthma and bronchitis.¹⁹ However, some studies also indicate that ozone alone—while a risk factor—may not cause significant demonstrable health issues for most populations. Rather, it is the interaction with other elements that presents possible negative health effects to the human body.²⁰ In addition, ozone "is a natural constituent of the atmosphere and the lung is equipped with [defense] mechanisms" to deal with it.²¹ The task for scientists and regulators is to determine, with regard to ozone specifically, how it interacts with other pollutants, how it presents itself in various geographic areas, and how any specific population may or may not be impacted.

Ground-level ozone is formed when nitrogen oxides (NOx) and volatile organic compounds

(VOCs)—also referred to as ozone precursors—react in the presence of sunlight and other weather conditions.²² The ways in which these reactions occur is highly complex and remain only partially understood.²³

The NOx and VOCs in our environment are both naturally occurring ("biogenic") as well as the result of man-made ("anthropogenic") pollution. For example, nitrogen oxides come from agricultural sources like synthetic fertilizer and livestock manure, and fossil fuel combustion from mobile sources (e.g. cars) and stationary sources (e.g. coal-fired power plants).²⁴ Nitrogen oxides also come from natural sources like lightning and biological decay in our soil and oceans.²⁵ Similarly, VOCs come from man-made sources like solvents (paint, adhesives, wood strippers, and cleansers) and various processes like dry cleaning and oil production and refining.²⁶ Naturally-occurring VOCs primarily come from plant life; tropical forests are estimated to produce approximately half of all global biogenic VOC emissions.²⁷

III. If Ground-Level Ozone is Bad, Why isn't the EPA's Lower Standard Good?

A large percentage of ozone precursors are naturally occurring. In addition, ozone is often transported hundreds of miles from its point of origin. Thus, for many states, especially those of the Intermountain Western U.S., the ozone found

within their borders is largely not within their control. So even though ground-level ozone may, in large quantities, have adverse health effects, it is unrealistic to expect that states can continue to reduce or even eliminate ground-level ozone.

That is especially true in Arizona, where the primary sources of ground-level ozone precursors are cars and plants.²⁸ In Maricopa County, a mere 1% of VOC emissions come from point source major emitters (i.e. industrial, manufacturing and electrical power generating facilities); in contrast, 43% of Maricopa County's VOC emissions come from biogenic sources (i.e. natural vegetation).²⁹ Coupled with unusually high levels of background ozone and Arizona's dry and sunny desert climate, Arizona is at a unique disadvantage when it comes to complying with the EPA's new standard for ground-level ozone.

First, as a border state and a gateway to Southern California, Arizona's federal, state and local highways are heavily traveled by those passing through and residing within the state. Arizona's primary sources of nitrogen oxide emissions are on-road and non-road mobile sources (primarily cars, but also airplanes, construction equipment, and lawn equipment).³⁰ As Arizona's Department of Environmental Quality ("ADEQ") has pointed out, "[l]ocally implemented pollution controls are unlikely to be effective at reducing ambient ozone levels across [Arizona] because ozone is a regional problem and caused primarily by cars."³¹ And because vehicle emissions are regulated at the federal level, they are wholly outside Arizona's control; Arizona's most effective strategy for reducing its ozone is therefore entirely in the hands of federal regulators responsible for vehicle emission standards.³² It is also important to note that Arizona has a high proportion of older—and therefore dirtier—vehicles as compared to the rest of the country,³³ because our great weather allows cars to remain in operable condition for a very long time.

Arizona's primary source of VOCs is biogenic emissions, which are emissions from natural sources such as vegetation, soil and lightning. Arizona has the largest ponderosa pine forest in the United States, but no one would seriously argue that Arizona should reduce its VOC emissions by cutting down trees. Thus, Arizona has no meaningful way of reducing its two biggest sources of ozone precursors—cars and plants.

Arizona's unique geography contributes to its high levels of ozone and will make it essentially impossible to comply with the EPA's new standard without dire effects.

Second, Arizona has extremely high levels of background ozone. "Background ozone" refers to ozone that results from naturally-occurring emissions such as wildfires, lightning or the natural "off-gassing" of plants. It also includes emissions from man-made sources outside the borders of the United States (also referred to as international transport).³⁴ Background ozone is incredibly hard to measure, and requires complicated and expensive photochemical modeling. Even if proven, the EPA does not permit exclusions for background. Rather, states whose ozone levels are above the federal standard—regardless of the source—are deemed "nonattainment areas," which has significant consequences for the receipt of necessary permitting and federal highway dollars.³⁵

Arizona's ozone is comprised significantly of transport from Mexico and California (California's ozone has been shown to include ozone from as far away as Asia). Thus, even if Arizona's Department of Environmental Quality can prove—at great cost—that Arizona would be in attainment "but for" the internationally transported ozone precursors originating in Mexico or Asia, it would still be put into nonattainment status. And while the EPA may include international transport in the definition of background ozone, it does not consider emissions purportedly generated by man-made sources within the U.S. as background regardless of where they were generated. In other words, it doesn't matter if emissions measured in one state are generated in another state (referred to as interstate transport), even though they are outside the control of the impacted jurisdiction.³⁶ That means Arizona gets no benefit from proving

to the EPA that it would be in attainment "but for" ozone originating in California.

Finally, Arizona's unique geography contributes to its high levels of ozone and will make it essentially impossible to comply with the EPA's new standard

without dire effects. Arizona's mountainous terrain, with its alternating valleys and high altitudes, lends itself to an accumulation of ozone.³⁷ Coupled with Arizona's hot, dry, sunny climate and propensity for wildfires and lightning, Arizona is a textbook environment for ground-level ozone.

IV. What About the EPA's "Tools" for Dealing with Background Ozone?

Federal regulators maintain that states have "tools" at their disposal for addressing background ozone. But because of the make-up of Arizona's ozone, the so-called "tools" made available by the EPA are inadequate to enable Arizona to meet the new standard.

Rural Transport

The Clean Air Act allows the EPA to determine that a rural area that is not in compliance with the federal standard can be treated as a "rural transport area" (RTA), thereby providing certain relief mechanisms for that designated area. However, to qualify as an RTA, the state must show that the rural area does not contain major emission sources and is not included within nor is adjacent to a highly populated urban area.³⁸ This is not helpful for a large western state like Arizona, where huge rural areas—some of which are tens of thousands of acres and larger than entire states on the eastern seaboard—are all adjacent to areas that contain urban population centers. Furthermore, because RTAs are technically designated as nonattainment areas, they must meet the EPA's requirements for nonattainment areas, including developing a baseline emissions inventory, implementing a new source review program, submitting major source emission statements, and preparing transportation and general conformity demonstrations—all costly and technical requirements. The only relief an RTA receives is that it is not subject to the more stringent requirements of a higher-classified nonattainment area. Regardless, of all the rural areas in Arizona that will be unable to comply with

the 2015 ozone standard, there are likely none that would be able to seek an RTA designation.

International Transport

The Clean Air Act allows the EPA to approve a state's ozone attainment plan—a required part of meeting the federal ozone standard—if the state can demonstrate that ozone originating in another country is a significant impediment to its ability to meet the federal standard and that it has taken "appropriate local measures" toward attainment.³⁹ But this provision does not exclude international transport from the state's ozone levels, nor does it prevent areas from within the state from being placed in nonattainment status; to the contrary, an international transport designation puts the area into marginal nonattainment status and requires the area to implement marginal nonattainment programs.⁴⁰ Furthermore, because of the nature of ozone, proving international transport is time-consuming and expensive. For example, El Paso, Texas spent 10 years and undoubtedly an obscene amount of money to prove that a portion of its ozone came from Juarez, Mexico.⁴¹ To date, it is the only city that has been successful in doing so. The CAA's international transport provision is therefore not helpful to Arizona, which borders on and gets significant ozone from Mexico and, increasingly, from Asia.

Exceptional Events

An "exceptional event" is an event—natural or caused by human activity—that affects air quality, is unlikely to recur at a particular location, and cannot be reasonably controlled or prevented.⁴²

The Clean Air Act allows the EPA to exclude ozone caused by exceptional events if a state can prove—through an expensive, technical, and time-consuming process—that it meets the exceptional events criteria.⁴³ Given the cost of the demonstration and the frequency of exceptional events like wildfires and lightning in Arizona, this provision is too onerous to be a tool of any significance. According to ADEQ, the cost of a typical exceptional events demonstration for particulate matter (i.e. dust) is around \$50,000 per event; a demonstration for ozone would be significantly higher due to the complicated modeling such a demonstration would require.⁴⁴

As of October 2015, Wyoming is the only state that had been granted an “exceptional event clearance by EPA due to high background ozone levels”⁴⁵ for stratospheric intrusion—a demonstration that can take anywhere from four to eight months to produce.⁴⁶ Wyoming’s Department of Environment Quality estimates that an exceptional events demonstration for an ozone exceedance caused by wildfire would require 15 months and \$150,000 to produce.⁴⁷ Even if a state succeeds in proving an exceptional event, the remedy is merely the exclusion of data affected by the event, which does not assure that the state will avoid nonattainment.

V. Punishing Arizona for Ozone It Can’t Control

The EPA’s new ozone rule could penalize nine out of the 10 counties in Arizona in which ADEQ or other government entities measure ozone levels.⁴⁸ That is because although the Clean Air Act technically does not require states to reduce emissions from background sources that are not in their control, the EPA does not consider ozone from man-made pollution generated within the U.S. the type of “background” for which states are not held accountable.⁴⁹ In other words, the EPA does not allow states to “discount” for ozone transported into their borders from a neighboring state.⁵⁰ This is particularly problematic for Arizona, where neighboring California contributes non-negligible amounts of ozone for which Arizona is ultimately held responsible. As a result, parts of Arizona will be out of compliance due to uncontrollable ozone, yet Arizona must still act to reduce its own ozone emissions to bring its total amount to a level within the federal standard.

For example, La Paz County, Arizona already has a projected three-year concentration of 70 ppb for 2013-2015; 52.68 ppb of that is represented by background.⁵¹ La Paz County is home to just 20,000 people and the size of the state of Connecticut;

with no local industry, La Paz County has no local mechanisms for reduction or control.⁵²

Likewise, Yuma County’s ozone level is hovering around 76 ppb;⁵³ industrial sources account for only about five percent of that.⁵⁴ With a relatively small population and small manufacturing base, the majority of Yuma County’s ozone is transport originating in California and Mexico.⁵⁵ As Misael Cabrera, Director of Arizona’s Department of Environmental Quality, recently testified before Congress, “No matter how many local emissions reductions are achieved, Yuma County simply will not be able to achieve compliance with the new [70 ppb] standard.”⁵⁶

Other states of the Intermountain Western U.S. are in similar situations. For example, Colorado’s Department of Public Health and Environment noted the effect of transport on Colorado’s ozone levels, pointing out that rural monitoring in Colorado demonstrates that “ozone can [l] regularly exceed existing standards due to emissions transported into Colorado from upwind sources.” EPA’s own figures show a contribution to Colorado’s background levels of anywhere between three and seven ppb from interstate transport.⁵⁷

VI. What Offsets?

Once an area is designated nonattainment, the CAA mandates that there can be no net increase in emissions from new or modified existing sources. That means emissions offsets must be obtained prior to the construction or expansion of any major source in a nonattainment area.

For an area that is already in nonattainment status, any offset must provide a net air quality benefit. It must also be:

Real: the offset must be based on actual emissions reductions;

Permanent: the offset must be assured for the life of the corresponding emission increase;

Surplus: the emission reduction must not have been mandated by any other local, state or federal requirement; and

Quantifiable: the offset must be capable of reliable and replicable measurement.⁵⁸

In other words, in order to get credit for an offset, it must be in the same location and represent the same type of emission (NOx or VOC) and source (mobile or stationary) for which it is being credited, and the company using the offset must show, to the EPA's satisfaction, that the offset is no longer emitting. In addition, the offset must already be in the existing emissions inventory and must equal or

exceed the amount of emission increases at the new or modified source.

In a state like Arizona, where available offsets are incredibly limited or nonexistent,⁵⁹ this is an extremely limiting control mechanism. And in counties facing nonattainment under the new standard in which there are essentially no local offsets—like La Paz and Yuma Counties—it's not even a control mechanism.

Arizona is not alone. Like Arizona, Nevada's large rural areas are in nonattainment due to transport and have few available local offsets. As such, the lower standard "will result in the effective foreclosure of new industrial growth in [Nevada's] rural ozone non-attainment areas . . . which is likely to have devastating consequences on these rural communities since they may already be struggling economically."⁶⁰

Given the grim economic development consequences, ADEQ, the Governor's Office, and key stakeholders are working together on a task force to come up with creative and innovative ways to generate offsets that will foster, not inhibit, economic growth. The reality, though, is that the dearth of available offsets in Arizona renders even the most creative offset incentive of limited utility.

VII. Federal Overreach Costs Arizona

Unilaterally lowering the standard for ground-level ozone from 75 ppb to 70 ppb, despite evidence that 70 ppb is not an attainable standard in the Intermountain Western U.S., represents a problematic example of federal overreach. Rather than taking a critical view toward the actual sources of air quality issues in particular areas and what can be done to alleviate pollution from primary

emissions sources, the federal government has used its rulemaking power to take a broad swipe to the entire country, disparately impacting the Intermountain Western U.S. and creating an environment of winners and losers from a national economic impact viewpoint. Arizona and other states of the Intermountain Western U.S. will experience a significant negative economic impact

should this rule be implemented as planned without the support and consequences of good technical, scientific, location- and population-specific models developed with data. It is the federal government's responsibility to establish what is necessary to support and implement the rule, not the states' responsibility to lessen the impact.

The costs to Arizona of this overreach are significant and will reach across the state, impacting

our economic development outlook for years to come. The cost and feasibility of compliance will simply prove too great for many businesses, forcing them to shut down, relocate operations, or forgo growth and expansion. This says nothing of the businesses that will simply choose not to come to Arizona due to the uncertainty of obtaining necessary permits to operate, an unfortunate consequence that has already come to fruition.

VIII. Challenging the EPA's Overreach: Arizona Takes the Lead

Precisely for the reasons outlined here, in November 2015 Arizona—now joined by nine other states⁶¹—filed a lawsuit asking a federal court to review the EPA's new standard. Led by Arizona Attorney General Mark Brnovich, Arizona's lawsuit charges that, in setting the new standard for ground-level ozone at 70 ppb, the EPA abused its rulemaking authority and acted outside its CAA mandate.

Arizona's lawsuit, which is currently before a federal appeals court in Washington, D.C., raises the question of whether the EPA violated the Clean Air Act and federal requirements for rulemaking when it set the NAAQS at a level at or below background⁶² such that attainment may not be achieved

through practicable controls [and] can be justified by illusory promises of future waivers under the exceptional event, international transport, or rural transport programs.⁶³ Rather, the lawsuit argues that the CAA requires the EPA to set NAAQS at levels that are actually attainable. The lawsuit also questions whether the EPA had sufficient new evidence to warrant lowering the standard at all.⁶³

Explaining Arizona's motivation for filing the lawsuit, Attorney General Brnovich explained: "We all want clean air, however, reducing the ozone standards to 70 ppb will be nearly impossible for Arizona to attain. . . . The financial stakes for [Arizona] are enormous if we are unable to comply."⁶⁴

Conclusion

States across the country are just now starting to approach attainment of the 2008 standard of 75 ppb, but the EPA continues to move the goal post by mandating further reductions for ground-level ozone even though the benefit of such reductions is unsupported by the science. There comes a point of diminishing returns by

continuing to mandate ever-lower levels, even as current standards are barely achievable and the proven costs of attainment are so high.

The EPA's new ozone standard of 70 ppb will be virtually impossible for Arizona to meet due to Arizona's high levels of background, limited local

POLICY BRIEF

A Clear and Present Danger: How the EPA's New Ozone Regulations Threaten Arizona's Economy

sources, and unique geography. What's worse, the EPA has acted well outside its mandate in lowering the standard, which goes beyond an "adequate margin of safety."

The Clean Air Act needs to be updated to take our modern reality into consideration. As such, the CAA should be amended to allow states to discount for interstate and international transport, and it should require the EPA to consider cost and feasibility when setting NAAQS. In addition, Congress should reduce or even eliminate

funding for this program until such time as the 2015 standard is rolled back or reexamined.

Implementation of the current rule in Arizona is not reasonable, based in sound science or achievable. As such, at the very least, implementation of the rule should be set aside in Arizona and other states similarly situated, and those states should be given the opportunity to work meaningfully with the federal government to obtain a realistic plan other than what the current rule requires.

End Notes

1. "Study Links Springtime Ozone Increases Above Western North America to Emissions From Abroad," University of Colorado Boulder, Jan. 20, 2010.
2. "Nature, Chinese Pollution Offset U.S. West Ozone Gains," Jet Propulsion Laboratory, Aug. 10, 2015.
3. "Study Links Springtime Ozone Increases Above Western North America to Emissions From Abroad," *supra* note 1.
4. Ozone is found in Earth's stratosphere, where it protects us from ultraviolet radiation; in Earth's troposphere, where it acts as a greenhouse gas; and at ground level, where it is a component of smog. Ground-level ozone is produced when nitrogen oxides react with sunlight and volatile organic compounds. Sources of nitrogen oxides and volatile organic compounds are both man-made and naturally occurring. See "NASA: Background Ozone a Major Issue in U.S. West," Jet Propulsion Laboratory, California Institute of Technology, Sept. 29, 2015.
5. 42 U.S.C. Sec. 7409. When setting NAAQS, the EPA's mandate "is to identify the maximum airborne concentration of a pollutant that the public health can tolerate, decrease the concentration to provide an 'adequate' margin of safety, and set the standard at that level." *Whitman v. Am. Trucking Ass'n*, 531 U.S. 457, 465 (2001).
6. Table of Historical National Ambient Air Quality Standards, Environmental Protection Agency, <https://www.epa.gov/ozone-pollution/table-historical-ozone-national-ambient-air-quality-standards-naaqs>.
7. According to the EPA, aggregate national emissions of the six common air pollutants regulated by the CAA, including ozone, dropped an average of 69 percent from 1970 to 2014. "Progress Cleaning the Air and Improving People's Health," Environmental Protection Agency, <https://www.epa.gov/clean-air-act-overview/progress-cleaning-air-and-improving-peoples-health#pollution>.
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9. Ruth M. Doherty, "Ozone Pollution From Near and Far," *Nature Geoscience*, Aug. 10, 2015.
10. ADEQ Comments on Proposed Rule, March 17, 2015; National Ambient Air Quality Standards for Ozone, Proposed Rules, 79 Fed. Reg. 75234, 75330 (Dec. 17, 2014).
11. See National Ambient Air Quality Standards for Ozone, Final Rule, 80 Fed. Reg. 65292, 65303 (Oct. 26, 2015); E.S. Schelegle, et al., "6-6-hour inhalation of ozone concentrations from 60 to 87 parts per billion in healthy humans," *Am. J. Respir. Crit. Care Med.* 2009 Aug 1;180(3):265-72. (May 15, 2009).
12. 80 Fed. Reg. at 65318-21.
13. *Id.* at 65323-6, 65353.
14. See Responses to Significant Comments on the 2014 Proposed Rule on the National Ambient Air Quality Standards for Ozone, 79 Fed. Reg. 75234 (Dec. 17, 2014).
15. "Intermountain Western U.S." refers to the states of Arizona, Colorado, New Mexico, Nevada, Utah, and Wyoming, as well as the high-elevation portions of eastern California. See U.S. Environmental Protection Agency, "Implementation of the 2015 Primary Ozone NAAQS: Issues Associated with Background Ozone – White Paper for Discussion," at pg. 3 n. 10 (2015).
16. 80 Fed. Reg. at 65300.
17. *Id.* at 65297.
18. *Id.* at 65295.
19. Ozone Basics, Environmental Protection Agency, <https://www.epa.gov/ozone-pollution/ozone-basics#effects>.
20. World Health Organization, Health Aspects of Air Pollution – Answers to Follow-up Questions from CAFE, p. 16. (2004), <http://apps.who.int/iris/bitstream/10665/107556/1/EB2790.pdf>.
21. World Health Organization, Air Quality Guidelines: Global Update 2005, p. 322 (2005), http://www.euro.who.int/_data/assets/pdf_file/0005/78638/E90038.pdf?ua=1.
22. "NASA: Background Ozone a Major Issue in U.S. West," *supra* note 4; see also 80 Fed. Reg. at 65299.
23. See 80 Fed. Reg. at 65300.
24. Overview of Greenhouse Gases, Environmental Protection Agency, <https://www3.epa.gov/climatechange/ghgemissions/gases/n2o.html>; "NASA: Background Ozone a Major Issue in U.S. West," *supra* note 4.
25. Overview of Greenhouse Gases, *supra* note 24.
26. Volatile Organic Compounds' Impact on Indoor Air Quality, Environmental Protection Agency, <https://www.epa.gov/indoor-air-quality-iaq/volatile-organic-compounds-impact-indoor-air-quality>.
27. Laura Naranjo, "Volatile Trees: Forests fill the air with more than just a fresh scent," *EarthData*, Nov. 20, 2011, <https://earthdata.nasa.gov/user-resources/sensing-our-planet/volatile-trees>.
28. Arizona Department of Environmental Quality PowerPoint Presentation, AMC Environmental Issues Breakfast, April 12, 2016.
29. *Id.*
30. *Id.*
31. Arizona Department of Environmental Quality, Briefing Paper – EPA's New, Lower Ozone Standard, Oct. 2, 2015.
32. *Id.*
33. Brandon Loomis, "Arizona officials: Sun, old cars will make new EPA ozone limit difficult to meet," *Arizona Republic*, Oct. 2, 2015, available at <http://www.azcentral.com/story/news/arizona/politics/2015/10/02/arizona-sun-old-cars-make-new-epa-ozone-limit-difficult/73221680/>; see also Janet Peiley, "Consumers Hold Onto Cars Longer, Making Exhaust Dirtier," *Scientific American*, Dec. 12, 2014, available at <http://www.scientificamerican.com/article/consumers-hold-onto-cars-longer-making-exhaust-dirtier/>.
34. James F. McCarthy & Richard K. Lattanzio, Ozone Air Quality Standards: EPA's 2015 Revision at 18, *Congressional Research Service*, Jan. 25, 2016.
35. *Id.* at 5.
36. U.S. Environmental Protection Agency, "Implementation of the 2015 Primary Ozone NAAQS: Issues Associated with Background Ozone – White Paper for Discussion," at pg. 2 (2015).
37. A Natural Disadvantage: Punishing Arizona for Ozone Levels Beyond its Control at 40, The Center for Regulatory Solutions, Small Business Entrepreneurship Council, 2016, <http://centerforregulatorysolutions.org/wp-content/uploads/2016/02/A-Natural-Disadvantage.pdf>.
38. The National Ambient Air Quality Standards, Tools for Addressing Background Ozone at 3, Environmental Protection Agency, https://www.epa.gov/sites/production/files/2015-10/documents/20151001_background_ozone.pdf; see also Arizona Department of Environmental Quality PowerPoint Presentation, *supra* note 28.
39. The National Ambient Air Quality Standards, Tools for Addressing Background Ozone, *supra* note 38, at 3.
40. Arizona Department of Environmental Quality PowerPoint Presentation, *supra* note 28.

POLICY BRIEF

A Clear and Present Danger: How the EPA's New Ozone Regulations Threaten Arizona's Economy

41. 69 Fed. Reg. 32450 (June 10, 2004).
42. The National Ambient Air Quality Standards, *supra* note 38, at 2.
43. *Id.* at 3. The EPA has indicated that it is undertaking a review of the exceptional events designation process and expects to take final action to issue guidance and simplify the rule some time in 2016. It is unclear at this point what that guidance might look like and whether it will in fact be forthcoming this year.
44. ADEQ Comments on Proposed Rule, *supra* note 10, at 7.
45. "NASA: Background Ozone a Major Issue in U.S. West," *supra* note 4.
46. State Environmental Agency Perspectives on Background Ozone & Regulatory Relief at 11, Results of a Survey by the Association of Air Pollution Control Agencies, June 2015.
47. *Id.*
48. Arizona Department of Environmental Quality, Briefing Paper, *supra* note 31.
49. "NASA: Background Ozone a Major Issue in U.S. West," *supra* note 4.
50. The Clean Air Act has a "good neighbor" provision that purports to require states to prohibit emissions that will significantly contribute to a downwind state's nonattainment. See "Interstate Air Pollution Transport," Clean Air Markets, Environmental Protection Agency, <https://www.epa.gov/airmarkets/interstate-air-pollution-transport>. But the provision does not enable a downwind state to discount or exclude interstate transport from its levels. Because of this, and because there is no mechanism for enforcing the provision, it is of limited utility. For example Arizona receives significant interstate transport from California, and the CAA's "good neighbor" provision technically requires California to control it. But California is currently so behind in meeting the NAAQS that it is not even counted in EPA's latest studies.
51. Arizona Department of Environmental Quality PowerPoint Presentation, *supra* note 28; Letter from Eric C. Massey, Director of Air Quality, Arizona Department of Environmental Quality, to Environmental Protection Agency, March 17, 2015.
52. Arizona Department of Environmental Quality, Briefing Paper, *supra* note 31.
53. Arizona Department of Environmental Quality PowerPoint Presentation, *supra* note 28.
54. William V. Theobald, "A2 to Congress: We Can't Comply with the Ozone Rule," *Arizona Republic*, April 15, 2016, available at <http://www.azcentral.com/story/news/politics/arizona/2016/04/14/az-congress-we-cant-comply-epa-ozone-rule/83041208/>; Arizona Department of Environmental Quality PowerPoint Presentation, *supra* note 28.
55. Testimony of Misael Cabrera, Director, Arizona Department of Environmental Quality, Before the Subcommittee on Energy and Power, House Committee on Energy and Commerce, April 14, 2016, A Natural Disadvantage, *supra* note 37.
56. Testimony of Misael Cabrera, *supra* note 55.
57. Letter from William C. Allison V, Director, Air Pollution Control Division, Colorado Department of Public Health and Environment, to U.S. Environmental Protection Agency, March 17, 2015, available at <https://www.colorado.gov/pacific/sites/default/files/AP-PO-ColoradoCommentsOzoneNAAQS.pdf>.
58. 42 U.S.C. Sec. 7503; 40 C.F.R. 51.165(a)(3).
59. See Arizona Department of Environmental Quality PowerPoint Presentation, *supra* note 28.
60. State Environmental Agency Perspectives on Background Ozone & Regulatory Relief, *supra* note 46, at 12.
61. At the time of filing, Arizona was joined by Arkansas, New Mexico, North Dakota and Oklahoma. Since then, Kentucky, Utah, Louisiana, Texas and Wisconsin have all been granted permission to join.
62. *State of Arizona v. EPA*, No. 15-1392, Petitioners' Non-Binding Statement of Issues (Nov. 30, 2015, D.C. Cir.).
63. *Id.*
64. Press Release: Arizona Files Lawsuit Along with Four Other States Challenging EPA's New Ozone Standards Rule, Arizona Attorney General, Oct. 29, 2015.



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Douglas A. Ducey
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ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY



Misael Cabrera
Director

June 20, 2017

Senator John Barrasso, M.D.
Chairman
Committee on Environment and Public Works
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Senator Thomas R. Carper
Ranking Member
Committee on Environment and Public Works
United States Senate
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Re: Response to Additional Questions:
Senate Committee on Environment and Public Works
Subcommittee on Clean Air and Nuclear Safety
Hearing entitled, "Making Implementation of the National Ambient Air Quality
Standards for Ground-Level Ozone Attainable: Legislative Hearing on S. 263 and
S.452." May 23, 2017

Dear Senator Barrasso and Senator Carper:

It was a privilege to testify before your committee and thank you for the opportunity to provide additional clarity to my comments on May 23, 2017. I respectfully submit the response below to your additional questions:

Question 1: *States have already submitted to EPA recommendations for which counties should be designated nonattainment or attainment for the 2015 standard. This means communities in Arizona already can know if they are in an area that may have unhealthy air. If these bills before us today pass, how will you explain to your constituents who are currently living in these unhealthy air areas today that there will be over a decade before anyone starts addressing the pollution?*

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Response 1: Human health is a function of the entire natural and man-made ecosystem surrounding us: air quality, water quality, nutrition, shelter, and access to health care. There is a robust and well documented relationship between socioeconomic status and physical and mental health (enclosure). With this in mind, it is imperative to consider poverty-induced health impacts as well as air quality health impacts.

Yuma County has one of the highest unemployment rates in the country. In July 2016, the unemployment rate was 24%, the highest in the country. As of April 2017 it was down to 16%; still very high. That translates to between 15,700 and 22,011 people who struggle to find work, purchase healthcare, buy medicine, and secure healthy food.

In order to ensure a sustainable regulatory structure, we must find solutions at the nexus of the environment, our communities and the economy. For Yuma County, the ozone rule ignores two out of three and this is why:

- The Clean Air Act generally presumes that state regulation on local industry can improve air quality – that is not the case in Yuma;
- Cross-state transport, international transport, and vehicle emissions are the dominant factors in anthropogenic ozone in Yuma and the state and the local community are virtually powerless to make air quality improvements;
- Placing regulation on Yuma-area businesses punishes the victims of pollution by further constraining economic prospects and effectively increasing the likelihood of poverty-induced health impacts.

If Congress does not delay the implementation of the ozone standard or repeal it, areas like Yuma will experience increased or sustained poverty-induced health effects while receiving no air quality improvements.

Question 2: *Do you agree postponing the ozone standard by 10 years will remove the pressure for communities across the nation to treat this pollution with the urgency it deserves?*

Response 2: This question presumes that every community is able to address ozone through state regulation of local industry. Areas like Yuma are victims of upwind sources and vehicles; urgency alone will not address ozone in Yuma. Control of upwind cross-state and international sources and a newer vehicle fleet will. A newer vehicle fleet is a function of time and economic development.

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Question 3: *According to the American Lung Association's 2017 State of the Air Report, approximately 5,719 children and 14,162 adults¹ are at risk for asthma in Yuma County. Yuma County had 20 orange days and two red days for ozone pollution – earning it a grade of “F.” The 2015 ozone standard includes updates that ensure the public, particularly the most vulnerable individuals, has the best available information about whether the air they are breathing is safe. Delaying the ozone standards as proposed would not only delay improvements in air quality that can help prevent asthma attacks, respiratory ailments, and missed work/school days, but also prevent the public from having information about their air. Do you feel it is important to ensure the public has access to information that is based on the latest science, about how current air quality could impact them and their families’ health?*

Response 3: It is imperative that clear, accurate and actionable data is made available to those potentially impacted by National Ambient Air Quality Standards (NAAQS) exceedances. ADEQ is actively and aggressively engaged in developing tools to provide this information using methods that are most useful to the target audience. As an example, ADEQ recently developed and implemented a first-of-its-kind risk-based forecast for lead exceedances. In addition, we recently deployed an air quality mobile phone application for the Nogales area to enhance data accessibility for residents, allowing them to take actions to mitigate exposure. We are now in the process of developing a similar application for the Yuma area.

Having said that, the American Lung Association report referenced above also states that 15 out of 25 of the most polluted counties in the Nation are in California, and several of those counties are upwind of Yuma County. We have also placed an air quality monitor across the border in San Luis Rio Colorado, Mexico. Preliminary data suggests that ozone concentrations from upwind sources in Mexico are nearly equivalent to downwind concentrations in Yuma.

I agree that we should provide more air quality information to Yuma-area residents. I disagree with punishing the Yuma area with more local regulation that will do nothing to mitigate the true sources of the pollution: cross-state emissions, international emissions, and federally-regulated vehicle emissions.

Question 4: *According to EPA, a trip to the emergency room for asthma costs approximately \$440 on average. Given the nearly 20,000 individuals at risk for asthma in Yuma County, do you agree there are potentially significant economic costs, in addition to the quality of life and threats to life, from air pollution that can exacerbate asthma?*

Response 4: The EPA has published data articulating the economic and quality of life impacts of air pollution and should be relied upon to assess these costs. However, as you consider this issue, I believe it is important to remember that the root causes of asthma are still not well understood and there is no data to suggest that ozone is a root cause of asthma¹. Instead, many different sources such as high pollen counts, smoke from landfill fires in Mexico, and individual household exposures associated with smoking can exacerbate existing symptoms of asthma. With this in mind, more aggressive mitigation of sources that are well understood, locally generated and more easily and quickly mitigated must be aggressively pursued.

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Question 5: *You testified that mobile sources are a major contributor to Arizona's ozone pollution. How do states depend on the federal government to help clean up mobile sources? Could the federal government do more on this front?*

Response 5: Federal standards for vehicles were first phased in from 1994 to 1997. These standards, called the Tier 1 standards, covered passenger cars and light-duty trucks. The Maricopa metropolitan area experienced a reduction of 31,645 tons of Volatile Organic Compounds (VOCs) with a population growth of 36 percent. Between 1999 and 2003, national low emission vehicle standards were implemented. These standards covered vehicles below 6,000 pounds gross vehicle weight rating. Maricopa County's population grew another 36 percent between 1999 and 2008, but experienced a reduction of 657 tons of VOCs. Tier II emission standards were phased in from 2004 to 2009. These standards, along with passenger vehicles and light-duty trucks, also restricted the amount of sulfur allowed in gasoline and diesel fuel. Phase 1 Corporate Average Fuel Economy (CAFE) standards were implemented for model years 2011 through 2015. Additional emissions reductions gained under the new federal standards amount to 7,264 tons of VOCs from 2008 to 2015. NOx emission reductions for this same time period amount to 15,914 tons reduced. Phase 2 CAFE standards are scheduled to be implemented for model years 2018 and beyond. From 2015 to 2035 a reduction of 11,315 tons of VOCs and 27,156 tons of NOx annually is anticipated.

Only the federal government and California have the authorization to set emission standards for vehicles. Therefore, states (except California) are fully dependent on the federal government for engine emission and fuel standards, yet emissions from vehicles tend to be the highest contributor to air pollution, particularly the precursors to ozone (oxides of nitrogen and VOCs). The federal government could do more to fund and develop zero emission infrastructures, commuter mass transit systems, and other alternative commuter transportation systems in urban areas throughout the country.

Question 6: *From all that we are hearing from Administrator Scott Pruitt, the EPA under his watch is not interested in doing more to clean up mobile sources. Instead, it sounds like he is interested in rolling back regulations that reduce tailpipe emissions that are already on the books. If he is successful, what would be the impact on states like Arizona that depend on these emission reductions?*

Response 6: As previously stated, Phase 1 CAFE standards were implemented for model years 2011 through 2015. Additional emissions reductions gained by the new federal standards amount to 7,264 tons of VOCs from 2008 to 2015. NOx emission reductions for this same time period amount to 15,914 tons reduced. Phase 2 CAFE standards are scheduled to be implemented for model years 2018 and beyond. From 2015 to 2035 a reduction of 11,315 tons of VOCs and 27,156 tons of NOx annually is anticipated. Therefore, CAFE standards in combination with tier standards are key to reducing the precursors to ozone, sulfur dioxide, fine particulate matter, and carbon monoxide.

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Question 7: *During the questions and answers session, you mentioned that a ten-year delay would not help the people of Yuma because the ozone pollution will still be cross state lines. What are some policies that would help clean up the air to help the people of Yuma?*

Response 7: I recommend that the 75 ppb standard be maintained. Moving to a standard of 70 ppb provides little projected improvement in health or environmental outcomes, as articulated in the EPA's own report². Instead, I recommend the EPA and other federal agencies set policies that will lead to economic development. Stimulating development will result in transition to a newer and lower emissions vehicle fleet nationally, and will also reduce documented health risks associated with low income. And lastly, I recommend identifying and developing strategies to engage international sources in efforts to reduce ozone precursors.

Thank you again for the opportunity to provide this response. I remain available to provide any additional input you find necessary.

Sincerely,



Misael Cabrera, P.E.
Director

Enclosure (Studies Showing the Impact of Poverty on Children's Health)

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Studies Showing the Impact of Poverty on Children's Health

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"Although it has long been thought that the prevalence of asthma is high among children living in poor urban neighborhoods in the United States, the prevalence of asthma in these neighborhoods throughout the United States has, surprisingly, not been described. Moreover, the relative contribution of race/ethnicity and household poverty versus other contextual neighborhood-level factors to asthma disparities related to the inner city remains unclear. Here we show that although some inner-city areas have high rates of asthma, particularly in the Midwest and Northeast, other nonurban poor areas have equal or higher asthma prevalence. Overall, black race, Puerto Rican ethnicity, and poverty rather than residence in an urban area *per se* are the major risk factors for prevalent asthma. These findings suggest that the concept of inner-city asthma might need to be refined."

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Senator CAPITO. Thank you.
Mr. HAKIMI.

**STATEMENT OF AHRON HAKIMI, EXECUTIVE DIRECTOR, KERN
COUNCIL OF GOVERNMENTS**

Mr. HAKIMI. Madam Chairman Capito, Ranking Member Whitehouse and esteemed Senators, and fellow veterans, my name is Ahron Hakimi. I am the Executive Director for Kern Council of Governments, a metropolitan planning organization in California's San Joaquin Valley.

As a colonel in the Army Reserve's Logistics Corp, it is my honor and privilege to sit before you today offering testimony and answering your questions.

For more than 30 years, I have worked as an engineer and manager in the transportation industry, including 25 years with the California Department of Transportation and 31 years in the Army Reserve.

To begin, thank you for the opportunity to consider the Federal mandates under the Clean Air Act and potential improvements that may be warranted. What follows is an appended version of my full testimony which have provided to the committee staff.

The Joaquin Valley encompasses eight counties and 25,000 square miles, an area larger than 20 percent of the 50 States with a population greater than half the States at 4.1 million and poverty levels that meet or exceed the Appalachian region.

Due to geography, topography and weather conditions that trap air pollutants, we continue to exceed the latest Federal ambient air quality standards for ozone and particulate matter of PM 2.5. This is even after imposing some of the toughest air regulations in the Nation and having reduced emissions by over 80 percent, costing Valley businesses roughly \$40 billion.

Since the 1970's, EPA has established numerous ambient air quality standards for individual pollutants. The San Joaquin Valley air basin is subject to no less than four standards each for ozone and PM 2.5. Each of these standards requires a separate attainment plan that leads to multiple, overlapping requirements and deadlines.

The pollution that industry, agricultural operations, cars and trucks release is at historic loads. Our residents' exposure to high smog levels has been reduced by over 90 percent. Unfortunately, after all this investment and sacrifice, we have reached a point where we cannot attain the Federal standards even if we eliminated all Valley businesses, all agricultural operations or all the trucks traveling through our valley.

Federal law specifically prohibits local jurisdictions from imposing tailpipe emission standards on mobile sources. The San Joaquin Valley cannot attain the Federal standards without significant emission reductions from these sources.

Trans-boundary transport is another source over which we have no local control. It is delivered onshore in the spring and summer from prevailing tropospheric winds across the Pacific Ocean all the way from Asia.

We believe that common sense and fairness dictate that Federal law include an overriding provision to prohibit sanctions on local

regions and States where the inability to attain Federal standards is due to pollution from outside their regulatory authority.

Right now, the Valley is in nonattainment for three ozone standards and three PM 2.5 standards. Each of these requires a separate air quality plan which leads to multiple requirements and deadlines.

There are 51 different air quality tests each of the eight transportation planning agencies must pass. As a Valley, we could deliver more than \$40 billion in transportation projects over the next two decades if we are not tripped up through a labyrinth of air quality tests requiring massive coordination among numerous regional, State and Federal agencies.

These projects put people to work, move agricultural goods to market, move freight from northern to southern California, and help our citizens be mobile.

In closing, we support a strong Clean Air Act with commonsense revisions that actually result in improved air quality. We need a way to significantly reduce the almost biennial updates with 51 tests that place our transportation funding constantly at risk.

Commonsense amendments to the Clean Air Act will benefit the San Joaquin Valley and the Nation as a whole.

Thank you. It has been my honor and privilege to address your subcommittee this afternoon. I will be happy to answer any questions I can.

[The prepared statement of Mr. Hakimi follows:]

**Kern Council of Governments
Executive Director Ahron Hakimi**

Testimony

**Before the U.S. Senate
Committee on Environment and Public Works
Subcommittee on Clean Air and Nuclear Safety
Tuesday, May 23, 2017**

Madam Chairman Capito, Ranking Member Whitehouse and esteemed Senators, my name is Ahron Hakimi and I am the Executive Director for Kern Council of Governments, a metropolitan planning organization in California's San Joaquin Valley.

I am also an active colonel in the U.S. Army Reserve's Logistics Corp, so it is my honor and privilege to sit before you today offering testimony and answering your questions. For more than 30 years, I have worked as an engineer and manager in the transportation industry, including 25 years with the California Department of Transportation and 31 years in the Army Reserve.

To begin, thanks to your subcommittee for providing an opportunity to thoughtfully consider the federal mandates under the Clean Air Act and potential improvements that may be warranted. Given the tremendous air quality challenges that we face in the San Joaquin Valley and the wealth of real-life experience that we have with conducting air quality conformity studies for capital transportation projects, I firmly believe we can be helpful to this process.

Allow me first to paint you a picture of my part of the nation. The San Joaquin Valley, at 25,000 square miles, has an area larger than 20 percent of the 50 states, with a population greater than half the states at 4.1 million. Unfortunately, our region suffers from chronic double digit unemployment and higher rates of poverty than the Appalachian region.

In fact, CalEnviroScreen – a modeling tool prepared by the California Environmental Protection Agency to identify communities that are disproportionately burdened – places 20 out of California's top 30 most disadvantaged communities in the San Joaquin Valley.

As an added burden, due to the Valley's geography, topography and meteorological conditions that trap air pollutants, the Valley continues to exceed the latest federal ambient air quality standards for ozone and particulate matter (PM) 2.5 even after imposing some of the toughest air regulations in the nation and having reduced emissions by over 80 percent from Valley businesses.

Since the 1970s, EPA has established numerous ambient air quality standards for individual pollutants. We have now reached a point where various regions throughout

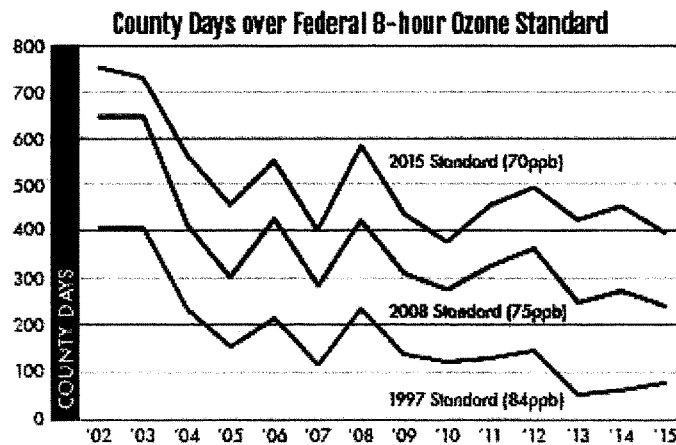
the nation are subject to multiple iterations of standards for a single pollutant. The San Joaquin Valley air basin is subject to four standards for ozone and four standards for PM_{2.5}. Each of these standards requires a separate attainment plan that leads to multiple overlapping requirements and deadlines.

For instance, our Air Pollution Control District is on the verge of promulgating no less than 10 active State Implementation Plans. This results in a great deal of confusion, costly bureaucracy and duplicative regulations, all without corresponding public health benefits. Both S. 263, the Ozone Standards Implementation Act and S. 452, the ORDEAL Act, represent a step in the right direction to address this problem by providing more time between each review, from five years to 10 years, making it easier and more cost-effective for states to comply.

Through decades of implementing effective air quality strategies, air pollution from San Joaquin Valley businesses has been reduced by more than 80 percent through an investment of more than \$40 billion by regulated sources.

The pollution that industrial facilities, agricultural operations, cars and trucks release is at historical lows. San Joaquin Valley residents' exposure to high smog levels has been reduced by over 90 percent. Unfortunately, after all this investment and sacrifice, we have reached a point where we cannot attain the federal standards even if we eliminated all Valley businesses, agricultural operations, or trucks traveling through the San Joaquin Valley. Figure 1 below demonstrates the total number of exceedance days among all eight Valley Counties by ozone standard.

Figure 1



Federal law specifically preempts local jurisdictions from imposing tailpipe emissions standards on mobile sources. The San Joaquin Valley cannot attain the federal standards without significant reduction in emissions from these federal sources.

Another pollution source over which we have no local jurisdiction or control is transboundary transport. Observational and modeling studies have shown that international ozone precursor emissions can lead to ozone formation within the atmospheric boundary layer over far-upwind areas, and, under favorable conditions, can be transported within the mid-and upper-troposphere, contributing to local ozone concentrations.

During spring and summer in California, transboundary ozone is delivered onshore by prevailing tropospheric wind currents flowing across the Pacific Ocean. Some of this comes from natural sources, but an increasing proportion is due to a dramatic increase in fossil fuel combustion in Asia over the past two decades.

Through extensive research and air monitoring, the Air Pollution Control District has established that concentrations of transboundary ozone measured on the California coast in certain locations are highly representative of concentrations found at the same time in transpacific air masses flowing through the gap in the coast range between Pt. Reyes and the Carquinez Strait.

National Oceanic and Atmospheric Administration researchers have identified this area as the primary entryway for transboundary ozone affecting the San Joaquin Valley. UC Davis researchers have concluded that this same pathway was followed by flows of transboundary ozone into the Valley that may have led to our ozone standards violations. Based on this research, we believe that the transboundary ozone impact in the Valley is significant given the stringency of the latest air quality standards and the small degree by which the Valley is out of compliance.

We also believe that common sense and fairness dictate that federal law include an overriding provision to prohibit sanctions on local regions and states where the inability to attain federal standards is due to pollution from outside their regulatory authority.

Right now, we are in non-attainment for three ozone standards and three PM2.5 standards. Each of these requires a separate air quality plan, which leads to multiple requirements and deadlines. There are 51 different air quality tests each of the eight transportation planning agencies must pass.

Valleywide, that's 408 tests before we spend one dollar of federal transportation funding. Eighty of those tests are for ozone alone. One test failure by one MPO can result in a loss of funding for all eight, and we are set to do this on a schedule that averages about once every two to three years.

Figures 2 and 3 below better illustrate the additional emissions reductions the San Joaquin Valley would be forced to make to meet existing standards.

Figure 2 Additional Emissions Reductions Required for Attainment After Direct PM 2.5 Reductions (2019 Deadline for 2006 24-hr PM 2.5 Standard)

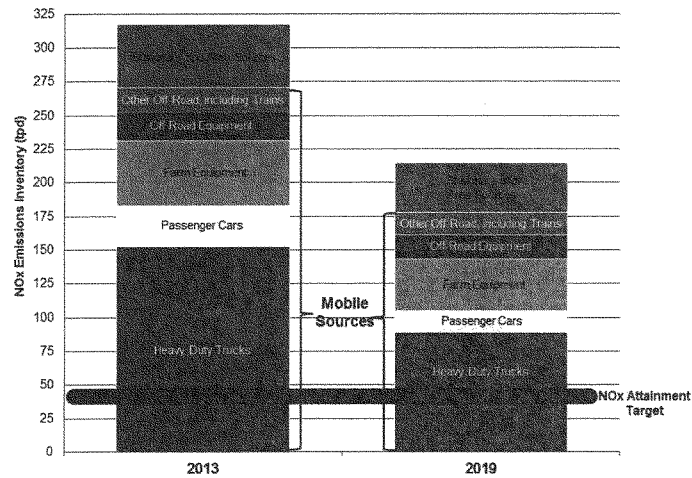
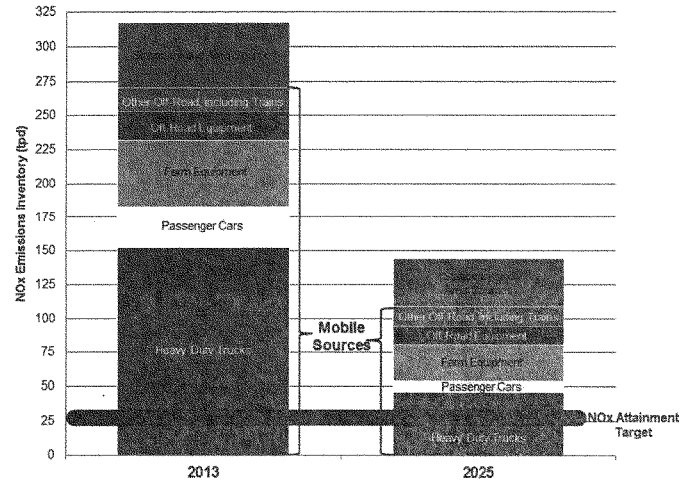


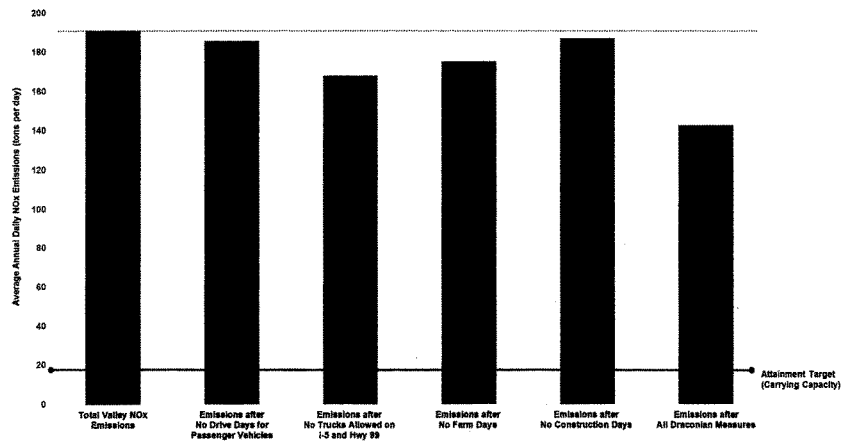
Figure 3 Additional Emissions Reductions Required for Attainment After Direct PM 2.5 Reductions (2025 Deadline for 2012 Annual PM 2.5 Standard)



To provide a greater context for the challenges we face, Figure 4 below illustrates that the San Joaquin Valley will not be able to attain the PM2.5 standard even with the following measures for 155 days per year:

1. No drive days for passenger vehicles.
2. Close Interstate 5 and Highway 99 to heavy-duty truck traffic.
3. No farming days.
4. No construction days.

Figure 4 NOx Emissions after Imposition of Draconian Measures for 155 days per year in 2021



As a Valley, we could deliver more than \$40 billion in transportation projects over the next two decades if we are not tripped up through a labyrinth of air quality tests requiring massive coordination among numerous regional, state and federal agencies. These projects put people to work, move agricultural goods to market, move freight from Northern to Southern California, and increase our citizens' mobility.

Such potentially draconian regulations have contributed to driving major employers, such as Baker/Hughes, out of the Valley and is causing other major companies to think twice before expanding. Independent trucking companies are the hardest hit with difficulty keeping up with ever-changing regulations driven by ever changing standards that only the largest trucking companies can afford.¹

¹ Anderson, Central Valley Business Journal, Truck Drivers in Short Supply, 2014, <https://cvbj.biz/2014/11/06/truck-drivers-short-supply/>

Commodity transportation in our region is higher, which impacts production. Regulations are forcing expensive farming practices that cost more than \$2 billion per year². All of these issues create an unfair economic burden that limits our ability to implement expensive new technologies to clean the air, except closing down businesses for some of the poorest communities in the nation.

We do not advocate for changes in the Clean Air Act that would roll back existing rules and regulations that have helped improve air quality and quality of life for our residents. However, we do not believe that Congress, in passing the Clean Air Act more than 40 years ago, envisioned a scenario where a region like ours that has imposed some of the toughest regulations on stationary sources would be in danger of suffering from devastating federal sanctions. We face these dire consequences despite having already done all of the following:

- ✓ Toughest air regulations on stationary sources (600 rules since 1992)
- ✓ Toughest air regulations on farms and dairies
- ✓ Tough air regulations on what residents can do within the confines of their homes (residential water heaters, residential HVAC furnaces, charbroilers, ban on fireplace installation and use)
- ✓ \$40 billion spent by businesses on clean air
- ✓ Over \$1.6 billion dollars of public/private investment on incentive-based measures reducing over 130,000 tons of emissions
- ✓ Toughest regulations on cars and trucks
- ✓ Toughest regulations on consumer products
- ✓ Reduced emissions by 80 percent

While we acknowledge and appreciate the degree to which ERA and the California Air Resources Board have attempted to balance competing interests, to date, neither EPA nor CARB have proposed any new measures that will provide further reductions in the San Joaquin Valley in the short timeframe (2019 to 2025) mandated under the Clean Air Act in order to avoid federal sanctions.

It is unfair that under the current law, local jurisdictions will be subject to devastating federal sanctions even though failure to attain the standards is due to emissions from sources under federal jurisdiction. These federal sanctions include:

- De facto ban on new and expanding businesses (2:1 offset requirement)
- Loss of federal highway funds (\$2.5 billion and numerous jobs lost in the San Joaquin Valley)
- Federal takeover and loss of local control
- Expensive federal nonattainment penalties

² Hurley, Noel, An Estimation of the Regulatory Cost on California Agricultural Producers, 2006
http://www.waterboards.ca.gov/water_issues/programs/rap/docs/ercap_jul06.pdf

Already, the costs incurred for air quality studies and mitigation on capital transportation expansion projects have skyrocketed, adding months, if not years to the environmental process. For the Centennial Corridor project in Bakersfield alone, we have spent \$2.8 million on air quality studies and mitigation to meet air quality conformity rules whose thresholds routinely change.

Beyond these excessive costs are concerns that our extensive modeling efforts may not be providing the right information.

According to the California Department of Transportation Division office for the San Joaquin Valley, Caltrans has been budgeting an additional six to eight months to accommodate modeling for the quantitative analyses required under air quality conformity regulations.

One of the biggest concerns Caltrans mentions is that the modeling tools being used today are not appropriate for roadway emissions measurements. Representatives with the software firm that developed tools like AERMOD have said the model was intended for stationary but not mobile sources. We are aware of no way to calibrate the model to ensure results are accurate.

For example, when Caltrans models noise, staff takes field measurements to ensure the model is representing what is actually happening. But when using air quality modeling software, Caltrans must assume the results are accurate based on emission and weather factors pulled from data that may or may not represent the project area.

Once the results are in, it must be checked to ensure it meets the thresholds set by EPA. The thresholds for particulate matter have been lowered over the years due to studies that show the concentrations may be a health risk at ever-decreasing levels.

FHWA has seriously questioned some of these health risks and assumptions. For example, one assumption is that the population will be exposed to particulate matter 24 hours, seven days a week for 70 years. This seems like an unnecessarily conservative approach and quite frankly, unreasonable.

Again, when looking at the big picture, the results of the modeling and the thresholds that are being set, there appears to be abundant room for error and potentially overstating the impacts of particulate matter.

In closing, we support a strong Clean Air Act with common sense revisions that actually result in improved air quality. We need a way to significantly reduce the almost biennial updates, with 51 tests that place our transportation funding at risk constantly. Common sense amendments to the Clean Air Act will benefit the San Joaquin Valley and the nation as a whole.

Thank you. It has been my honor and privilege to address your subcommittee this afternoon. I am happy to answer any questions that I can.

Senate Committee on Environment & Public Works
Subcommittee on Clean Air & Nuclear Safety
Hearing entitled, "Making Implementation of the National Ambient Air Quality Standards
for Ground-Level Ozone Attainable: Legislative Hearing on S. 263 and S.452."
May 23, 2017
Questions for Mr. Ahron Hakimi

Ranking Member Carper:

1. States have already submitted to EPA recommendations for which counties should be designated nonattainment or attainment for the 2015 standard. This means communities in California already can know if they are in an area that may have unhealthy air. If these bills before us today pass, how will you explain to your constituents who are currently living in these unhealthy air areas today that there will be over a decade before anyone starts addressing the pollution?

ANSWER: San Joaquin Valley (SVJ) residents will not have to wait a decade before air pollution is addressed. Since the 1970s, EPA has established numerous ambient air quality standards for individual pollutants. We have now reached a point where the SVJ is subject to multiple iterations of standards for a single pollutant. The SVJ air basin is subject to four standards for ozone and four standards for PM_{2.5}. Each of these standards requires a separate attainment plan that leads to multiple overlapping requirements and deadlines.

Through decades of implementing effective air quality strategies, air pollution from San Joaquin Valley businesses has been reduced by more than 80 percent through an investment of more than \$40 billion by regulated sources.

The pollution that industrial facilities, agricultural operations, cars and trucks release is at historical lows. San Joaquin Valley residents' exposure to high smog levels has been reduced by over 90 percent. Unfortunately, after all this investment and sacrifice, we have reached a point where we cannot attain the federal standards even if we eliminated all Valley businesses, agricultural operations, or trucks traveling through the San Joaquin Valley. Figure 1 below demonstrates the total number of exceedance days among all eight Valley Counties by ozone standard.

2. According to the American Lung Association's 2017 State of the Air Report, Bakersfield ranks second in the nation for most polluted city for ozone. Approximately 18,417 children and 47,777 adults are at risk for asthma, 36,297 individuals are at risk for cardiovascular disease, and 88,992 individuals are over the age of 65. Kern County had 232 orange days, 45 red days, and 1 purple day for ozone pollution – earning it a grade of "F." The 2015 ozone standard includes updates that ensure the public, particularly the most vulnerable individuals, has the best available information about whether the air they are breathing is safe. Delaying the ozone standards as proposed would not only delay improvements in air quality that can help prevent asthma attacks, respiratory ailments, and missed work/school days, but also prevent the public from having information about their air. Do you feel it is important to

ensure the public has access to information that is based on the latest science, about how current air quality could impact their health?

ANSWER: SJV residents have consistently been living under air quality standards informed by the latest science since the 1970s. Transportation advocates in the Kern County and the SJV are not requesting changes in the Clean Air Act that would roll back existing rules and regulations that have helped improve air quality and quality of life for our residents. However, we do not believe that Congress, in passing the Clean Air Act more than 40 years ago, envisioned a scenario where a region like ours that has imposed some of the toughest regulations on stationary sources would be in danger of suffering from devastating federal sanctions. We face these dire consequences despite having already done all of the following:

- ✓ Toughest air regulations on stationary sources (600 rules since 1992)
- ✓ Toughest air regulations on farms and dairies
- ✓ Tough air regulations on what residents can do within the confines of their homes (residential water heaters, residential HVAC furnaces, charbroilers, ban on fireplace installation and use)
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While we acknowledge and appreciate the degree to which ERA and the California Air Resources Board have attempted to balance competing interests, to date, neither EPA nor CARB have proposed any new measures that will provide further reductions in the San Joaquin Valley in the short timeframe (2019 to 2025) mandated under the Clean Air Act in order to avoid federal sanctions.

3. Do you agree postponing the ozone standard by 10 years will remove the pressure for communities across the nation to treat this pollution with the urgency it deserves?

ANSWER: The SJV cannot hope to achieve a new standard when it continues struggling to meet existing standards. The difference is in the greater potential for federal sanctions that would freeze transportation funding despite Herculean efforts to address existing requirements. Either way, SJV residents suffer.

4. Many areas of California have been in nonattainment for a long time, yet businesses continue to operate, grow, and locate in the state. California has experienced tremendous economic growth since the enactment of the Clean Air Act in 1970. There are economic costs to pollution like smog, however, that are being borne by Californians. A trip to the emergency room for asthma costs approximately \$440 on average, according to the EPA. Given the 66,000 individuals at risk for asthma in Bakersfield, do you agree there are potentially significant economic costs, in addition to the quality of life and threats to life, from air pollution that can exacerbate asthma?

ANSWER: Through decades of implementing effective air quality strategies, air pollution from San Joaquin Valley businesses has been reduced by more than 80 percent through an investment of more than \$40 billion by regulated sources.

The pollution that industrial facilities, agricultural operations, cars and trucks release is at historical lows. San Joaquin Valley residents' exposure to high smog levels has been reduced by over 90 percent.

We do not advocate for changes in the Clean Air Act that would roll back existing rules and regulations that have helped improve air quality and quality of life for our residents. However, we do not believe that Congress, in passing the Clean Air Act more than 40 years ago, envisioned a scenario where a region like ours that has imposed some of the toughest regulations on stationary sources would be in danger of suffering from devastating federal sanctions. We face these dire consequences despite having already done all of the following:

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While we acknowledge and appreciate the degree to which EPA and the California Air Resources Board have attempted to balance competing interests, to date, neither EPA nor CARB have proposed any new measures that will provide further reductions in the San Joaquin Valley in the short timeframe (2019 to 2025) mandated under the Clean Air Act in order to avoid federal sanctions.

5. How do states and local governments depend on the federal government to help clean up mobile sources? Could the federal government do more on this front?

ANSWER: Federal law specifically preempts local jurisdictions from imposing tailpipe emissions standards on mobile sources. The San Joaquin Valley cannot attain the federal standards without significant reduction in emissions from these federal sources.

Another pollution source over which we have no local jurisdiction or control is transboundary transport. Observational and modeling studies have shown that international ozone precursor emissions can lead to ozone formation within the atmospheric boundary layer over far-upwind areas, and, under favorable conditions, can be transported within the mid-and upper-troposphere, contributing to local ozone concentrations.

During spring and summer in California, transboundary ozone is delivered onshore by prevailing tropospheric wind currents flowing across the Pacific Ocean. Some of this comes from natural sources, but an increasing proportion is due to a dramatic increase in fossil fuel combustion in Asia over the past two decades.

Through extensive research and air monitoring, the Air Pollution Control District has established that concentrations of transboundary ozone measured on the California coast in certain locations are highly representative of concentrations found at the same time in transpacific air masses flowing through the gap in the coast range between Point Reyes and the Carquinez Strait.

National Oceanic and Atmospheric Administration researchers have identified this area as the primary entryway for transboundary ozone affecting the San Joaquin Valley. UC Davis researchers have concluded that this same pathway was followed by flows of transboundary ozone into the Valley that may have led to our ozone standards violations. Based on this research, we believe that the transboundary ozone impact in the Valley is significant given the stringency of the latest air quality standards and the small degree by which the Valley is out of compliance.

We also believe that common sense and fairness dictate that federal law include an overriding provision to prohibit sanctions on local regions and states where the inability to attain federal standards is due to pollution from outside their regulatory authority.

A greater emphasis on localized monitoring would allow control efforts to be more focused to affect a solution. Google maps have performed a pilot project monitor air quality using their mobile vehicles. A recent study in the area around the disadvantaged community of Arvin should great variations in air quality at the local level.

6. From all that we are hearing from Administrator Scott Pruitt, the EPA under his watch is not interested in doing more to clean up mobile sources. Instead, it sounds like he is interested in rolling back regulations that reduce tailpipe emissions that are already on the books. If he is successful, what would be the impact on states like California that depend on these emission reductions?

ANSWER: California leads the nation in environmental protection on all fronts, from its own Clean Air and Clean Water acts to the California Environmental Quality Act. California does not wait on the federal government to protect its environmental resources or environmental effects on the health of its citizens. With the only market-based, cap-and-trade emissions structure in the nation, California continues – well beyond federal requirements – to attempt reducing greenhouse gas emissions (GHG) through a strategy of reducing vehicle miles traveled (VMT). Despite these regulatory efforts, VMT continues to increase, even as GHG emissions continue to be reduced (<http://www.latimes.com/politics/essential/la-pol-ca-essential-politics-updates-california-emissions-keep-1496860837-htmlstory.html>).

Senator CAPITO. Thank you very much. Thank you for your service to our Country in the military.

Mr. ZERINGUE.

**STATEMENT OF KYLE ZERINGUE, SENIOR VICE PRESIDENT,
BUSINESS DEVELOPMENT, BATON ROUGE AREA CHAMBER**

Mr. ZERINGUE. Thank you, Chairman, Ranking Member and members of this subcommittee. It is an honor to testify before you today.

My name is Kyle Zeringue, Senior Vice President of Business Development for the Baton Rouge Area Chamber, BRAC. BRAC is the regional economic development organization over a nine-parish region in southern Louisiana, representing over 825,000 residents.

I stand before you today to express BRAC's support of the proposed Ozone Standards Implementation Act of 2017 and the OR-DEAL Act of 2017 based on three points.

One, the unimplemented standards have already cost our region tens of thousands of jobs and billions of dollars in capital investment and salaries. Second, the standards would impose hardships to many of the top performing metropolitan economies due to non-attainment status. Third, the vast majority of U.S. counties are on track to attain the EPA's 2015 standards by 2025 with practices already in place.

Foremost, BRAC fully supports cleaner air and environmental stewardship. For over 12 years, BRAC has played an active role in the Baton Rouge Clean Air Coalition. Thanks in large part to the Coalition's efforts in April 2014, the Baton Rouge Area attained the 2008 ozone standard of 75 ppb.

Since then, the region has continued to decrease ground-level ozone and improve air quality and health for its residents. Our commitment and success is proven by the EPA's re-designation of the Baton Rouge Area to attainment for the 2008 standard in January 2016.

Despite our efforts, the unimplemented 2015 standards have caused our region incalculable economic loss. Since 2014, BRAC has worked with a number of manufacturers seeking to make significant investments in the region.

When the EPA first proposed lowering the ozone NOx in November 2014, numerous companies indicated that the proposed new standards, as they created market uncertainty and limited available emission reduction credits, influenced them to proceed elsewhere or to cancel their projects altogether.

To quantify, the unimplemented standards have cost our region at least 3,570 direct jobs, \$439.5 million in annual payroll and more than \$33.9 billion in capital investment. Economic modeling completed by BRAC shows these projects would have brought in significant, indirect value as well, making the total loss of opportunity exceed 18,000 total jobs, \$1.2 billion in payroll and \$46.2 billion in capital investment. This does not include opportunity cost.

Should these bills fail to pass, the Baton Rouge area, in all likelihood, will once again be thrust into nonattainment status, thus eliminated from consideration on additional major investments.

While I represent the Baton Rouge area, our region would not be alone in suffering economically. If the EPA were to implement the

lower ozone standard at 70 ppb at the normal schedule, eight of the Nation's top 15 metropolitan area economies, as ranked by the Brookings Institution, would be relegated to nonattainment status.

The cost associated with nonattainment creates significant risk to new investments and places additional burden on existing companies. The unrealistic schedule to implement the standards will continue to stifle growth and development in the top U.S. metro areas.

While the EPA enacted stricter ozone standards 7 years ago, the agency effectively suspended implementation of their standards from 2010 to 2012. Because of this delay, States are behind in putting the current standards into effect, meaning we have yet to see the full impact of the last standard decrease.

In fact, the EPA provided a map in a December 2014 webinar concerning the standards which showed that all but 14 U.S. counties will meet the new standard by 2025 with the rules and programs being successfully executed.

Implementing this standard now when the EPA has itself identified that 241 counties would be in nonattainment is needlessly punitive and puts the U.S. economic health at risk.

Madam Chairman, Ranking Member and members of the subcommittee, the Baton Rouge area's commitment to clean air proves that economic development and environmental stewardship does not have to be mutually exclusive.

Policies that have significant adverse effect on local economies, as the impending NOx implementation schedule does, should be enacted with broader consideration. Therefore, BRAC strongly recommends these bills, which extend implementation to a realistically achievable timeframe, be passed to prevent additional loss of existing and future economic opportunity for the Baton Rouge area, as we as other top metro economies in the U.S. and to provide local and regional economies with a realistic timeline for attainment with the 2015 standards utilizing the successful practices already in place.

This concludes my prepared statement. I thank you for your time. I will be pleased to answer any questions.

[The prepared statement of Mr. Zeringue follows:]

May 23, 2017

Kyle Zeringue
Senior Vice President
Baton Rouge Area Chamber

Thank you, Chairman, ranking member and members of this subcommittee - I appreciate the opportunity and am honored to testify before the Senate Committee on Environment and Public Works. My name is Kyle Zeringue and I serve as the Senior Vice President of Business Development for the Baton Rouge Area Chamber (BRAC). The Baton Rouge Area Chamber is the economic development and public policy-driven organization for a nine-parish (county) region in southern Louisiana, that represents over 825,000 residents. On behalf of the Baton Rouge Area and its stakeholders, I stand before you today to express our support regarding the proposed Ozone Standards Implementation Act of 2017 and the ORDEAL Act of 2017.

The Baton Rouge Area Chamber supports extending the implementation of the 70 parts per billion (ppb) standard in regards to ambient air quality, while it continues to implement the 2008 standard of seventy-five ppb until 2025. Our support for the above-mentioned bills is based on three main points:

- 1) The unimplemented standards have already cost our region tens of thousands of jobs and billions of dollars in capital investment and salaries;**
- 2) The standards would drive eight of the nation's fifteen top-performing metropolitan economies into non-attainment and all the hardships that status entails; and**
- 3) The vast majority of US counties are on track to attain the EPA's 2015 standards by 2025 with practices already in place**

BRAC believes in and stands for cleaner air and environmental stewardship. For more than twelve years, BRAC has supported and hosted the Baton Rouge Clean Air Coalition. On April 4, 2014, thanks in large part to the Coalition's efforts, the Louisiana Department of Environmental Quality announced that the Baton Rouge Area attained the 2008 eight-hour ozone standard of 75 ppb. The region has decreased ground-level ozone and continues to improve air quality and human health for its residents. Our commitment and success is proven through our reduction of the Baton Rouge Area's ppb number to 72, down from over 110 ppb in 1983 and over 80 ppb as recently as 2011. On January 27, 2016, the EPA approved the State of Louisiana's request to re-designate the 5-Parish Baton Rouge Area to attainment for the 2008 standard.

Yet while our region has worked tirelessly with all stakeholders to demonstrate its commitment to improving air quality, the unimplemented 2015 standards have already caused incalculable economic loss. Since 2014, BRAC has worked with a number of manufacturers seeking to make significant investments in the region. This includes at least two companies that executed purchase agreements on large industrial sites with intent to develop multi-billion dollar projects creating over 800 jobs. When the EPA first proposed lowering the ozone NAAQS in November of 2014, six companies indicated that the proposed new standards - as well as the market uncertainty created and the limited availability of emission reduction credits - influenced them proceed elsewhere or cancel their project altogether.

To clarify the economic impact quantitatively, the unimplemented standards have cost the region at least 3,570 direct jobs, and caused more than \$33.9 billion in capital investment to be completed in other regions, states and countries or put on hold until a more favorable regulatory climate is established. New payroll created from the projects themselves would have totaled over \$439.5 million annually. Further economic modeling completed by the Baton Rouge Area Chamber on just the projects we have direct knowledge and experience with, indicates that these projects would have had a significant indirect and induced impact on the local economy, making the total loss of opportunity for the region **18,008 total jobs, \$1.2 billion in payroll, and \$46.2 billion in capital investment and construction regionally, not including missed opportunity cost.** Beyond the quantifiable loss, the uncertainty of arriving at the 2015 standard of 70 ppb, and then the realization that Baton Rouge would have extreme difficulty meeting the standard on such an onerous schedule, has had an enormous negative impact on the region's ability to grow economically.

Should these bills fail to pass, the Baton Rouge Area in all likelihood will once again be thrust into non-attainment status. If designated as non-attainment, 5-Parishes in the Baton Rouge Area will be eliminated from consideration on major investments including but not limited to existing business expansions and upgrades and multi-billion dollar foreign direct investment opportunities.

And while I am here to speak to you on behalf of the Greater Baton Rouge Area, our region would not be alone in suffering economically, should the standards be implemented at the normal schedule. If the EPA were to implement the lower ozone standard at 70 ppb, **eight of the nation's top fifteen metropolitan area economies, as ranked by the Brookings Institution, would be relegated to non-attainment status.** The increased compliance costs associated with non-attainment creates immeasurable risk and therefore cost to companies seeking to enter these markets, and places additional burden on economic driver companies within these markets to enhance and expand existing operations. The un-realistic schedule to implement the standards will continue stifle the growth and development taking place in the metropolitan areas that have been the most successful in helping our country grow. Because of this, BRAC's efforts in opposing the revision of the standards, and now their implementation schedule, have been backed by economic development organizations across the country, including those from other high-performing metro areas such as Greater Houston Partnership, Grand Rapids Area Chamber of Commerce, and the Charleston Metro Chamber of Commerce.

As stated, the Baton Rouge Area and its stakeholders have successfully demonstrated their commitment to clean air proving that economic development and environmental stewardship does not have to be mutually exclusive. Our efforts to work toward earning attainment status under the 2008 standard is a strong example of this. Policies that have a significant adverse effect on local economies, as the impending NAAQS implementation schedule does, should be enacted with broader consideration, and only when a full economic impact assessment has been completed. Unfortunately, while the rule at hand has a laudable goal, its immediate implementation timetable is patently unnecessary.

While the EPA enacted stricter ozone standards seven years ago, the Agency effectively suspended implementation of those standards from 2010 to 2012, as it unsuccessfully pursued reconsideration. Because of this delay, states are considerably behind in putting the current standards into effect, meaning that we have yet to see the full impact of the last standard decrease, which is still being implemented. In fact, the EPA provided a map in a December 2014 webinar concerning the standards,

which showed that all but 14 US counties will meet the new standards by 2025 with the rules and programs that are being successfully executed. However, according to EPA's data, 241 counties would be in non-attainment under the 70-ppb standard, if implemented in compliance with the normal schedule. Implementing this standard now, when nearly the entire nation will be in compliance with it within a decade, is needlessly punitive and puts our economic health and growth at an uncompetitive advantage, if not in decline.

The projected near-universal attainment within eight years, which purports to support the new standards, undermines them. Despite the fact that a vast majority of the country will be in attainment of the standards by 2025 under the current regulatory scheme, the EPA seeks to enact rules that will immediately bring the punitive status of non-attainment to areas around the country – a status that creates significant compliance costs, which serve as a deterrent to businesses looking to move to or expand in an area. This cuts to the heart of how unnecessary the immediate implementation of the standards is, especially considering their cost in economic growth.

It is our strong recommendation that these bills, which extend implementation to a realistically achievable timeframe, be passed. Between now and 2025, the EPA should consider new and innovative ways for achieving lower standards of emissions and implementing emissions control mechanisms by working with state and local agencies. This could include a nationwide rule allowing inter-pollutant trading, inter-source trading, or a system to match up companies requiring emission reduction credits with potential projects.

Chairman, ranking member and members of this subcommittee, on behalf of the Baton Rouge Area, BRAC supports the passage of the proposed bills for the following reasons:

- 1) **To prevent additional loss of existing and future economic opportunity for not only our region, but for other top-performing metropolitan economies in the U.S.**
- 2) **To provide local and regional economies with a realistic timeline to come into attainment for the 2015 standards with successful practices already in place**

This concludes my prepared statement. I thank you for your time and will be pleased to answer any questions.

Senator CAPITO. Thank you.
Mr. GARVIN.

STATEMENT OF SHAWN GARVIN, SECRETARY, DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mr. GARVIN. Chairman Capito, Ranking Member Whitehouse, Senator Carper, and members of the subcommittee, I am Shawn Garvin. I serve as Delaware's Secretary of the Department of Natural Resource and Environmental Control.

Thank you for the opportunity to testify on Making Implementation of the National Ambient Air Quality Standards for Ground Level Ozone Attainable: Legislative Hearing on S. 263 and S. 452.

Since the Clean Air Act was last amended 27 years ago, it has prevented literally hundreds of thousands of premature deaths, as well as averted millions of instances of morbidity, including, for example, heart disease, chronic bronchitis and asthma.

The health benefits associated with this landmark legislation have far outweighed the cost of reducing pollution by more than 30 to 1. Moreover, we secured these health benefits over the same period that our Nation's gross domestic product has grown.

I think everyone can agree the Clean Air Act is one of the Nation's most effective environmental statutes. Simply put, the Clean Air Act works.

Accordingly, it is crucial that any comprehensive amendments to the Act be deliberative and thoughtful and ensures that the basic, important tenets of the legislation, protection of public health and welfare, remain intact.

Unfortunately, after reviewing S. 263 and S. 452, I concluded these bills significantly weaken the existing Clean Air Act by delaying important deadlines and substantially altering the process for settling air-based, air quality standards.

This results in undermining the health protection afforded by the Clean Air Act to our citizens, our environment and our future. Delawareans continue to struggle to bring healthy air to our citizens because we are downwind and subject to air pollution transport from facilities in other parts of the Country.

The Clean Air Act requires States to obtain their ozone National Ambient Air Quality Standards, NAAQS, as expeditiously as practicable, a responsibility that would be unduly impacted by these bills.

Because the NAAQS are set to protect public health with adequate margin of safety and are based on the base available science, any delay in implementing NAAQS would prolong exposure by the public to unhealthy air.

EPA's 2015 ozone NAAQS is expected to provide ample public health benefits across the United States, including preventing 230,000 asthma attacks in children, 630 asthma-related emergency room visits, and 320 to 660 premature deaths annually by 2025, excluding California.

Arbitrarily delaying implementation of the 2015 ozone NAAQS to 2025 would leave the 2008 standard which has been found to be outdated and insufficiently protective of public health as a prolonged, inadequate target for protecting health.

This unnecessarily puts our citizens in great peril for suffering from pollution's adverse health and welfare impacts, including premature mortality.

In addition, it does not accurately inform the public of the true quality of the air. The bill's provision to extend the review cycle for all NAAQS from 5 years to 10 years further exacerbates this problem.

Experience has shown that NAAQS reviews rarely occur within the current statutory 5-year cycle. An extension to 10 years with additional analysis will likely result in a much longer review time and additional work by EPA that will extend well beyond 10 years.

Thus, our State's ability to provide clean, healthy air as expeditiously as practicable becomes an unattainable goal. Indeed, the cumulative effect of delayed implementation and longer review cycles means that by the time EPA reviews the ozone standard again, the underlying science for the existing standard will be 20 years old. This is what Congress wanted to avoid when the Clean Air Act was amended.

Allowing technological feasibility to be considered when setting NAAQS runs counter to the original core principles of the Clean Air Act. NAAQS should be set solely on the basis of health. This is now well settled law, including a unanimous opinion from the Supreme Court in the *Whitman v. American Trucking Associations* case.

Once health-based standards are established, the Clean Air Act appropriately allows States to consider other factors such as cost and technological feasibility as they develop strategies to attain the standards.

Allowing the consideration of technological feasibility when setting NAAQS will defeat the critical purpose of a health-based standard. The adverse harm from polluted air is a matter of science and has nothing to do with controlled technology costs.

Furthermore, historical experience has shown that current considerations of technological feasibility are poor predictors of future innovation breakthroughs created by the technologically forcing nature of the Clean Air Act.

The bill's provision regarding permitting also impairs the health of our citizens. Allowing air pollution sources to obtain permits under an outdated standard, whether because of an arbitrary delay as proposed for the 2015 ozone NAAQS, or because EPA has not issued rules or guidance imprudently punishes people who reside and work in areas with poor air quality and prolongs the inequity that exists between upwind and downwind States.

If Congress is truly concerned about the timeliness of EPA rules, it should ensure that EPA has adequate resources to carry out its responsibilities.

The bills also inappropriately address exceptional events by expanding the exceptional events criteria to include conditions occurring on days during which the highest pollution episodes actually occur.

This makes setting a health-based ozone NAAQS a meaningless exercise by absolving EPA and the States from taking efforts to achieve it under the prevalent conditions leading to the worse air quality days.

The intent of exceptional event criteria is to allow a State to discount NAAQS exceedances that result from one time, unpredictable and uncontrollable events, for example, a volcanic eruption or a wild fire.

This short-sightedness would result in continuation of harmful exposure to polluted air while ignoring that a repeatable, predictable and preventable high pollution day occurred.

Other provisions of the Act already address the issues that appear to be motivating this legislation. The Act's nonattainment area classification provides areas with more ozone pollution problems more time to comply.

Other mechanisms allow States the flexibility to adjust the minimum pollution reduction requirements based on showing of the need, success in lowering ozone levels and the adoption of certain other measures.

In addition, the Act's good neighbor provision requires States with emissions that contribute significantly to other States' ozone attainment to take action to reduce that contribution.

Even with all the in-State emission improvements, we continue to struggle to meet the ozone standard. The answer to solving our ozone problem lies outside our boundaries and we need emission reductions upwind.

We have lodged four separate petitions with the EPA requesting controls to be installed at power plants or for EPA to compel the power plants to operate their installation pollution control equipment.

We have tried to prompt our upwind neighbors through the State Collaborative on Ozone Transport to reduce emissions but to no avail.

In conclusion, the proposed legislation under cuts requirements of the Clean Air Act that are crucial to obtaining healthy air quality as expeditiously as practicable. Further, the proposed amendments change the intent of the Clean Air Act which is the swift protection of public health to one of delay and deprivation of public health protection.

Delaware supports efficient and expeditious implementation of the National Ambient Air Quality Standard but opposes bills which would weaken public health protection. Revisions to the Clean Air Act may be warranted such as provisions to directly address climate change or strengthen the good neighbor provision to deal with air pollution transport, but changes in S. 263 and S. 452 are problematic because they take us backward in the protection of our citizens from public health and economic harms of air pollution.

Thank you for the opportunity to testify. I am happy to answer any questions.

[The prepared statement of Mr. Garvin follows:]



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TESTIMONY OF SHAWN M. GARVIN BEFORE THE
SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
SUBCOMMITTEE ON CLEAN AIR AND NUCLEAR SAFETY ON AN AMENDMENT TO
THE CLEAN AIR ACT REGARDING S.263 and S.452.

May 23, 2017

Chairperson Capito, Ranking Member Whitehouse, and Members of the Subcommittee,
my name is Shawn Garvin and I serve as Delaware's Secretary of Department of Natural
Resources and Environmental Control. Thank you for the opportunity to testify on "Making
Implementation of the National Ambient Air Quality Standards for Ground-Level Ozone
Attainable: Legislative Hearing on S.263 and S.452."

Since the Clean Air Act was last amended 27 years ago, it has prevented literally
hundreds of thousands of premature deaths, as well as averted millions of incidences of
morbidity, including, for example, heart disease, chronic bronchitis and asthma. The health
benefits associated with this landmark legislation has far outweighed the costs of reducing
pollution by more than 30 to 1. Moreover, we have accrued these health benefits over the same
period as our nation's gross domestic product has grown. I think everyone can agree that the

Delaware's Good Nature depends on you!

Clean Air Act is one of our nation's most effective environmental statutes. Simply put, the Clean Air Act works.

Accordingly, it is crucial that any comprehensive amendments to the Act be deliberate and thoughtful, and ensures that the basic important tenets of the legislation -protection of public health and welfare - remain intact. Unfortunately, after reviewing S.263 and S.452, I have concluded that these bills significantly weaken the existing Clean Air Act by delaying important deadlines and substantially altering the process for setting health-based air quality standards. This results in undermining the health protections afforded by the Clean Air Act to our citizens, our environment, or our future. Delaware continues to struggle to bring healthy air to our citizens because we are downwind and subject to air pollution transport from facilities in other parts of the Country.

The Clean Air Act requires states to attain the ozone national ambient air quality standards (NAAQS) as expeditiously as practicable, a responsibility that would be unduly impeded by the Bills. Because the NAAQS are set to protect public health with an adequate margin of safety and are based on the best available science, any delay in implementing the NAAQS would prolong exposure by the public to unhealthy air. EPA's 2015 ozone NAAQS is expected to provide ample public health benefits across the United States, including preventing 230,000 asthma attacks in children; 630 asthma-related emergency room visits; and 320 to 660 premature deaths annually by 2025 (excluding California).

Arbitrarily delaying implementation of the 2015 ozone NAAQS to 2025 would leave the 2008 standard – which has been found to be outdated and not sufficiently protective of public health – as a prolonged inadequate target for protecting public health. This unnecessarily puts our citizens in greater peril of suffering from the pollution’s adverse health and welfare impacts, including premature mortality. In addition, it does not accurately inform the public of the true quality of their air. The Bills’ provisions to extend the review cycle for all NAAQS from five years to ten years further exacerbate this problem. Experience has shown that NAAQS reviews rarely occur within the current statutory five-year cycle, and an extension to ten years with additional analysis will likely result in a much longer review time, and additional work by EPA that will extend well beyond ten years. Thus, our states’ ability to provide clean, healthy air “as expeditiously as practicable” becomes an unattainable goal. Indeed, the cumulative effect of delayed implementation and longer review cycle means that by the time EPA reviews the ozone standard again, the underlying science for the existing standard would be twenty years old. This is what Congress wanted to avoid when the Clean Air Act was amended.

Allowing technological feasibility to be considered when setting NAAQS runs counter to the original core principle of the Clean Air Act - NAAQS should be set solely on the basis of health. This is now well-settled law, including in a unanimous opinion from the Supreme Court in the *Whitman v Trucking Association*. Once health-based standards are established, the Clean Air Act appropriately allows states to consider other factors, such as costs and technological feasibility, as they develop strategies to attain the standards. Allowing the consideration of technological feasibility when setting NAAQS will defeat the critical purpose of health-based standards. The adverse harm from polluted air as a matter of science has nothing to do with

control technology costs. Furthermore, historical experience has shown that current considerations of technological feasibility are poor predictors of future innovation breakthroughs created by the technology-forcing nature of the Clean Air Act.

The Bills' provisions regarding permitting also imperil the health of our citizens. Allowing air pollution sources to obtain permits under an outdated standard – whether because of an arbitrary delay, as proposed for the 2015 ozone NAAQS, or because EPA has not issued rules or guidance – imprudently punishes people who reside and work in areas with poor air quality and prolongs the inequity that exists between upwind and downwind states. If Congress is truly concerned about the timeliness of EPA rules it should ensure that EPA has adequate resources to carry out its responsibilities.

The Bills also inappropriately address “exceptional events” by expanding the exceptional events criteria to include conditions occurring on the days during which the highest pollution episodes actually occur. This makes setting a health-based ozone NAAQS a meaningless exercise by absolving EPA and the states from taking efforts to achieve it under the prevalent conditions leading to the worst air quality days. The intent of the exceptional event criteria is to allow a state to discount NAAQS exceedances that result from a one-time, unpredictable, and uncontrollable event – for example, a volcanic eruption or a wildfire. This short-sightedness would result in the continuation of harmful exposure to polluted air while ignoring that a repeatable, predictable, and preventable high pollution day occurred.

Other provisions of the Act already address the issues that appear to be motivating this legislation. The Act's nonattainment area classifications provide areas with more difficult ozone

pollution problems with more time to comply. Other mechanisms allow states the flexibility to adjust the minimum pollution reduction requirements based on the showing of need, success in lowering ozone levels, and the adoption of certain other measures. In addition, the Act's good neighbor provisions require states with emissions that contribute significantly to other states' ozone nonattainment to take action to reduce their contribution.

In the last decade, we have made great progress in reducing pollution from our industrial sources and have significantly cleaned up our smokestacks. We have reduced our sulfur dioxide emissions by over 95%, reduced emissions of volatile organic compounds and nitrogen oxides which are precursors to ozone by 67 and 68 percent respectively. We have reduced primary particle pollution of PM10 size by 70 percent and reduced PM2.5 particle emissions by 90 percent. We have done all of this through adoption of various measures. We put in place a stringent multi-pollutant regulation which resulted in installation of advanced controls to reduce sulfur dioxide, nitrogen oxides and mercury from our coal fired power plant. Today, Indian River Power Plant in Sussex County, Delaware is one of the cleanest coal fired plants in the country.

Even with all the in-state emissions improvements, we continue to struggle to meet the ozone standard. The answer to solving our ozone problem lies outside of our borders and we need emissions reductions upwind. We have lodged four separate petitions with the EPA requesting controls to be installed at power plants or for EPA to compel the power plants to operate their installed pollution control equipment. We have tried to prompt our upwind neighbors through the State Collaborative On Ozone Transport to reduce emissions, but to no

**Senate Committee on Environment & Public Works
Subcommittee on Clean Air & Nuclear Safety
Hearing entitled, "Making Implementation of the National Ambient Air Quality Standards
For Ground-Level Ozone Attainable: Legislative Hearing on SW. 263 and S. 452."
May 23, 2017
Questions & Answers of Secretary Shawn M. Garvin
Delaware Department of Natural Resources and Environmental Control**

Ranking Member Carper:

- I. Administrator Scott Pruitt is constantly talking about "cooperative federalism," suggesting that responsibilities be taken away from a centralized Environmental Protection Agency (EPA) and delegated more to the states. How do downwind states like Delaware and Arizona depend on a strong EPA for clean air? Should the EPA be doing more to protect downwind states, not less?
- A. As a downwind state, Delaware's ability to provide healthy air to its citizens is dependent on the quality of the air that blows in across its borders. In case of ozone some 94% of the pollution is attributable to sources outside of Delaware. The Clean Air Act assigns the upwind states with the responsibility to be good neighbors and adopt measures that enable downwind states to meet air quality standards. However, the upwind states are not always eager to meet their obligations and we need a strong EPA to ensure compliance. We need a strong and capable EPA that can provide the science necessary to assign responsibilities to the states, evaluate their plans, and enforce the plans when they fail to deliver. EPA has not fulfilled that responsibility to date and we need them to do more not less.
2. EPA has projected that a majority of the country will meet the new ozone standard- 70 parts per billion – by 2025 due in major part because of federal clean air protections on the books today. Administrator Pruitt has signaled under his watch some – or all – of these clean air protections may go away. At the same time, the President's budget released today calls for huge cuts to grants that help states address air pollution. Would you categorize these actions taken by the Trump Administration as examples of "cooperative federalism"? If not, why not? Will these actions affect health and compliance costs for Delaware?
- A. We depend on the EPA to address air pollution from sources that are outside of our reach. We need EPA to address transported pollution from upwind sources as well as pollution from sources that EPA had been given primacy to regulate such as setting engine standards for cars, trucks and locomotives. The projection of attainment by 2025 is based on implementation of a number of standards that the current administration is delaying or repealing such as the Clean Power Plan, new oil and gas regulations, and the Transport

Rule Update. We have commented that the EPA's projection is overly optimistic and more needs to be done by the EPA not less. Taking away resources from the EPA when more work is needed to address the federal responsibility is contrary to the tenets of cooperative federalism under any interpretation of that term because it will result in EPA's failure to do its part. EPA's failure will cause continued poor air quality for Delaware citizens who will have to pay the cost as well as continued burden on industry who will have to live under the more restrictive non-attainment rules.

3. In your testimony, you conclude that both of these bills could delay ozone clean-up significantly. In your experience, why is the five year time period for a NAAQS review process adequate and does the current Clean Air Act structure give states the flexibility to meet health standards?
 - A. Five year NAAQS process is adequate because it requires the EPA to use the latest science in setting the standards and should the science not support a change then the standard can stay the same. It is a verification process. We renew permits for major facilities on a five year schedule to make sure that all terms and conditions remain valid and continue to comply with the air quality standards. It seems odd to suggest that we revisit our health based standards on a schedule less frequent than that used for operating permits. EPA has not always done a good job of adhering to the five year cycle and we need to make sure that the Agency is sufficiently resourced to do so. Much of the concerns raised with revisions to the standards can be managed through the implementation process where both the EPA and states have broad authority and can exercise their flexibility. For instance, existing sources are required to meet Reasonably Available Control Technology (RACT) which the states can determine sector wide or on a case-by-case basis so that they can address individual circumstances.
4. How would these bills affect the states within the Ozone Transport Commission?
 - A. These bills will exacerbate the inequity that exists between Ozone Transport Region (OTR) states and the upwind states by allowing those states to avoid implementing measures that would help air quality in the OTR. At its most recent meeting on June 6, 2017, the Commission adopted a resolution opposing these bills which I am attaching here as part of my response. The resolution conveys the sentiment of the member states.
5. States have already submitted to EPA recommendations for which counties should be designated nonattainment or attainment for the 2015 standard. This means communities in Delaware already can know if they are in an area that may have unhealthy air. If these bills before us today pass, how will you explain to your constituents who are currently living in these unhealthy air areas today that there will be over a decade before anyone starts addressing the pollution? Do you agree postponing the ozone standard by 10 years will remove the pressure for communities across the nation to treat this pollution with the urgency it deserves?

- A. It will be very difficult to explain to any community why the air they are breathing is not meeting the standard set by science yet we are not allowed to call it bad air quality. This will further complicate our health messaging that we currently use. For instance, when we forecast air quality to exceed the standard for ozone we ask the public to take certain measures such as staying indoors to limit their exposure or take voluntary actions such as to refrain from running small engines like lawn mowers and filling their gas tank in the evening. It would be extremely difficult to ask for these actions if the ozone standard implementation is delayed. We should not ask the public to take these extra measures when the forecast calls for exceedance of the 70 ppb standard while the industrial sources are allowed to play by the old rules. This will certainly drive the standards to the lowest common denominator of the least restrictive requirement thus delaying all progress.
- 6. For Delaware, mobile sources are a major contributor to ozone pollution. How do states depend on the federal government to help clean up mobile sources? Could the federal government do more on this front?
- A. Mobile source emissions now dominate our emissions inventory of ozone precursor pollutants. The recipe for reducing mobile source emissions involves introduction of cleaner fuels, reducing car dependence and making engines run cleaner. States have very little authority to regulate fuels on their own and thus depend on the EPA. Similarly, states (except California) are prohibited from developing their own engine standards and can either adopt California car standards or depend on the federal program. We need cleaner cars in order to reduce our in-state emissions and also reduce the emissions from vehicles that transit our state. Additionally, we have petitioned the EPA to strengthen the NOx standards for the Heavy Duty Diesel engines because new technologies allow these engines to run some ten times cleaner than current standards.
- 7. From all that we are hearing from Administrator Scott Pruitt, the EPA under his watch is not interested in doing more to clean up mobile sources. Instead, it sounds like he is interested in rolling back regulations that reduce tailpipe emissions that are already on the books. If he is successful, what would be the impact on states like Delaware that depend on these emission reductions?
- A. The current modeling exercise that predicts the majority of the states will attain the new ozone standard by 2025 assumes implementation of the tighter tailpipe standards. Any rollback of the standards such as those for cars and light duty trucks, Mercury and Air Toxics Standards (MATS), Clean Power Plan (CPP), etc. will result in increased ozone precursor emissions; which means that we need to obtain those lost emissions reductions elsewhere if we intend to protect the public health. We only have one other place to go to find emissions reductions and that is from our industry and commercial sector. We simply do not have any reasonable emission reduction opportunities left in those sectors.
- 8. Under the Clean Air Act, how many communities have been stripped of their transportation funding because they have not been able to achieve attainment for a National Ambient Air Quality Standard?

- A. I believe there have only been a few instances where a community has faced sanctions related to transportation conformity. Transportation solutions are not always easy but they have always been available. Much of the problem with transportation conformity can be avoided by ensuring that the cars of the future are cleaner than they are today.
9. I understand the importance of treating "exceptional events" as indeed "exceptional" or extraordinary. However, the S.263 redefines these events as much more ordinary and occurring very frequently. If this provision is adopted, do you think most communities across the country could use this as an excuse to circumvent important air pollution control actions rather than address them head-on with the importance and urgency needed?
- A. The expanded definition of "exceptional events" in the bill allows the agencies to disregard air quality data on days that are most likely to produce high ozone such as very hot days or days with atmospheric inversions. This certainly invites and in fact pressures communities across the country to avail themselves of the opportunity to erase bad air quality days using the "exceptional event" as an excuse and avoid dealing with the underlying air pollution problem directly.
10. One provision in the bill stipulates that industry can revert to complying with a decade-old permitting rule if EPA is delayed in issuing an updated rule when a new NAAQS is published. How do you square this provision with the President's budget calling for drastic cuts in the agency's operating budget-including issuing guidance documents like those contemplated in the bill? Would this create a self-fulfilling prophecy in that the EPA will not be able to update a rule and therefore weaker standards stay in place? Should the legislation protect the public rather than the regulated industry if EPA is unable or unwilling to meet its deadlines?
- A. This provision appears to reward the regulated community, and ignore the public health of our citizens if EPA delays publishing important guidelines. The bill allows industries to meet preconstruction permit requirements based upon outdated standards if EPA were unable or unwilling to publish its rules and guidance at the same time it promulgated its health-based standards. While states have long urged EPA to expedite its process for issuing guidance to accompany new or revised health-based air quality standards, these delays have not significantly interfered with our ability to work with industry to comply with important permitting requirements. One way for Congress to overcome these delays is to ensure that EPA has sufficient resources to do its job. We agree that the proposed budget cuts seem to aggravate the situation and set the Agency up for failure.

Senator CAPITO. Thank you, Mr. Garvin.
Dr. KRAFT.

**STATEMENT OF MONICA KRAFT, MD, PAST PRESIDENT OF THE
AMERICAN THORACIC SOCIETY, UNIVERSITY OF ARIZONA
COLLEGE OF MEDICINE**

Dr. KRAFT. Chairman Capito, Ranking Member Whitehouse, Senator Carper and members of the committee, thank you so much for the opportunity to testify on behalf of the American Thoracic Society.

As a clinician who actively treats patients with lung disease such as asthma and COPD and an asthma researcher who spent the majority of my academic career investigating causes and treatments for asthma, there are a few key points I would like to make.

First, I think we would all agree that ozone is detrimental to the health of millions of patients with severe lung disease. As a lung disease specialist, I treat people with these severe respiratory diseases and with medications, trigger avoidance and other interventions. I work with patients to help them control their disease so they can feel in control of their lives. However, they cannot control the outdoor air quality.

Having taken care of patients in areas of Arizona with specific air quality problems, I know from experience that ozone impacts my patients' health. We know it can cause asthma attacks, COPD exacerbations that can lead to emergency department visits, hospitalizations and even premature death.

There are literally hundreds of high quality, peer review research articles showing that ozone exposure is bad for patients with chronic diseases such as asthma and COPD, but also for those with cardiovascular disease.

Ozone is bad for healthy people too. That often gets lost in the discussion. We know that when young, healthy people are exposed to ozone, they also demonstrate declines in their lung function. It is not just the young, the ill and the frail that feel the detrimental effects of ozone; it is everyone.

In addition to delaying the ozone standard, the bill actually forces the EPA to update or to delay updating science-based initiatives for widespread and prevalent dangerous air pollutants. As the Clean Air Act has required for decades, the Nation needs to ensure that we set standards for our citizens, who are my patients every 5 years, which is what the law currently calls for.

The current request to delay to every 10 years would force the Nation to set aside important new research that is currently identifying potential threats that air pollution presents to my patients and our citizens.

The dangerous levels of deadly air pollutants like lead, particulates, and carbon monoxide remain in the air longer, needlessly exposing our citizens to the toxic health effects.

The health impacts of the delay, in addition to what I have stated, are not trivial. In the 10-year review called for by this bill, a child will grow from a new borne to age ten. We know that lung development substantially increases after birth and exposure, especially in early life, to ozone and other particulates can actually

interact with allergens and other processes to create asthma, to actually cause it.

By delaying improvements in air quality, we are literally burdening our children with lifelong health issues.

Also, I think the legislation would affect the people of Arizona, which is where I live. The prevalence of asthma in Arizona is higher than it is nationally, which is 10 percent. In Arizona, it is 15 percent and even higher in children.

According to the Arizona Hospital Discharge Data base, there are between 30 to 35 emergency department and hospital visits for asthma every year, leading to about 130,000 hospitalizations at a cost of \$1 billion annually.

According to the 2000 State of the Air Report by the American Lung Association, Phoenix ranks No. 5 of the 25 most polluted cities with regard to ozone and 21st out of 25 with regard to particulates.

I take care of patients all around the region, in Tucson, Phoenix and the southwest. We routinely have to talk about how they should curb their activities and change their lives based on the air quality. Despite my best efforts, these patients still experience asthma attacks and COPD exacerbations a day or two after those high ozone days.

Last, I think the bill fundamentally rewrites the Clean Air Act by directing the EPA Administrator to consider factors unrelated to health when setting national ambient air quality standards. As the Clean Air Act clearly states, the EPA Administrator must set clean air standards to protect public health, irrespective of estimated costs or assumed technological feasibility to clean it up.

The Administrator does that following a very careful, scientific review. Even at 70 ppb, there still are health effects. Therefore, I think decreasing the standard from 75 ppb to 70 ppb actually is a meaningful difference.

Fortunately, the approach has worked well to clean up the Nation's air for decades. Ozone levels are decreasing, which is good. However, I would propose to you that there are still detrimental effects even at the current levels.

In fact, the measurements to create health-based standards have pushed the U.S. to develop new technologies, which also create jobs, save money and save lives. The current approach has been affirmed in the U.S. Supreme Court in the majority opinion written by the late Justice Scalia.

As a clinician, a scientist and a citizen, I urge you to reject this legislation. Thank you very much.

[The prepared statement of Dr. Kraft follows:]



Testimony of the American Thoracic Society
Presented by Monica Kraft MD
Before the Senate Environment and Public Works, Clean Air and Nuclear Safety
Subcommittee
On May 23, 2017
Regarding S. 263 – Ozone Standards Implementation Act &
S. 452 - Ozone Regulatory Delay and Extension of Assessment Length (ORDEAL) Act

Mr. Chairman, Ranking member, my name is Monica Kraft and I am a pulmonologist and Chair of the Department of Medicine at the University of Arizona College of Medicine in Tucson, in the Division of Pulmonary and Critical Care Medicine at University of California San Francisco. On behalf of the American Thoracic Society, I want to thank the Committee for this opportunity to testify regarding S. 263 and S. 452. The American Thoracic Society is a medical professional organization of more than 15,000 professionals and patients dedicated to the prevention, detection, treatment and cure of respiratory disease, critical care illnesses and sleep-disordered breathing.

The ATS is testifying today to register our strong concerns with both S. 263 and S. 452. Both bills would make significant and, in my opinion, unwarranted changes in how EPA establishes and enforces the National Ambient Air Quality Standard for ozone and other criteria pollutants. If enacted, these pieces of legislation would have significant negative impacts on the health of many Americans.

Ozone (O₃) is a potent oxidant that damages the airways and lungs. There are literally hundreds of high quality, peer-reviewed studies that document the adverse health effects that exposure to ozone pollution has on the lungs and other organ systems. The American Thoracic Society strongly supports the current Clean Air Act requirements that the standards must be set solely on the basis of protecting public health and that the reviews of the standards be completed every five years. Current, up-to-date science must be the basis of the protections to public health.

Given the crucial health effects I will describe further, Congress must not delay implementation of the 2015 standard until 2024. Delays in implementing the standard will cost children and adults across the nation the vital protection intended and provided under the Clean Air Act.

Recent studies provide several lines of evidence demonstrating dose-response relationships between ozone exposure in the 60 to 80 ppb range and adverse health effects. These



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effects include hospital admissions and emergency room visits for children with asthma [1-4]. A study of younger, pre-school children in Atlanta has documented an increase in emergency department visits for pneumonia; this study showed that a 3 ppb increase in the three-day average of ozone was associated with an eight percent higher risk of pneumonia [5].

A growing body of evidence suggests that exposure to ozone may also induce the development of asthma in children, in addition to provoking attacks in children who already have the condition. A recent study in California compared children who lived in low ozone communities to children who lived in high ozone communities. Young athletes who participated in three or more outdoor sports, who did not have physician-diagnosed asthma at the beginning of the study, were more likely to develop asthma in high ozone communities than those in low ozone communities [6].

While this well constructed study **does not** prove that ozone causes asthma, it does add to a growing body of evidence that suggests ozone plays an important role in its development.

Taken together, the data are persuasive that ozone pollution – even at levels permissible under the current standard – makes children sick. The Congress wisely gave EPA the authority and obligation to set a standard that protects children from the adverse health effects of ozone exposure. But it's not just children -- adults are also at risk.

Research studies of adults have also shown that as ozone levels increase, so do severe asthma exacerbations, emergency room visits, and hospitalizations for asthma [4,7,8]. Similar associations have been found for adult admissions for chronic obstructive pulmonary disease [9,10] and pneumonia [10]. Healthy adults are affected as well. A population-based cohort study of generally healthy adults found that the standard measure of how well the lungs function, FEV₁, was lower after days when ambient ozone ranged from 59 ppb to 75 ppb compared to days with levels under 59 ppb [11]. Healthy individuals have normal lung function. Controlled human exposure studies have re-affirmed lung function decrements in healthy adults after exposure to 60 ppb to 70 ppb of ozone [12,13].

Perhaps of greatest concern, there is now stronger evidence of increased mortality in association with higher ozone levels [14-16], particularly among the elderly and those with chronic disease [17,18]. These large, multi-city studies found strong and consistent associations with increased risk of premature death, particularly in the warmer months when ozone levels are higher.

In sum, there is accumulating evidence that ozone pollution –at levels currently seen in the United States– is damaging to human lungs and contributes to disease. Implementing the cleanup required under the Clean Air Act must not be delayed.

While the evidence on ozone and respiratory effects is comprehensive and compelling, recent studies have shown adverse health effects beyond the lung. The Integrated Science Assessment (ISA) has concluded that, "...the evidence is stronger for most every health endpoint, with causal findings strengthened from 'suggestive' to 'likely causal' for cardiovascular effects and total mortality from short-term exposures." In addition, the ISA noted that ozone affects the central nervous system and brain, and comments that a number of recent toxicological studies revealed various changes in neurologic function or histology with long-term exposure to ozone, including changes similar to those observed in neurodegenerative disorders, such as Parkinson disease and Alzheimer disease. The ISA

concluded that, "...the toxicological evidence for the impact of O₃ on the brain and behavior is strong, and suggestive of a causal relationship between O₃ exposure and effects on the central nervous system." [19]

In summary, recent research only reaffirms and deepens our understanding of the health effects of ozone exposure.

Reducing Pollution Improves Health

In the midst of all this concerning research documenting the adverse health effects of air pollution there is good news. The good news is that as pollution is reduced, health improves. We know this from studies around the Atlanta and Beijing Olympics – where the respective host cities took steps to reduce air pollution emissions during the Olympics.

Not only did those efforts result in air pollution reductions, they resulted in improved health as measured by changes in biomarkers (20,21), reduced morbidity and consumption of health resources (22-24).

Studies on Steubenville, OH and Salt Lake City, UT provide other real world examples showing that reduced industrial air pollution emissions lead to measurable improvements in morbidity and mortality (25, 26). Two recent publications based on a 20-year multi-cohort study of children in southern California demonstrated improvements in lung-function development in children as air quality improved. These were observed in girls and boys, in children with and without asthma, and across multiple ethnicities – suggesting all children benefit from improvements in air quality (27, 28).

Concerns with S. 263 and S. 452

The ATS has several grave concerns with both S. 263 and S.452. If enacted, these bills would:

Delay implementation of the EPA ozone standard until 2025 – delaying the ozone pollution reductions called for in the EPA rule. As noted above, the delay in reducing ozone pollution will lead to avoidable adverse health effects, including asthma attacks, COPD exacerbations, missed school and work days, emergency room visits, hospitalizations, and premature death.

Delay Review and Revision of Other All Criteria Pollutants –in addition to delaying the ozone standard, both S. 263 and S. 452 would also rewrite current law to delay revision of all the criteria pollutants under the Clean Air Act. Instead of reviewing National Ambient Air Quality Standards every 5 years – as called for under current law – this bill would call for revision of standards every 10 years. This means that the American people would not receive the benefits of up-to-date science in identifying and protecting them from harmful health effects of these pollutants. This means pollutants like lead, particulate matter and carbon monoxide will remain in the air longer – needlessly exposing the American public to dangerous pollution and their adverse health effects.

Delaying improvements in air quality, be it ozone or another criteria pollutant, is not a trivial matter. In the 10-year review lag called for in this bill, a child will grow from a newborn to a 10 year old. In that time, the lungs, like the rest of the body, will see tremendous changes that will determine life-long health prospects of that child. We know that pre-natal and youth

exposure to air pollution creates adverse development of the lungs in ways that impact adult disease. By delaying improvements in air quality, we are literally burdening children with life-long health issues.

In addition, the ATS has additional concerns with S. 452, a sweeping bill that would weaken the Clean Air Act in additional, fundamental ways.

S. 452 fundamentally changes the role of the EPA scientific review committee from evaluating the science that documents the health effects of ozone air pollution, to a committee that is supposed to adjudicate many interests of “public health, welfare, social, economic, or energy effects” when discussing options to set and maintain the National Ambient Air Quality Standard for ozone. Congress has already resolved this issue when it stated clearly in the 1990 Clean Air Act that the EPA Administrator shall set National Ambient Air Quality standards to protect the public health, irrespective of costs.

Lastly, the bill fundamentally rewrites the Clean Air Act by directing the EPA Administrator to consider technical feasibility when setting National Ambient Air Quality Standards. The Clean Air Act currently requires the EPA Administrator to set Clean Air standards to whatever level is necessary to protect the public health. This requirement means that the standards should accurately reflect the current health science. Not only does this drive air pollution cleanup to levels that are safer to breathe, it also allows patients to have access to accurate information about how the quality of their air may impact their health. The national standards are the basis for the air quality index that many of my patients rely on to determine whether the air outside will harm their health on a given day, which allows them to plan their activities accordingly. If these standards were no longer solely based on the science, patients could be told that the air outside is safe on a day when it actually isn't. This could have dangerous consequences.

Technological feasibility considerations are rightly considered later during the implementation and enforcement process, but they have no place in the setting of the national air quality standards. That health should be the sole requirement for setting a standard has been affirmed by the U.S. Supreme Court in a majority opinion written by the late Justice Scalia.

Mr. Chairman, research shows air pollution is bad for health. More importantly, research shows reducing air pollution improves health. If enacted, these bills would delay improvements in air quality and contribute to respiratory harm including asthma exacerbations and premature deaths that could have been avoided. The American Thoracic Society respectfully urges the committee to reject S. 263 and S. 452.

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Senate Committee on Environment & Public Works
 Subcommittee on Clean Air & Nuclear Safety
 Hearing entitled, “Making Implementation of the National Ambient Air Quality Standards
 for Ground-Level Ozone Attainable: Legislative Hearing on S. 263 and S.452.”
 May 23, 2017
 Questions for Dr. Monica Kraft

Ranking Member Carper:

1. Should costs be considered when determining Clean Air Act National Ambient Air Quality Standards? If not, why not?

Response: The Clean Air Act - the law Congress passed to direct EPA to protect Americans from dangerous air pollution – is explicit that EPA must set the national ambient air quality standards for criteria pollutants at a level to protect the public health, including vulnerable populations, irrespective of costs. EPA’s obligation to set standards based solely on the impacts on health has been affirmed by the U.S. Supreme Court (*American Trucking v. EPA*).

The ATS strongly supports that approach. Congress had compelling reasons to establish Clean Air Act standards based solely on health. First, Americans have a right to know if the air they breathe is bad for their health. One of the ways they know this is by understanding if the air in their community meets national standards. The public can rely on the information EPA provides because it sets its standards on a thorough, public analysis of the science.

This makes sense to me. I’m a doctor. If my patient has a temperature of over 100.4 degrees, she has a fever. Figuring out what the costs are to reduce that fever has no bearing on my telling her that she has a fever. We’ll deal with costs once we determine how to reduce her fever.

In the same way, Congress placed assessing the costs in the next phase: determining how to clean up the emissions causing the polluted air. Analysis of costs and benefits are integral to the review of each step to cleaning up the sources.

Second, Congress recognized that health-based National Ambient Air Quality standards would likely drive the development of new technology. Senator Ed Muskie, (D-ME) one of the authors of the Clean Air Act, underlined that during the hearings:

“Our responsibility is to establish what the public interest requires to protect the health of persons. This may mean that people and industries will be asked to do what seems to be impossible at the time. But if health is

to be protected, these challenges must be met. I am convinced they can be met.”¹

History shows he was correct. Much of the technology that exists to today to reduce dangerous emissions did not exist when Congress strengthened the Clean Air Act in 1970 and again in 1990. New technology developed because the need to reduce emissions from many different sources created a growing market for industry. Allowing the health-based standard to be constrained by costs associated with technology today would significantly reduce industry incentive to invest in developing tomorrow's technology. The current technology-driving intent of the Clean Air Act has served both industry and patients well.

Third, any discussion of costs, begs the question, “Costs to whom?” Opponents of more protective air pollution standards are quick to point out the costs industry bear in meeting Clean Air Act standards, but seem to be less sympathetic to the externalized costs associated with air pollution. Air pollution has adverse health effects on the U.S. population. Asthma attacks, COPD exacerbations, heart attacks and strokes, hospitalizations and premature death are all associated with exposure to air pollution. These adverse health outcomes caused by air pollution have both economic and emotional costs that often get lost in debates about EPA's standard setting process. As a physician who treats patients with serious lung disease, I can tell you that air pollution adversely affects my patients' health, their physical and emotional well-being and their pocket book.

2. Current law allows states to consider costs when determining compliance or implementing National Ambient Air Quality Standards. Why is this appropriate?

, the Clean Air Act allows states to consider costs in determining how best to meet the standards... It is important that costs be considered in how states choose to meet standards – but costs cannot be used as justification for state failure to meet EPA NAAQS.

This is similar to how a physician works in helping a patient who has a disease. For example, with my patients who have asthma, we develop a patient-specific plan to manage their disease. That plan recognizes the specific challenges that patient faces, including the costs of medication, and builds a specific approach to help best prevent them from having asthma attacks.

¹ Senate Committee on Public Works, *Legislative History of the Clean Air Act Amendments of 1970*, 93rd Congress 2nd Session. Washington, D.C.: U.S. Government Printing Office, 1974, p 277.

Allowing states to consider costs in how they meet standards provides states needed flexibility and efficiency to meet these standards. The types of air pollution and the sources of air pollution vary significantly between communities, so how states meet the health-based standards should also vary. Some states might be most successful reducing air pollution by focusing on point source emissions, while other states might be more successful with increasing energy conservation and efficiency, while a third state might adopt a mix of both approaches. The Clean Air Act was designed to give states the flexibility to develop the most effective and efficient pathway to meet their obligation under the Clean Air Act.

3. Are you concerned S. 263 would require the EPA to look at costs along with the health science when determining National Ambient Air Quality Standards – not just for ozone, but also for all criteria pollutants? If so, please explain.

Yes, I am concerned. The health-based standards have helped this nation reduce emissions from these dangerous pollutants since 1970. We have a critical responsibility to our families, our patients and our neighbors to tell them what the science says that these pollutants do to their bodies. That information must not be colored or diluted by some

The more we look into these pollutants the more dangers to human health we find. For example, new research summarized by the World Health Organization has found that particulate matter causes lung cancer². Other new research has found other possible health effects outside of the lungs and the heart. For example, pregnant women exposed to particulate matter may have newborns with low birthweight or born prematurely.³⁴

We have also learned through these reviews, that particulate matter and ozone can shorten life—can kill.^{5 6}

² Hamra GB, Guha N, Cohen A, Laden F, Raaschou-Nielsen O, Samet JM, Vineis P, Forastiere F, Saldiva P, Yorifuji T, and Loomis D. Outdoor particulate matter exposure and lung cancer: A systematic review and meta-analysis. *Environ Health Perspect.* 2014; 122: 906-911.

³ Ebisu K, Bell ML. Airborne PM_{2.5} chemical components and low birth weight in the Northeastern and Mid-Atlantic regions of the United States. *Environ Health Perspect.* 2012; 120: 1746-1752; <http://dx.doi.org/10.1289/ehp.1104763>

⁴ Laurent O, Hu J, Li L, et al. A statewide nested case-control study of preterm birth and air pollution by source and composition: California, 2001-2008. *Environ Health Perspect.* 2016; 124:1479-1486. Doi: 10.1289/ehp.1510133

⁵ Thurston GD, Ahn J, Cromar KR, Shao Y, Reynolds H, et al. Ambient particulate matter air pollution exposure and mortality in the NIH-AARP Diet and Health Cohort. *Environ Health Perspect.* 2016; 124:484-490; Lepeule J, Laden F, Douglas Dockery D, and 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.

⁶ 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; 177:184-189; Katsouyanni K, Samet JM, Anderson HR, Atkinson R, Le Tertre A, et al. *Air pollution and health: A European and North American approach (APHENA)*. Boston, MA: Health Effects Institute, 2009; Samoli E, Zanobetti A, Schwartz J, Atkinson R, Le Tertre A, et al. The temporal pattern of mortality responses to ambient ozone in the APHEA project. *J Epidemiol Community Health.* 2009; 63: 960-966; Stafoggia M, et al, 2010.

We need to use the research to develop a thoughtful assessment of what the standards need to be to protect pregnant women and their babies, and all Americans from such devastating harms.

As a physician, I am concerned that this legislation will delay progress, not only on dangerous ozone pollution, but will delay progress on other dangerous criteria pollutants covered under the Clean Air Act. First the legislation delays by 10 years state's obligation to meet the 2015 ozone National Ambient Air Quality Standard. Second, the bill changes from every 5 year to every 10 years, the interval EPA uses to review all criteria pollutants. That means we would wait 10 years to make any further progress to reduce exposure to dangerous pollutants like lead, ozone and particulate pollution.

The health impacts of delay are not trivial. In the 10-year review lag called for in this bill, a child will grow from a newborn to a 10-year old. In that time, the lungs, like the rest of the body, will see tremendous changes that will determine the life-long health prospects of that child. We know pre-natal and childhood exposure to air pollution adversely shapes the development of the lungs in ways that lead to adult disease. By delaying improvements in air quality, we are literally burdening our children with life-long health issues.

Lastly, the bill fundamentally rewrites the Clean Air Act by directing the EPA Administrator to consider factors unrelated to health when setting National Ambient Air Quality Standards. As the Clean Air Act clearly states, the EPA Administrator must set these standards to protect the public health, irrespective of estimated costs or assumed technological feasibility to clean it up. The Administrator does that following the careful review of the science. Fortunately, this approach has worked to clean up the nation's air for decades, and protects my patients' health. The requirement to set a health based standard has pushed the U.S. to develop new technology to clean up that pollution, creating jobs, saving money and lives. The current approach has been affirmed in the U.S. Supreme Court (*American Trucking v. EPA*) in a majority opinion written by the late Justice Scalia.

Senator CAPITO. Thanks to all of you.

We will begin questioning. I will begin first.

Senator CAPITO. Mr. Cabrera and Mr. Hakimi, both of your States, Arizona and California, have some similarities in your testimony. You used Yuma County and San Joaquin Valley as your examples. You stated no matter what you do or short of taking everyone off the road and ceasing any kind of industrial activity, you are still not going to meet the standards. Did I hear your testimony correctly?

Mr. CABRERA. In Yuma County, the effects on vehicles, which only the Federal Government can enact, that has not been studied. We are sure that there is not enough industry in Yuma County in order to bring us back to attainment.

Senator CAPITO. Mr. Hakimi.

Mr. HAKIMI. Madam Chair, yes, you are correct. We could move all the people out of the southern San Joaquin Valley and still not attain the current standard.

Senator CAPITO. In your discussions with the EPA, what sort of recommendations do they give you to try to meet the standards?

Mr. HAKIMI. They do not have any recommendations.

Senator CAPITO. Mr. Cabrera, they do not work with you to try to figure out alternative methods, give you some kind of longer timeline, or anything of that nature?

Mr. HAKIMI. We have the absolute longest timeline that is available to us but there is plenty of scientific evidence that background levels exceed the most current standards.

Mr. CABRERA. EPA's normal relief mechanisms, which I outlined in my testimony which include rural transport areas, exceptional events, or international transport, do not do the trick for Yuma County. Simply put, Yuma County could be punished for the pollutions that others create.

Senator CAPITO. Mr. Zeringue, you mentioned job losses and lost opportunities, lost tax dollars and so forth for not maybe making the next standard. What kind of punitive measures are out there?

My understanding is that your Federal transportation tax dollars are tied to your attainment and nonattainment. Can you speak to that?

Mr. CABRERA. I do not have direct knowledge on what funding mechanisms are going to support the Louisiana Department of Environmental Quality in their implementation.

Senator CAPITO. Let me go to Mr. Hakimi.

Mr. HAKIMI. I can comment on that, Madam Chairman. Former Congressman Bill Thomas is in the room. He was able to get our region in Kern County almost \$730 million. One of the consequences of not being in compliance or being a nonattainment area and having a lapse in attainment is our funds for transportation projects that increase capacity and reduce congestion in many cases are taken away.

We are working on many projects in my county and in our valley which would reduce congestion. Yet, those are the types of projects, in many cases, that we would lose our Federal funds for when we have a conformity lapse.

It is not if we have a conformity lapse in Kern County. If we maintain and stay on our current path, it is when we have a conformity lapse.

Senator CAPITO. In reference to the bills, in my opinion, it does not undermine the Clean Air Act; it does not throw out the 2008 or 2015 standards or otherwise erode those existing protections.

Mr. Garvin said that every 5 years this should be done and you have to make sure that EPA has the resources to do this. I would say that in the last 8 years, the EPA has had more than enough resources and they could not even get their regulations out for 8 years. You are already 3 years beyond the 5-year window at which we were supposed to be.

Simply by pushing the timelines and making them tighter, hopefully making EPA responsive to the timeline, it is going to give you all the chance to react and react in a more reasonable way.

The last thing I will say, before I turn to my Ranking Member, is this downwind issue we hear a lot on a lot of different pollutants. Not living in a downwind State but I guess I am living in an attainment State, as the Ranking Member reminded me, we have to find a way to help those downwind States really meet the challenges they have whether it is through certain allowances, I do not know. I hear this as a repeating theme that makes it impossible for compliance.

I think if we could all work together to find a way to help those States, work with either the surrounding States or the regulators to try to figure out a way to bring those numbers down, I think it would be useful for a lot of the panelists I have heard over the last several years.

Senator WHITEHOUSE.

Senator WHITEHOUSE. Senator Capito, I would be delighted to work with you on that. There is kind of a mismatch between upwind polluter States and downwind nonattainment States. Many of us have seen that requiring attainment closer to the source of the pollution has improved the quality of the air.

I think it is Director Garvin's testimony that shows very impressive results that have been achieved in many air pollution indices in the last decade as a result of this. As a result of that, Rhode Island is actually now in attainment, not because of anything that happened in our State but because of you all down in the Midwest. In the beautiful part of the Country, because there were controls put on the emissions that landed on Rhode Island.

What worries me is when you have pockets where there is a problem area where you cannot generate attainment because of your own emissions not being the problem. Then the solution to that isn't to address the problem in the pocket area, but to take a whack across the board at the entire regulation that, overall, has produced the extraordinary results Director Garvin indicated.

Just to be clear, Mr. Cabrera, you said the problem with this regime for your county is that is punishing the victims of pollution and not the polluters. Who are your polluters?

Mr. CABRERA. California, Mexico and some China.

Senator WHITEHOUSE. A wall would fix that pollution problem with Mexico, a big wall.

Mr. CABRERA. Not exactly, sir.

Senator WHITEHOUSE. Am I correct in looking at this legislation, Director Garvin, that while there are these pocket problems, which we were in for a while in Rhode Island where there was nothing we could have done to come into attainment within our borders, nevertheless, having these rules apply across the Country did produce a level of cleanup that actually brought us into attainment.

Overall, it has worked for us. Rhode Island is now in attainment. It is rare actually when you hear the bad air day warning as you are driving into work in the morning. It used to be fairly frequent. I am really glad to not be having to hear that any longer. It made me mad as hell that we had to have that happen.

In Delaware, you are another downwind State. Do you see it the same way?

Mr. GARVIN. Absolutely. Other than ozone, we are attaining in all of the other areas. Ozone is one of those places that we cannot control it within our State. We need support.

Senator WHITEHOUSE. The difference is it has worked for you because those national results have improved the conditions in the way that you described. It has not worked for the San Joaquin Valley and it has not worked for Yuma County, but it has worked for you?

Mr. GARVIN. That is correct.

Senator WHITEHOUSE. Dr. Kraft, first of all, thank you for your testimony. Thank you for your service as the head of the American Thoracic Society. You are in town now. I had the privilege of speaking at your gathering yesterday.

Dr. KRAFT. I saw you on the program.

Senator WHITEHOUSE. Here, we often see the industry coming in and saying, oh, boy, look how much it is going to cost us to clean up and this is a terrible cost. They never look at the other side of the ledger. They usually ignore it entirely. When they do not, they tend to understate it, call the claims dubious and so forth.

Can you kind of lay out the case for what the health benefits side of the ledger looks like in air quality?

Dr. KRAFT. Absolutely. I am certainly glad I am able to do that.

We are learning more and more about the effects of air quality in a number of arenas, especially with regard to lung disease, but also cardiovascular disease. I think that is a relatively newer finding. If you think about all of our citizens affected by one or both of those diseases, we are talking about a lot of people.

As I mentioned, it is also healthy people that can be affected as well. As a runner myself, I avoid high ozone days because of the health effects that I know to be apparent. I have actually experienced them and I do not have lung disease, for instance.

One of the worries I have on the air pollution side is take a case like asthma. Yes, we know that ozone can cause asthma attacks, COPD exacerbations, lead to hospitalizations and death, but I am worried that it can actually cause disease.

There is some more recent research suggesting that especially in someone who has allergies, this interaction of poor air quality, the particulates, the ozone with the allergens at a young age can actually affect the immune system and lead to the presentation of the disease.

If we think about a 10-year lag, that is worrisome to me because I think about those small children who are exposed at a very young age and have 10 years' worth of time to evolve. Usually, asthma presents itself early in life but then really becomes established by about five to 8 years of age.

I see a very detrimental situation there as well, certainly with the development of the disease. We are actually contributing to this increased asthma prevalence that we see.

Senator WHITEHOUSE. Thank you, Doctor.

My time has expired.

Senator CAPITO. Thank you.

Senator INHOFE.

Senator INHOFE. Thank you, Madam Chair.

I was Mayor of Tulsa when we were out of attainment so I lived through that and it was pretty difficult. When things changed for the better, the misery lags on for a long period of time.

There are two pieces of legislation from Senator Capito and Senator Flake, I am on both, I think, and both have one thing in common. That is the 10-year cycle as opposed to the 5-year cycle.

Mr. Cabrera, let us talk a bit about if you think that is a good idea and why do you think it is a good idea?

Mr. CABRERA. Madam Chair and members of the committee, the extension of time provides immediate relief to allow standards and controls that are already in place to, over time, reduce ozone concentrations. Having said that, an extension of time will not help Yuma County because they are not creating the pollution.

Senator INHOFE. Let us find somebody it would affect then. How about you, Mr. Hakimi?

Mr. HAKIMI. Madam Chair and Senator, yes, it would. As I said in my testimony, there are over 51 plans with which the eight counties in the San Joaquin Valley have to comply that literally takes millions of dollars away from concrete and steel.

By having new standards every 5 years, for us, that means we have to come up with a brand-new plan. It does not stop us from coming up with plans for all the previous plans. Currently, we are in non-compliance for 3 PM, 2.5 and 3 ozones. If we come up with another plan in 5 years, we will likely not be in compliance with that. That is eight times three more plans that we have to do.

We spend literally millions of dollars and months, if not years, demonstrating and doing computer modeling to try to show how we obtain these new standards.

Senator INHOFE. I have been here for a long time. I have chaired this committee for many years. Not a year goes by that there is not another idea and some of it might work. I think it was Senator Thune who last year was talking about until you take the 85 percent of those in nonattainment, you would not be able to have another standard. I do not know what happened to that except it never passed out of committee.

The EPA did not issue guidance to the States for the 2008 ozone standard until 7 years later. I would kind of like to know what kind of challenge does that make for you in terms of not having the guidance until 7 years after a standard is adopted? Do you have any comments about that, Mr. Zerinque?

Mr. ZERINQUE. I think the delay in the implementation guidelines certainly put us at a disadvantage. The proposed 2015 regulations and that lapse in time put undue burden, ambiguity and a certain level of risk on potential investment in our region. As a result, it cost us significant jobs and investment.

Senator INHOFE. I would think it would be very difficult. I do not know how you would do it without guidance. I cannot think of any justification for not doing the guidance right after that.

Mr. Zerinque, I would ask you the question because the EPA has indicated that counties in nonattainment will grow substantially under the 2015 ozone standard. The EPA modeling projects those counties would be in nonattainment only for a short period of time.

Even if it is for a short period of time, isn't that still a problem? Doesn't the problem linger on after that period of time?

Mr. ZERINQUE. I think the onset of those being in nonattainment presents a risk to companies that would look elsewhere for investment. I think the interesting thing is that the EPA, itself, identified in a webinar that they had completed in December 2014 that showed 14 of the U.S. counties would meet the new standard by 2025 with the rules and practices already in place.

Senator INHOFE. Yes, but if there is someone out there looking for relocation, they are going to look to see what the history is going to be because they would be moving into an area that could have the same problem we had in Sand Springs, Oklahoma when I was Mayor of Tulsa. The problems do not go away with it.

Mr. ZERINQUE. Correct.

Senator INHOFE. Thank you, Madam Chair.

Senator CAPITO. Thank you.

Senator CARPER.

Senator CARPER. Again, our thanks to each and every one of you. Thanks so much for joining us.

Dr. Kraft, I have a couple yes or no questions, if I could. Maybe we could review the basics.

In layman's terms, national ambient air quality standards, as I understand it, are health standards. The EPA reviews the latest health studies to determine what level of ozone in the air makes us sick. Is that correct or not?

Dr. KRAFT. Yes.

Senator CARPER. It is my understanding that EPA's own Scientific Review Board determined that 75 ppb, the 2008 ozone standard, was not strong enough to protect public health as early as 2007, is that correct?

Dr. KRAFT. Yes.

Senator CARPER. As a doctor and clinician, do you consider either treatment costs or efficacy before diagnosing a patient?

Dr. KRAFT. I think of both. I think they both go into the thought process but certainly efficacy is the first order of business in order to effectively treat a patient. There is always the consideration of cost as the reality of the medical care we can provide but efficacy would be first.

Senator CARPER. On similar ground, do you think it makes sense for the EPA to consider cost when establishing a health standard?

Dr. KRAFT. I think, first and foremost, is the health of our citizens and my patients, first. I think that cost can enter into it but

I think the priority needs to be, first, the health. Detrimental health can actually lead to increased cost as well. There are actually two sides to the financial aspect of it.

Senator CARPER. Do you think the public has a right to know the air pollution in the air might make them sick?

Dr. KRAFT. Absolutely. I think it is our obligation to inform them.

Senator CARPER. I just want to share something with my colleagues, you and the rest of the panel.

Last Wednesday, some of us like to work out and one of the things I do a couple days of the week is I run. I usually run at home in Delaware, catch a train in the morning and come on down here, like Joe Biden, who Shawn used to work for, who did the same thing.

Last Wednesday, I stayed here Tuesday night because of other obligations. I went out and ran on Wednesday morning. I like to run down to the Washington Monument and back. It is about five miles. You are a runner as I recall.

I did not feel good that day. I got back to the gym and somebody told me that one of our colleagues, Tom Tillis, had been running in a race. They said he collapsed and had to have CPR, but it was not true. He had to stop running and basically stooped down until he felt better.

I told my wife about it that night. She was in Delaware, and I think last Wednesday and Thursday, was in nonattainment for ozone. I thought, boy, that is strange because I frankly do not often feel that way. It was not all that hot but I just did not feel good.

I spoke with Senator Tillis yesterday when we were on the floor. I asked him about it. I sent him a text message to see how he was doing. I think he was running a 5K race. He is a good athlete and in good shape but he said his legs were stronger than his lungs. I found that kind of interesting. Could you tell us what might have been happening to our lungs that day?

Dr. KRAFT. Absolutely. Ozone can interact with our cells, so we breathe in and obviously when we are running, our respiratory rate increases, we have a lot of air movement in and out. Usually we breathe in and out about 5 liters a minute; when we are running, it is more like 15 liters a minute, so it is almost double or triple.

What can happen if there is a high concentration of ozone and also particulates is it can interact directly with the cells that line our lungs. They are very protective of these elements in the environment and can actually cause inflammation, redness and swelling, narrow the airways and also cause coughs, and sometimes wheeze.

As you saw, it can even occur when you do not have a history of lung disease. That can be very disconcerting, especially if you have never had this sensation before. The patients I take care of, unfortunately, have this happen a lot.

They have medications, but the medications do not always completely negate the effects. Yes, it can be a very significant reaction going on in the lungs.

Senator CARPER. Thank you.

One of our witnesses, I think it was the Colonel, Navy salutes Army. Thanks for your service. He talked about basically if they

shut down the economy, their State vehicles, plants, manufacturing, everything and still be out of compliance.

That reminds me a bit of where we were in Delaware a few years ago, doesn't it, Secretary Garvin?

Mr. GARVIN. Yes.

Senator CARPER. What did we do about it? We shut everything down, didn't we, and we were still out of compliance?

Mr. GARVIN. We shut everything down. We made a lot of investments in power plants, the Indian River Power Plant and a number of other places, and focused on multi-pollutants and counted on some of our surrounding States and nationally making investments as well.

As I said before, for ozone, it has been very beneficial but we still have the transport issue that we are not going to be able to address in our borders. One of the things we are talking about is if there is a reduction over kind of a broad range of areas, it is actually probably more beneficial to our State than having one facility which makes significant reductions.

We are looking to ensure that there is leadership throughout the Country to make sure everyone is doing what they need to do which will benefit our State.

Senator CARPER. Thank you.

Senator CAPITO. Thank you.

Senator MERKLEY.

Senator MERKLEY. Thank you, Madam Chair.

Mr. Garvin, are the top two sources of ground level ozone transportation and power production?

Mr. GARVIN. Yes.

Senator MERKLEY. As we see in the transportation world, people are driving higher mileage vehicles or plug-in vehicles. Are we seeing a reduction in the ozone generated?

Mr. GARVIN. We have been, but in our State, we have also shown that even with a significant reduction in that area, transport is still going to keep us from getting to where we need to go.

Senator MERKLEY. I am just trying to get a sense as we are seeing the auto industry evolve, whether that is helping us make this more achievable.

Mr. GARVIN. Yes, absolutely.

Senator MERKLEY. Also in terms of burning, coal-fired power plants are being replaced in substantial amounts by gas-powered and also by renewable. Is that also reducing the amount of ozone being generated?

Mr. GARVIN. Yes.

Senator MERKLEY. Those factors alone do not drive us to the point we need to get to. The existing trends do not drive us toward the goal being laid out by the EPA?

Mr. GARVIN. That is correct.

Senator MERKLEY. Additionally, what would be the most cost effective things a community could look to, is it a faster reduction or change in power production, a change in the cars people drive, is it trucking or particular types of industries that generate a lot of the precursors that form ozone? What is the best bang for the buck to address this problem?

Mr. GARVIN. I think it is across the board. I think there is some simple stuff that is available now that we are not taking advantage of. We have some facilities upwind of Delaware which have control technologies on their plants but do not run them all the time which impacts us.

They run them at peak times and at various times but if they ran them consistently, things that already in place, that would have a big advantage to us.

Senator MERKLEY. That is one. Are there other most cost effective things that top the list? Counties and States are looking at what can we do and are concerned about the cost. I am trying to get a common sense of the things we really need to work on to make a difference.

Mr. GARVIN. Clearly renewable energy, investments in renewables, investments in more efficient vehicles that are using renewable energy, focusing on light duty trucks and cars and reducing the emissions coming from them, having that come online faster and not being pushed off longer would be beneficial.

Senator MERKLEY. The EPA is looking at the question of changing the automobile efficiency standards and also possibly taking away the waiver for the California standards. Would that take us in the wrong direction in terms of ozone production?

Mr. GARVIN. Absolutely.

Senator MERKLEY. Similarly, in terms of slowing down the transition to renewable energy?

Mr. GARVIN. Yes.

Senator MERKLEY. Dr. Kraft, you are immersed in the medical side of this. Is there a point in terms of reducing the ground level ozone at which essentially the health benefits tend to flatten out as a curve? Where are we at that point? Are we still at a point where significant changes in ground level ozone creates significant health benefits and therefore, medical savings?

Dr. KRAFT. Right now we are talking about a movement of 75 ppb to 70 ppb. The American Thoracic Society recommends consideration of 60 ppb. That really comes from the research being done from many of our own members, both in people as well as animal models and so forth to really understand how low do we need to go.

Even at 60 ppb, it is not perfect. I think there are still health effects even at 60 ppb because you can imagine a population, we are very heterogeneous, so those of us who have lung disease, very low concentrations of ozone are going to cause problems or particulates.

Therefore, it actually is difficult to give you a threshold. I think of some of my patients with more severe disease whereas others who are healthier may be able to tolerate higher levels. I would say we still have a way to go for the population as a whole.

Senator MERKLEY. Thank you.

Senator CAPITO. Senator Duckworth.

Senator DUCKWORTH. Thank you.

As a mother, I believe that safeguarding communities against public health issues like smog and pollution must remain a top priority. I was actually participating in that run with Senator Tillis. I was in the wheelchair division. It was actually my Deputy Chief

of Staff who called 911 and my staff watched while he received CPR.

It is frightening but there was another runner who collapsed during that run and also needed CPR. There were two people who needed CPR on what was a really beautiful day.

I am really concerned that efforts to reconsider regulations like the ozone standard could make it harder, not easier, for industry to do its job.

My concern is compounded by the fact that the current Administration's budget cuts 30 percent of the EPA's budget and that millions of Americans with preexisting conditions may face higher health care costs if Trump Care passed in the Senate.

This question is for Dr. Kraft. Can you please share with us the health benefits associated with the ozone standard and whether you consider asthma to be a preexisting condition?

Dr. KRAFT. We know that any severe lung disease, it does not have to be severe, mild to moderate when we talk about asthma or COPD, is affected by ozone levels, especially the levels we are talking about, 70 ppb, as we saw, 75 ppb, even 60 ppb.

As I mentioned, the lower we can go, obviously the better for health overall of the population. I think that certainly is a concern.

I spoke earlier about the concern I have about the development of disease, that air pollution and ozone in particular, can actually interact with allergens and actually cause asthma. That is a real concern for me.

I think many of us think of asthma as something that is mild and not a real problem. We probably all know someone with asthma, if we do not have it ourselves. There is actually a substantial fraction of the population which has pretty severe disease with morbidity and sometimes mortality.

I tend to take care of the more severe segment of that population and can tell you, it can be a very serious disease.

Senator DUCKWORTH. It is. Indeed, it was very frightening to see and hear of someone like our colleague, who is incredibly fit, Senator Tillis, to be passed out on the ground receiving CPR. I saw the second runner who had also passed out on the ground and received CPR. It is deeply concerning.

Efforts to delay, weaken or eliminate the ozone standard are justified by supporters as necessary to save money. However, there are expenses associated with taking care of sick kids. Dr. Kraft and Mr. Garvin, can you please share your thoughts on who would save money if the ozone standard is weakened and who would bear the cost of that profit? What are the costs of asthma to our economy?

Dr. KRAFT. I can speak to the cost on the health care side. I gave an example for the State of Arizona where I live. There are about 30,000 to 35,000 emergency department acute visits every year for asthma. The prevalence is actually higher than in the rest of the U.S.

There are probably a couple reasons for that. Sometimes people with asthma come to Arizona because they think it will get better with the dry air but we have changed our environment actually quite a bit. I live in Tucson. We have a year-round blooming season now because we have all these plants.

In Phoenix, there is a serious air quality problem, both ozone and particulates. Phoenix is ranked in the top 25 of the worst cities for both those categories. I worry a lot about that and the dust. The cost to the State of Arizona alone is \$1 billion annually.

Senator DUCKWORTH. Mr. Garvin.

Mr. GARVIN. Yes, Senator. The cost goes to a lot throughout the economy. You have lost school days and lost work days. We are dealing with a close to \$400 million shortfall in the State of Delaware. One of the largest costs that we have is health care costs in the State Government.

When you have a population that is facing pollution that causes health issues, there is a cost to not only government but to businesses, plus the other side of it which is the investments in addressing this pollution which actually helps to stimulate the economy.

If you look at a lot of the pollution control systems with air and water, they came out of setting standards on what was good for health. The private sector and academic institutions found the ways to meet those standards which was stimulated the economy.

There are benefits while you are protecting the health and also how it has a positive impact on the economy.

Senator DUCKWORTH. Do you support the 30 percent to the EPA's budget? How would affect the ability of State and local entities to do their jobs?

Mr. GARVIN. It will have a very significant impact. I speak on behalf of my State. I was actually handed something on my way in that showed me what the number was. We kind of heard what it might be. A lot of those are State implementation grants which help to support the States in discharging the delegation responsibilities we have from the Federal Government.

If the budget is passed the way it is, it could have dramatic impacts on our ability in the State of Delaware to protect human health and the environment.

Senator DUCKWORTH. Thank you.

I am out of time. I yield back.

Senator CAPITO. Thank you.

I want to thank all the witnesses for their testimony. I think that concludes our questions.

The record will remain open for 2 weeks for members to submit any followup questions to the witnesses. I would ask if you could reply in a timely manner.

This concludes our subcommittee hearing. Thank you.

[Whereupon, at 3:56 p.m., the subcommittee was adjourned.]

[Additional material submitted for the record follows.]



The Honorable Shelly Moore Capito
U.S. Senate Committee on Environment
and Public Works
Chairwoman, Subcommittee on Clean Air
and Nuclear Safety
410 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Sheldon Whitehouse
U.S. Senate Committee on Environment
and Public Works
Ranking Member, Subcommittee on Clean Air
and Nuclear Safety
530 Hart Senate Office Building
Washington, DC 20510

Connecticut

The Honorable John Shimkus
U.S. House of Representatives
Committee on Energy and Commerce
Chairman, Subcommittee on Environment
2125 Rayburn House Office Building
Washington, DC 20515-6115

The Honorable Paul Tonko
U.S. House of Representatives
Committee on Energy and Commerce
Ranking Member, Subcommittee on
Environment
2463 Rayburn House Office Building
Washington, DC 20515-6115

Delaware

District of Columbia

Maine

Dear Chairpersons Capito and Shimkus and Ranking Members Whitehouse and Tonko:

Maryland

We write as Chair and Vice Chair of the Ozone Transport Commission (OTC) to express our opposition to H.R. 806 and S. 263, the Ozone Standards Implementation Act of 2017, as well as S. 452, Ozone Regulatory Delay and Extension of Assessment Length Act. If enacted, these bills could substantially harm public health by delaying the implementation of EPA's health-based ozone standard. We enclose a resolution approved by the OTC at its June 6, 2017 Spring Meeting expressing the OTC's opposition to these proposed bills.

Massachusetts

New Hampshire

New Jersey

The OTC, composed of twelve states and the District of Columbia, was established in the 1990 Clean Air Act Amendments to develop and implement regional approaches to reducing ozone levels. Our collaborative efforts-- under both Republican and Democratic Administrations--led to over twenty-five years of regional collaboration with clear positive impacts to our residents. Based on our ample experience addressing ozone attainment challenges, the proposed legislation would deprive Americans of the additional public health protection provided by EPA's 2015 ozone standard.

New York

Pennsylvania

Our experience is that the important public health benefits of reduced ozone levels can be achieved through a combination of local and regional control measures, motor vehicle emission standards, and the Environmental Protection Agency's (EPA's) enforcement of the Clean Air Act's good neighbor provisions, which address interstate transport of ozone pollution. Through these measures, we have reduced ozone levels substantially in our region over the past quarter century, providing extremely significant public health benefits to our residents.

Rhode Island

Vermont

Virginia

We believe strongly that protecting our public from the public health harms of ozone pollution is paramount.

David C. Foerter
Executive Director

Thank you for considering our views.

Sincerely,

Jared Snyder
OTC Chair

444 N. Capitol St. NW
Suite 322
Washington, DC 20001
(202) 508-3840
FAX: (202) 508-3841
Email: ozone@otc.org

Ben H. Grumbles
OTC Vice-Chair

Cc: Scott Pruitt, EPA Administrator



RESOLUTION ON TIMELY IMPLEMENTATION OF THE 2015 NATIONAL AMBIENT AIR QUALITY STANDARD FOR OZONE

Whereas, the Ozone Transport Commission (OTC), a multi-state organization created under the Clean Air Act (CAA), is required to advise the United States Environmental Protection Agency (EPA) on practical and cost effective strategies or measures, based on sound science, aimed to address the environmental and health problems associated with ground-level ozone transport that negatively impact the Northeast and Mid-Atlantic regions; and

Connecticut

Whereas, ozone is a significant health threat and oxides of nitrogen (NOx) and volatile organic compounds (VOCs) are precursors to the creation of ground-level ozone. Ozone is known to cause respiratory illnesses, exacerbate asthma-related episodes, compromise immune systems, and cause premature death, while NOx can also lead to adverse respiratory health effects and VOCs can irritate the eyes, nose, and throat, cause headaches and nausea, damage internal organs, or cause cancer; and

Delaware

District of Columbia

Maine

Whereas, EPA's new ozone National Ambient Air Quality Standard (NAAQS), adopted in October 2015, is expected to provide important public health benefits in the Ozone Transport Region (OTR) and across the United States; and

Maryland

Massachusetts

Whereas, the latest peer-reviewed scientific evidence has demonstrated that the previous ozone NAAQS adopted in March 2008 is not adequately protective of human health and the environment; and

New Hampshire

New Jersey

Whereas, implementation of the 2015 ozone NAAQS will require emission reductions both within and upwind of the OTR, reducing the interstate transport of ozone that contributes to ozone nonattainment in much of the OTR; and

New York

Pennsylvania

Whereas, OTC research shows that regional NOx reductions are the key to continued progress on reducing ozone across the East; and

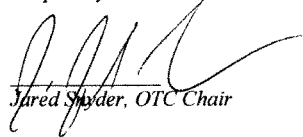
Rhode Island

Whereas, new regional NOx reductions, including the Tier 3 clean fuel requirements,

Whereas, protecting our public from the public health harms of ozone pollution is paramount and we are on the verge of making significant additional progress on ground level ozone;

Therefore, it is resolved that the OTC opposes enactment of the Ozone Standards Implementation Act and the ORDEAL Act.

Adopted by the Commission on June 6, 2017

A handwritten signature in black ink, appearing to read 'J. Snyder', is written over a horizontal line.

Jared Snyder, OTC Chair



**American
Forest & Paper
Association**



AMERICAN WOOD COUNCIL

**Statement for the Record
American Forest & Paper Association and
American Wood Council**

**Senate Committee on Environment & Public Works
Making Implementation of the National Ambient Air Quality Standards for
Ground-Level Ozone Attainable: Legislative Hearing on S. 263 and S. 452
May 23, 2017**

Introduction

The American Forest & Paper Association (AF&PA) serves to advance a sustainable U.S. pulp, paper, packaging, tissue and wood products manufacturing industry through fact-based public policy and marketplace advocacy. AF&PA member companies make products essential for everyday life from renewable and recyclable resources and are committed to continuous improvement through the industry's sustainability initiative - *Better Practices, Better Planet 2020*. The forest products industry accounts for approximately 4 percent of the total U.S. manufacturing GDP, manufactures over \$200 billion in products annually, and employs approximately 900,000 men and women. The industry meets a payroll of approximately \$50 billion annually and is among the top 10 manufacturing sector employers in 45 states.

AF&PA's sustainability initiative - *Better Practices, Better Planet 2020* - is the latest example of our members' proactive commitment to the long-term success of our industry, our communities and our environment. We have long been responsible stewards of our planet's resources. Our member companies have collectively made significant progress in each of the following goals, which comprise one of the most extensive quantifiable sets of sustainability goals for a U.S. manufacturing industry: increasing paper recovery for recycling; improving energy efficiency; reducing greenhouse gas emissions; promoting sustainable forestry practices; improving workplace safety; and reducing water use.

The American Wood Council (AWC) is the voice of North American wood products manufacturing, representing over 75 percent of an industry that provides approximately 400,000 men and women in the United States with family-wage jobs. AWC members make products that are essential to everyday life from a renewable resource that absorbs and sequesters carbon. Staff experts develop state-of-the-art engineering data, technology, and standards for wood products to assure their safe and efficient design, as well as provide information on wood design, green building, and environmental regulations. AWC also advocates for balanced government policies that affect wood products.

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Background

Under the Clean Air Act, EPA must update its assessment of the latest science and consider *whether* any changes are needed to National Ambient Air Quality Standards (NAAQS) at least every five years. EPA missed its five-year review deadline for the ozone NAAQS in 2013 and was sued by environmental groups. Under a court order, EPA first proposed a rule on December 17, 2014 and then, after a brief comment period, signed the final rule on October 1, 2015 (subsequently published in the Federal Register on October 26, 2015) -- a very accelerated pace for a rule of this complexity and importance to the nation.

In addition, EPA recently tightened other NAAQS for particulate matter (PM), sulfur dioxide, and nitrogen oxides. Traditionally, the focus of the air permitting program has been on states developing plans to improve air quality in nonattainment areas (usually cities) to meet the NAAQS. However, since the NAAQS are effective immediately, facilities contemplating expansions or modifications that trigger a permitting review must demonstrate that emissions from the facility when combined with background air quality do not exceed the applicable NAAQS standard in order to obtain a permit. The inability to permit a project hurts the competitiveness of the facility, harms product development and innovation, and can thwart environmentally beneficial projects. Local communities will miss out on new jobs and economic growth while industry sectors face the risk of becoming uncompetitive in the global marketplace.

S. 263 and S. 452, legislation introduced this year in the Senate, set a 10-year implementation schedule for the 2015 ozone NAAQS and adjusts the NAAQS review cycle to 10 years for future NAAQS. S. 263 also requires EPA to issue implementation guidance concurrent with any NAAQS revision and provides other important permitting relief.

Position

AF&PA and AWC support both bills as a means to correct some of the flaws in the current Clean Air Act while still protecting public health. We support revising the 2015 ozone standard's implementation schedule to provide states time to complete work on implementing the 2008 ozone standard, which was delayed by EPA actions. This will allow air quality improvements to continue without unnecessarily draining administrative and economic resources in states.

Nitrogen oxide (NOx) and volatile organic compound (VOC) emissions, precursors to ozone formation, continue to decline from pulp, paper and wood product mills, and recent regulations like Industrial Boiler Maximum Achievable Control Technology (MACT) will have an added effect. NOx emissions already are down by almost 30% from 2000 to 2014 at pulp and paper mills. In fact, EPA's own data shows that by 2025 the number of non-attainment counties would decrease from almost 1,000 if designation were made under the current schedule to almost none (except California) with the new 70 ppb standard. The paper and wood products industry already has invested billions of dollars to help make our air clearer while making products

essential for everyday life, so imposing further significant costs without an apparent need is unwarranted.

Another key aspect of the legislation is to establish a more realistic review cycle for all future NAAQS. The short five-year "review cycles" for ozone and other air quality standards lead to overlapping regulations. Constantly moving the air quality goal posts also creates significant business uncertainty when industry is trying to compete in a global marketplace. These five-year deadlines are regularly exceeded by EPA and inevitably result in "sue-and-settle" agreements as occurred recently with ozone and particulate matter. The legislation would set more feasible schedules for reviewing air standards by EPA that allow for a more deliberate examination of the science and credit for ongoing environmental improvements while bringing more certainty to regulators and the regulated community.

Finally, as NAAQS dropped closer to background levels, it is becoming more difficult to get an approved permit. The decline of permit submittals to states is a strong indication of this growing problem. Mills seeking to build or expand major facilities in attainment areas must first secure Prevention of Significant Deterioration (PSD) permits, which require submitting to states or EPA modeling showing that a project will not exceed an air standard. While areas won't be designated under the 2015 ozone standard for a few years, the 2015 ozone standard immediately applies to PSD permits. This outcome leaves businesses in such areas in limbo. S. 263 addresses this unfairness by tying PSD permitting requirements to nonattainment designations in 2025 allowing investments to proceed in the meantime. The bill prevents permits both in and out of non-attainment areas from being caught up in red tape for the next decade.

Conclusion

Given improving air quality and the potential disruptive effects of rushing implementation of the 2015 ozone NAAQS, AF&PA and AWC recommend that the committee formally consider and approve S. 263 and S. 452, and move both quickly to the full Senate.

For additional information, please contact:

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ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY *San. Flake*
Additional



Misael Cabrera
Director

June 7, 2017

The Honorable Jeff Flake
United States Senate
Senate Russell Office Building 413
Washington, D.C. 20510

Re: Additional Information – May 23, 2017 Senate Environment and Public Works, Clean
Air and Nuclear Safety Subcommittee - Federal Ozone Standard

Dear Senator Flake:

I am writing today to share additional information related to the Senate Environment and Public Works, Clean Air and Nuclear Safety Subcommittee meeting convened on May 23, 2017, to discuss S. 263 – Ozone Standards Implementation Act and S. 452 - Ozone Regulatory Delay and Extension of Assessment Length (ORDEAL) Act. During testimony to the Subcommittee, other witnesses cited the impact of ozone on children's health as a primary basis upon which a decision to maintain the new standard and implementation schedule should be made. Upon reflection, we believe that contemplation of all aspects in which children live must be considered in establishing environmental regulations, including the federal ozone standard.

There is a robust and well documented relationship between socioeconomic status and children's physical and mental health. The enclosure cites just a few of the many studies documenting this relationship. Poverty detracts from resources used to maintain children's health; resources like proper nutrition and quality health care. With this strong correlation between poverty and children's health in mind, it is imperative to consider poverty induced health impacts; as well as, air quality health impacts when considering new regulations.

I will illustrate this concept by relating it to Yuma County. As you are well aware, Yuma is an area that faces significant economic challenges, including a 16.3% unemployment rate¹ and 20.7% poverty rate². If implemented, the new ozone standard and implementation rules would keep Yuma in perpetual ozone non-attainment, effectively chilling existing and future economic development for pollution that Yuma-area businesses did not create.

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Recent sampling data suggests that the vast majority of ozone contamination is generated from ozone precursors emitted in California, international sources and from transient vehicle sources using the interstate highway system. The Arizona Department of Environmental Quality (ADEQ) does not have authority to regulate the ozone creating sources in other nations or states. In addition, only the federal government and California have authority to set manufacturer tailpipe emissions standards for vehicles. Thus, ADEQ would be forced to apply extremely onerous restrictions on the very small number of industrial sources in the Yuma area in order to create a State Implementation Plan that would meet EPA requirements. These onerous restrictions certainly make a nonattainment area undesirable for new large businesses or may cause existing businesses to reduce staffing levels or shut down completely, potentially causing further economic hardship for families living in the area.

Given these factors, I again urge Congress to consider both poverty-induced health impacts as well as air quality health impacts when considering S. 263 – Ozone Standards Implementation Act and S. 452 - Ozone Regulatory Delay and Extension of Assessment Length (ORDEAL) Act.

Sincerely,



Misael Cabrera, P.E.
Director

Enclosure (Studies Showing the Impact of Poverty on Children's Health)

¹ United States Department of Labor, Bureau of Labor Statistics, Preliminary April 2017 data

² United States Census Bureau, Selected Economic Characteristics, 2011-2015 American Community Survey 5-Year Estimates

Studies Showing the Impact of Poverty on Children's Health

1. AAP Council on Community Pediatrics. (2016). Poverty and Child Health in the United States. *Pediatrics*, 137(4). doi:10.1542/peds.2016-0339
<http://pediatrics.aappublications.org/content/pediatrics/early/2016/03/07/peds.2016-0339.full.pdf>
2. Aber, L., Morris, P., Raver, C., Tsoi-A-Fatt Bryant, R., Haskins, R., & Garcia, E. (2012). *Children, Families and Poverty Definitions, Trends, Emerging Science and Implications for Policy* (3rd ed., Vol. 26, Publication). Retrieved June 2, 2017, from <http://www.clasp.org/documents/SRCD-Social-Policy-Report-2012.pdf>
3. Dreyer, B., MD, Chung, P. J., MD, MS, Szilagyi, P., MD, MPH, & Wong, S., MD, MSPH. (2016). Child Poverty in the United States Today: Introduction and Executive Summary. *Academic Pediatrics*, (16), 1-5. Retrieved from [http://www.academicpediatricsjournal.net/article/S1876-2859\(16\)00067-X/pdf](http://www.academicpediatricsjournal.net/article/S1876-2859(16)00067-X/pdf)
4. Ekono, M., Jiang, Y., & Smith, S. (2016). *Young Children in Deep Poverty* (Fact Sheet). Retrieved June 2, 2017, from http://www.nccp.org/publications/pdf/text_1133.pdf
5. Gupta, R., MSc, De Wit, M. L., PhD, & McKeown, D., MDCM, MHSc FRCPC. (2007). 6. The Impact of Poverty on the Current and Future Health Status of Children. *Pediatric Child Health*. 12(8), 667-672. Retrieved June 2, 2017, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2528796/>.
6. Keet, C. A., MD, PhD, McCormack, M. C., MD, Pollack, C. E., MD, MHS, Peng, R. D., PhD, McGowan, E., MD, & Matsui, E. C., MD, MHS. (2015) Neighborhood poverty, urban residence, race/ethnicity, and asthma: Rethinking the inner-city asthma epidemic. *The Journal of Allergy and Clinical Immunology*, 135(3), 655-662. doi: <http://dx.doi.org/10.1016/j.jaci.2014.11.022>. Retrieved June 2, 2017 from [http://www.jacionline.org/article/S0091-6749\(14\)01676-5/abstract](http://www.jacionline.org/article/S0091-6749(14)01676-5/abstract):
"Although it has long been thought that the prevalence of asthma is high among children living in poor urban neighborhoods in the United States, the prevalence of asthma in these neighborhoods throughout the United States has, surprisingly, not been described. Moreover, the relative contribution of race/ethnicity and household poverty versus other contextual neighborhood-level factors to asthma disparities related to the inner city remains unclear. Here we show that although some inner-city areas have high rates of asthma, particularly in the Midwest and Northeast, other nonurban poor areas have equal or higher asthma prevalence. Overall, black race, Puerto Rican ethnicity, and poverty rather than residence in an urban area *per se* are the major risk factors for prevalent asthma. These findings suggest that the concept of inner-city asthma might need to be refined."

7. Martinez-Briseno, D., Fernandez-Plata, R., Gochicoa-Rangel, L., Torre-Bouscoulet, L., Rojas-Martinez, R., Mendoza-Alvarado, L., Garcia-Sancho, C., Perez-Padilla, R. (2015). Socioeconomic Status and Longitudinal Lung Function of Healthy Mexican Children. *PLOS*. doi:<https://doi.org/10.1371/journal.pone.0136935> Retrieved June 2, 2017 from <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0136935> “Higher parental schooling and higher monthly family income were associated with higher lung function in healthy Mexican children, with the majority of the effect likely due to the increase in height-for-age.”
8. National Scientific Council on the Developing Child. (2014). *Excessive Stress Disrupts the Architecture of the Developing Brain: Working Paper 3* (Working paper). Retrieved June 2, 2017, from http://developingchild.harvard.edu/wp-content/uploads/2005/05/Stress_Disrupts_Architecture_Developing_Brain-1.pdf
9. Quinn, K., Kaufman, J. S., Siddiqi, A., & Yeatts, K. B. (2010). Stress and the City: Housing Stressors are Associated with Respiratory Health among Low Socioeconomic Status Chicago Children. *Journal of Urban Health : Bulletin of the New York Academy of Medicine*, 87(4), 688–702. <http://doi.org/10.1007/s11524-010-9465-1>. Retrieved June 2, 2017 from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2900574/>
10. Seith, D., & Isakson, E. (2011). *Who Are America's Poor Children? Examining Health Disparities Among Children in the United States* (Report). Retrieved June 2, 2017, from http://www.nccp.org/publications/pdf/text_995.pdf “We find evidence of disparities between poor and nonpoor children within each of these five domains. These findings are consistent with two longstanding conclusions within the field of public health. First, “the relationship between socioeconomic status and health is one of the most robust and well documented findings in social science.”² Second, this relationship is reciprocal, as poverty detracts from resources used to maintain health, while poor health detracts from the educational and employment paths to income mobility.³”
11. Yoshikawa, H., Aber, J., & Beardslee, W. (2012). The Effects of Poverty on the Mental, Emotional, and Behavioral Health of Children and Youth Implications for Prevention. *American Psychologist*, 64(4), 272-284. doi:10.1037/a0028015 https://www.researchgate.net/publication/224956205_The_Effects_of_Poverty_on_the_Mental_Emotional_and_Behavioral_Health_of_Children_and_Youth_Implications_for_Prevention