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EXAMINING EPA'S REGULATORY OVERREACH

HEARING

BEFORE THE

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
HOUSE OF REPRESENTATIVES

ONE HUNDRED FOURTEENTH CONGRESS

FIRST SESSION

July 9, 2015

Serial No. 114–29

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EXAMINING EPA'S REGULATORY OVERREACH

THURSDAY, JULY 9, 2015

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY,
Washington, D.C.

The Committee met, pursuant to call, at 10:04 a.m., in Room 2318 of the Rayburn House Office Building, Hon. Lamar Smith [Chairman of the Committee] presiding.

LAMAR S. SMITH, Texas
CHAIRMAN

EDDIE BERNICE JOHNSON, Texas
RANKING MEMBER

Congress of the United States
House of Representatives
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
2321 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-6301
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Full Committee

Examining EPA's Regulatory Overreach

Thursday, July 9, 2015
10:00 a.m. – 12:00 p.m.
2318 Rayburn House Office Building

Witness

The Honorable Gina McCarthy, Administrator, Environmental Protection Agency

U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

HEARING CHARTER

Examining EPA Regulatory Overreach

Thursday, July 9, 2015
10:00 a.m. – 12:00 p.m.
2318 Rayburn House Office Building

PURPOSE

The Committee on Science, Space, and Technology will hold a hearing entitled *Examining EPA Regulatory Overreach* on Thursday, July 9, 2015, in Room 2318 of the Rayburn House Office Building. The hearing will examine the U.S. Environmental Protection Agency's (EPA) recent regulatory agenda, the scientific and technical justification for these regulations, and these regulations' impacts on the American people.

WITNESS LIST

- **Hon. Gina McCarthy**, Administrator, U.S. Environmental Protection Agency

BACKGROUND

The EPA has recently proposed and finalized numerous regulations that will have significant impacts on the American people and businesses. Administrator McCarthy will testify about EPA's regulatory agenda.

On June 2, 2014, EPA proposed the Clean Power Plan with the intent of regulating carbon emissions from existing source electricity generating units.[1] Under Section 111(d) of the Clean Air Act, EPA proposes that states formulate implementation plans to limit carbon emissions.[2] The Clean Power Plan would require states to meet requirements for carbon emissions from electricity generating units.[3] EPA proposes that states meet these requirements through four building blocks: improving the efficiency of coal steam electric generating units on an average of six percent, using combined cycle natural gas units up to a 70 percent capacity factor, constructing more zero and low-emitting power sources, and implementing energy efficiency measures to limit annual electricity demand by 1.5 percent annually.[4] The final rule for the Clean Power Plan is anticipated to be submitted this summer.

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[1] Clean Power Plan Proposed Rule, U.S. EPA, *available at* http://www2.epa.gov/carbon-pollution-standards/clean-power-plan-proposed-rule.
[2] Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34,830 (June 18, 2014), *available at* http://www.gpo.gov/fdsys/pkg/FR-2014-06-18/pdf/2014-13726.pdf.
[3] U.S. EPA, EPA Fact Sheet: Clean Power Plan National Framework for States, *available at* http://www2.epa.gov/sites/production/files/2014-05/documents/20140602fs-setting-goals.pdf.
[4] *Id.*

The scope and manner in which the rule has been conceived by the agency has been met with considerable opposition from many states and other stakeholders.[5] Recently, the U.S. Energy Information Administration (EIA) produced a report at the request of Chairman Smith that found that EPA's Clean Power Plan would force the retirement of a significant number of coal-fired power plants, increase electricity prices, and decrease American GDP.[6] On June 24, 2015, the Subcommittees on Environment and Energy held a hearing examining the impacts of the Clean Power Plan as reported by the EIA.[7] Additionally, on September 14, 2014, the Committee heard testimony from former Assistant Secretary for Fossil Energy Charles D. McConnell regarding the legal and technical shortcomings of EPA's proposed Clean Power Plan rule.[8]

On November 25, 2014, the agency proposed a rule for ozone NAAQS, which would considerably tighten the ozone standard.[9] EPA's proposed ozone rule would set more stringent standards, lowering the standard from the current 75 parts per billion (ppb) to a range of 65 to 70 ppb.[10] EPA's own regulatory impact analysis reports that this rule would cost up to $15 billion annually.[11] However, stakeholder groups have found that EPA's analysis vastly underestimates the costs and believe that this rule could be the most expensive ever enacted by the agency.[12] The Clean Air Act requires EPA to review the NAAQS every five years. EPA is proposing new standards based on the advice of the Clean Air Scientific Advisory Committee.[13] On March 17 and April 29, 2015, the Committee undertook a two-part series of hearings to examine the broad-based impacts of the proposed ozone NAAQS rule.[14]

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[5] U.S. Chamber of Commerce, Comments on Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generation Units, Dec. 1, 2014, *available at* https://www.uschamber.com/sites/default/files/12.1.14-_comments_to_epa_on_proposed_carbon_emission_standards_for_existing_power_plants_clean_power_plan.pdf; Comment From the Attorneys General of the States of Okla., W. Va., Neb., Ala., Fla., Ga., Ind., Kan., La., Mich., Mont., N.D., Ohio, S.C., S.D., Utah, Wyo. on Proposed EPA Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Generating Units *available at* http://www.ok.gov/oag/documents/EPA%20Comment%20Letter%20111d%2011-24-2014.pdf.

[6] U.S. Energy Information Administration, Analysis of the Impacts of the Clean Power Plan, May 2015, *available at* http://www.eia.gov/analysis/requests/powerplants/cleanplan/pdf/powerplant.pdf.

[7] For more information on this hearing, see: http://science.house.gov/hearing/subcommittee-environment-and-subcommittee-energy-us-energy-information-administration-report

[8] For more information on this hearing, see: http://science.house.gov/hearing/full-committee-hearing-epa-s-carbon-plan-failure-design.

[9] Proposed Rule for National Ambient Air Quality Standards for Ozone, U.S. EPA, *available at* http://www.epa.gov/airquality/ozonepollution/pdfs/20141125proposal.pdf.

[10] Nat'l Ambient Air Quality Standards, 79 Fed. Reg. 75,234 (proposed Dec. 17, 2014) (to be codified at 40 C.F.R. pts. 50, 51, 52, et. Al.) *available at* http://www.gpo.gov/fdsys/pkg/FR-2014-12-17/pdf/2014-28674.pdf.

[11] U.S. EPA, EPA's Proposal to Update the Air Quality Standards for Ground-Level Ozone, By the Numbers, *available at* http://www.epa.gov/groundlevelozone/pdfs/20141125fs-numbers.pdf.

[12] Nat'l Assoc. of Manufacturers, Economic Impacts of a 65 ppb National Ambient Air Quality Standard for Ozone, Feb. 2015, *available at* http://www.nam.org/Issues/Energy-and-Environment/Ozone/Economic-Impacts-of-a-65-ppb-NAAQS-for-Ozone-(NERA).pdf.

[13] *Id.*

[14] For more information on these hearings, see: http://science.house.gov/hearing/full-committee-hearing-reality-check-impact-and-achievability-epa-s-proposed-ozone-standards and http://science.house.gov/hearing/subcommittee-environment-hearing-reality-check-part-ii-impact-epa-s-proposed-ozone-standards

On May 27, 2015, EPA released the final rule expanding the definition of the "Waters of the United States" under the Clean Water Act.[15] While the agency clarified certain aspects of the rule, the final definition represents a tremendous expansion of EPA jurisdiction with regard to the Clean Water Act. While EPA's final rule does not regulate ditches to the same extent in the proposed rule, it does clearly define Clean Water Act jurisdiction over tributaries to traditionally navigable waters, waters adjacent to jurisdictional waters within a minimum of 100 feet within the 100-year floodplain up to a maximum of 1,500 feet of the ordinary high water mark, prairie potholes and other isolated waters, as well as waters with a significant nexus within the 100-year floodplain of a traditional navigable water.[16]

Since the Clean Water Act's inception, EPA and the U.S. Army Corps of Engineers have promulgated a series of rules defining the agencies' jurisdiction over certain "Waters of the United States." EPA and the Army Corps are promulgating the current rule in response to various Supreme Court decisions setting forth tests to determine the scope of the "Waters of the United States" definition. On June 4, 2015, the Committee heard testimony from industry representatives about how the final Waters of the United States rule expands EPA jurisdiction and presents regulatory barriers for the agricultural and construction industries.[17]

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[15] U.S. EPA, Press Release, *Clean Water Rule Protects Streams and Wetlands Critical to Public Health, Communities and Economy*, May 27, 2015, *available at* http://yosemite.epa.gov/opa/admpress.nsf/0/62295CDDD6C6B45685257E52004FAC97.

[16] U.S. EPA, Fact Sheet Clean Water Rule, May 27, 2015, *available at* http://www.epa.gov/cleanwaterrule.

[17] For more information on this hearing, see: http://science.house.gov/hearing/epa-regulatory-overreach-impacts-american-competitiveness

Chairman SMITH. The Committee on Science, Space, and Technology will come to order.

Without objection, the Chair is authorized to declare recesses of the Committee at any time.

And welcome to today's hearing titled "Examining EPA's Regulatory Overreach." I'm going to recognize myself for five minutes to give an opening statement, and then the Ranking Member.

Over the last year, the Environmental Protection Agency has released some of the most expensive and expansive regulations in its history. These rules will cost billions of dollars, burden American families, and diminish the competitiveness of American industry around the world. Today's hearing will examine this unprecedented regulatory agenda and the manner in which EPA has used secret science, questionable legal interpretations, and flawed analysis to promote these rules.

A glaring example is the President's Power Plan. This plan is nothing more than a power grab to give the government more control over Americans' daily lives. These regulations stifle economic growth, destroy American jobs, and increase energy prices. That means everything will cost more, from electricity to gasoline to food, which disproportionately hurts low-income Americans. Even EPA data shows that this regulation would reduce sea-level rise by only 1/100th of an inch, the thickness of three sheets of paper.

This rule represents massive costs without significant benefits. In other words, it's all pain and no gain. EPA also seeks to impose stricter ozone standards. Once again, this comes with few benefits. In fact, EPA's own figures show that since 1980, ozone levels have decreased by 33 percent, and today's air quality will continue to improve with the expected development of practical new technologies.

Last week, the Supreme Court issued a ruling that is an important step towards reining in the extreme actions of the EPA. It ruled that the EPA must consider the costs of its decisions and weigh those costs against any potential benefits. For two years, the Committee requested the voluntary production of the data EPA uses to justify Clean Air Act regulations. The EPA's refusal to provide the data led the Science Committee to issue its first subpoena in 21 years to retrieve that information. Earlier this year, the Committee was forced to issue a second subpoena to obtain information related to Administrator McCarthy's deletion of almost 6,000 text messages sent and received on her official agency mobile devices. The Administration claimed that all but one was personal. Most recently, the Committee requested information and documents related to the EPA's development of the Waters of the U.S. Rule and the Agency's inappropriate lobbying of outside organizations to generate grassroots support. The Committee was again forced to notice its intention to issue a subpoena for the information. Following this latest notice, EPA has begun to produce a limited number of documents to the Committee. However, producing documents in bits and pieces after months or years of delay are not the actions of an open and transparent Administration. They are the actions of an agency and administration that has something to hide.

Earlier this year, the House passed H.R. 1030, The Secret Science Reform Act. This legislation requires the EPA to base its

regulations on publically available data. Why would the EPA want to hide this information from the American people? The EPA has a responsibility to be open and transparent with the people it serves and whose money it spends. I hope the Administrator will tell us today she will produce the data and other information the Committee has requested. Then she will help the President keep his pledge to maintain an open and transparent Administration.

[The prepared statement of Chairman Smith follows:]

PREPARED STATEMENT OF COMMITTEE
CHAIRMAN LAMAR S. SMITH

Over the last year, the Environmental Protection Agency (EPA) has released some of the most expensive and expansive regulations in its history. These rules will cost billions of dollars, burden American families and diminish the competitiveness of American industry around the world.

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The EPA has a responsibility to be open and transparent with the people it serves and whose money it spends.

I hope the Administrator will tell us today she will produce the data and other information the Committee has requested. Then she will help the president keep his pledge to maintain an open and transparent administration.

Chairman SMITH. That concludes my opening statement, and the Ranking Member, the gentlewoman from Texas, Ms. Johnson, is recognized for hers.

Ms. JOHNSON OF TEXAS. Thank you very much, Mr. Chairman, and welcome, Administrator McCarthy. I want to thank you for being here today, and please take back to the employees of EPA my gratitude for their hard work and dedication.

EPA's job is as hard as it is important. For two generations, we've relied on EPA to be the one federal agency to protect the public and the environment from the pollution that comes with being an industrial society. Standing against you are corporations that have built their profits on a business model that viewed rivers, lakes, oceans, and the sky as their dumping grounds. However, two generations of economic growth and innovation have shown us that we can clean up the environment and grow our economy.

If we were to rely just on the Majority's assertions, we would think everything EPA does is wrong. For example, the Chairman has on a number of occasions cast EPA as a secretive organization setting out an aggressive regulatory agenda that ignores public comment and throttles the American economy. In fact, the reality of the situation is far different than the caricature. The reality is that the Obama Administration has done far more than the previous one to make sure that the water we drink and the air we breathe are clean. The Administration is pursuing a pro-health-oriented environmental agenda that includes reducing carbon emissions and slowing the path of global warming. These actions are immensely popular with the vast majority of Americans.

You know what else is popular? The economic results that the Obama Administration has delivered. As of January, the economy had gained almost five times more jobs under President Obama than it did during the presidency of George W. Bush. Corporate profits are nearly double and stock prices have grown proportionately.

This may come as news to my friends on the other side of the aisle, but we are seeing EPA actually enforce the law—something that the prior Administration was reluctant to do—while also producing jobs and profits. It turns out that these are not mutually exclusive outcomes. Now the Chairman is trying to paint a picture of EPA as being engaged in secret dealings with the environmental community. He has made much of the Administrator's deleting text messages, the use of private email by EPA employees, and the use of social media to reach out to Americans to let them know of regulatory proposals.

The truth is that no other agency in our jurisdiction has had to develop a more public and publicly discussed, agenda than EPA.

This Committee is not expert in regulatory processes, so perhaps the Majority is unaware of the multiple public listening sessions, the hundreds of formal filings, and the hundreds or thousands of comments that EPA gets and processes in their regulatory actions. It takes years and years of effort for EPA to move a regulation from a proposal to a final rule. You have to ignore all that public comment to believe that there is something secretive about EPA's rulemaking.

Finally, the use of social media to communicate with the American public is nothing more than recognition of how our society communicates these days. I suspect every Member of the Committee uses Twitter and Facebook and the internet to communicate

with our constituents and the broader public. Engaging the public and providing opportunities to shape regulation appears to me to be a positive step towards a more democratic government.

In the past few years, I've heard many members of the Majority complain that EPA needs to listen more to the public as they move proposals forward. However, the public consists of more than regulated industry with their high-priced lobbyists, and so I cannot see how using social media does not fit with the broad belief of Members on both sides of the aisle that people should have a voice in policymaking.

Let me close, Administrator McCarthy, by encouraging you to not let the investigative theater of this hearing get to you. There are some in think tanks and industry lobby shops, and perhaps even on this Committee, whose mission seems to be to attack the reputation of the agency as a way to slow your work. However, it is vitally important that EPA keep working to protect public health and improve our environment. The agency has been doing a remarkable job on that score, and I hope and trust you will not lose sight of the importance of your great public task.

Thank you, and I yield back.

[The prepared statement of Ms. Johnson of Texas follows:]

PREPARED STATEMENT OF COMMITTEE
RANKING MEMBER EDDIE BERNICE JOHNSON

Thank you, Mr. Chairman. And, welcome, Administrator McCarthy. I want to thank you for being here today. Please take back to the employees of EPA my gratitude for their hard work and dedication. EPA's job is as hard as it is important. For two generations, we have relied on EPA to be the one federal agency to protect the public and the environment from the pollution that comes with being an industrial society. Standing against you are corporations that have built their profits on a business model that viewed rivers, lakes, oceans and the sky as their dumping grounds. However, two generations of economic growth and innovation have shown us that we can clean up the environment and grow our economy.

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However, the public consists of more than regulated industry with their high-priced lobbyists, and so I cannot see how using social media does not fit with the broad belief of Members on both sides of the aisle that people should have a voice in policymaking.

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Thank you and I yield back.

Chairman SMITH. Thank you, Ms. Johnson.

Our witness today is the Honorable Gina McCarthy, Administrator of the Environmental Protection Agency. Prior to her appointment as Administrator, she was the Assistant Administrator for EPA's Office of Air and Radiation. Previously she served as the Commissioner of the Connecticut Department of Environmental Protection. During her career, which spans over 30 years, she has worked at both the state and local levels on environmental issues and helped coordinate policies on energy, transportation, and the environment. Administrator McCarthy received a bachelor of arts degree in social anthropology from the University of Massachusetts and a master's of science in environmental health engineering and planning from Tufts University.

Administrator McCarthy, we welcome you and look forward to your comments, and if you'll begin?

TESTIMONY OF HON. GINA MCCARTHY, ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY

Ms. MCCARTHY. Thank you, Chairman Smith and Ranking Member Johnson and Members of the Committee for inviting me here to testify on the Environmental Protection's regulatory efforts.

The mission of EPA is protection of public health and the environment, and the regulatory efforts are in furtherance of those goals. We're guided in meeting those goals by science and by the law, which serve as the backbone of each of the Agency's actions. I will focus my comments today on providing more detail on three rules, which will hopefully provide tremendous benefit, not only to share this information but tremendous benefit to the public health and the environment.

Approximately 117 million Americans, which is one in three people, get their drinking water from streams that lacked clear protection, and about 33 million Americans fish, swim, and boat in waters that were vulnerable to pollution. Recently, the agency fi-

nalized the Clean Water Rule, which will help to protect those waters which are vital to our health and our economy.

What the Clean Water Rule does is simple: it protects clean water, and it provides clarity on which waters are actually covered by the Clean Water Act so they can be effectively protected from pollution and destruction. The rule provides clearer definitions to establish what waters are jurisdictional and what waters are not, and it places boundaries for the first time that limit the need for case-specific analysis. It makes clear that this rule only applies when someone intends to pollute or destroy a water, because only then does the need for a federal permit arise. This rule not only maintains current statutory exemptions from normal agricultural activities, it expands regulatory exclusions to make it clear the rule does not add any additional permitting requirements on agriculture.

In developing the rule, we held more than 400 meetings with stakeholders across the country, reviewed over one million public comments, and we listened carefully to perspectives from all sides. In addition to the Clean Water Rule, the Agency is in the process of completing two significant air pollution rules.

Ozone NAAQS—because the air we breathe is so important to our overall health and well-being, the Clean Air Act requires EPA to review the National Ambient Air Quality Standards every five years to make sure that they continue to protect public health with an adequate margin of safety. Based on the law, a thorough review of the science, the recommendations of the Agency's independent science advisers, and the assessment of EPA scientists and technical experts, EPA issued a proposed rule in November of last year, taking comment on strengthening the current standard of 75 parts per billion to within a range of 65 to 70 so that we could adequately protect Americans' health and welfare. We invited comments on all aspects of the proposal, including an alternative level as low as 60 parts per billion, and acknowledging interest among some stakeholders in offering comment on retaining the existing standard. The Agency is currently reviewing the comments we received, and we will issue a final rule by October 1st of this year.

Our Clean Power Plan: This summer EPA will be finalizing the Clean Power Plan, which will cut carbon pollution from the power sector, which is the largest stationary source of CO_2 emissions in the country. In crafting this proposal, EPA sought to provide a range of flexibilities that would cut carbon emissions while maintaining affordable electric power and safeguarding system reliability. Climate change is affecting communities all across the United States now, and impacts will increase in the future, burdening our children and grandchildren with health and economic challenges. EPA's unprecedented public outreach effort and the 4.3 million comments we received have provided a tremendous amount of information, and we expect to make changes to the proposal to address many of the issues that have been raised. A key consideration of EPA that was reinforced by many stakeholders both before the proposal and during the comment period is the need to design the rule in a way that respects both the urgency of dealing with climate change as well as the time it takes to plan and invest in the electricity sector in ways that ensure both reliability and af-

fordability. We've paid close attention to both of those core concerns as well as other comments, and will finalize a rule that takes them into account.

Again, let me thank the Committee for inviting me to speak on the Agency's efforts to use the best available science to implement our Nation's environmental laws so that we can adequately and effectively protect public health and the environment.

I look forward to taking your questions.

[The prepared statement of Ms. McCarthy follows:]

TESTIMONY OF ADMINISTRATOR GINA MCCARTHY

House Committee on Science, Space and Technology

July 9, 2015

Chairman Smith, Ranking Member Johnson and Members of the Committee, thank you for inviting me to testify today on the Environmental Protection Agency's regulatory efforts. The mission of EPA is protection of public health and the environment, and the Agency's regulatory efforts are in furtherance of those goals. We are guided in meeting those goals by science and by the law which serve as the backbone for each of the Agency's actions. I will focus my comments today on providing more detail for three rules which will provide tremendous benefits to the public health and the environment.

Clean Water Rule

Approximately 117 million Americans – one in three people – get their drinking water from streams fed by waters that lacked clear protection and about 33 million Americans fish, swim and boat in waters that were vulnerable to pollution. Recently, the agency finalized the Clean Water Rule which will help to protect these waters which are vital to our health and economy.

What the Clean Water Rule does is simple: it protects clean water, and it provides clarity on which waters are covered by the CWA so they can be protected from pollution and destruction.

The rule provides clearer definitions to establish waters that are jurisdictional by rule and limit the need for case-specific analysis. It makes clear that the rule applies only with respect to discharges of pollutants to the covered water; you don't need a permit if you don't discharge pollutants in a covered water.

This rule not only maintains current statutory exemptions for normal agricultural activities, it expands regulatory exclusions to make it clear the rule does not add any additional permitting requirements on agriculture.

In developing the rule, we held more than 400 meetings with stakeholders across the country, reviewed over one million public comments, and listened carefully to perspectives from all sides.

In addition to the Clean Water Rule, the Agency is in the process of completing two significant air pollution rules.

Ozone NAAQS

Because the air we breathe is so important to our overall health and well-being, the Clean Air Act requires EPA to review the National Ambient Air Quality

Standards (NAAQS) every five years to make sure that they continue to protect public health with an adequate margin of safety. Based on the law, a thorough review of the science, the recommendations of the agency's independent scientific advisors, and the assessment of EPA scientists and technical experts, my judgment was that the current standard of 75 parts per billion is not adequate to protect the public health. In November 2014 EPA proposed to strengthen the standard to within a range of 65 to 70 parts per billion to better protect Americans' health and welfare. We invited comments on all aspects of the proposal, including on alternative levels as low as 60 parts per billion, and acknowledged interest among some stakeholders in offering comment on retaining the existing standard. The Agency is currently reviewing the comments we received and we will issue a final rule by October 1, 2015.

Clean Power Plan

This summer EPA will be finalizing the Clean Power Plan which will cut carbon pollution from the power sector – the largest stationary source of CO2 emissions in the country. In crafting this proposal, EPA sought to provide a range of flexibilities that would cut carbon emissions while maintaining affordable electric power and safeguarding system reliability. Climate change is affecting communities across the United States now, and impacts will increase in the future, burdening our children and grandchildren with health and economic challenges.

EPA's unprecedented public outreach effort and the 4.3 million comments we received have provided a tremendous amount of information and we expect to make changes to the proposal to address many of the issues that have been raised. A key theme of what EPA has heard – before proposal and during the comment period – is the importance of designing the rule in a way that respects both the urgency of dealing with climate change as well as the time it takes to plan and invest in the electricity sector in ways that ensure both reliability and affordability. We have paid close attention to those and other comments and will finalize a rule that takes them into account.

I again thank the Committee for inviting me to speak on the Agency's efforts to use the best available science to implement our nation's environmental laws to protect public health and the environment. I look forward to your questions.

Administrator Gina McCarthy

Gina McCarthy

Gina McCarthy is the Administrator of the U.S. Environmental Protection Agency.

Appointed by President Obama in 2009 as Assistant Administrator for EPA's Office of Air and Radiation, Gina McCarthy has been a leading advocate for common-sense strategies to protect public health and the environment.

Previously, McCarthy served as the Commissioner of the Connecticut Department of Environmental Protection. During her career, which spans over 30 years, she has worked at both the state and local levels on critical environmental issues and helped coordinate policies on economic growth, energy, transportation and the environment.

McCarthy received a Bachelor of Arts in Social Anthropology from the University of Massachusetts at Boston and a joint Master of Science in Environmental Health Engineering and Planning and Policy from Tufts University.

When she is not in D.C., McCarthy lives in the Greater Boston area with her husband and dog, just a short bike ride away from their three children, Daniel, Maggie, and Julie.

Chairman SMITH. Thank you, Administrator McCarthy, and let me say that because of the interest today and the time limitation and expected votes and how many Members are present, I'm going to need to strictly enforce the five minute rule even on myself, but we're not going to start the five minutes until I start asking my questions.

Administrator McCarthy, my first question, and this will not surprise you, goes to the Secret Science Reform Act that I introduced that passed the House and that has passed the relevant Committee in the Senate. President Obama's own Science Advisor, John Holdren, testified before the Committee and said absolutely the data on which regulatory decisions and other decisions are based should be made available to the Committee and should be made public. Why don't you agree with the President's Science Advisor, and why don't you agree that this data that you used to justify these regulations should be made public?

[Slide.]

As you know, the bill doesn't take a position on any regulation. We're not making a judgment call. We're just saying the American people and other scientists deserve to see this data. I'm hoping you've changed your mind, and if so, would welcome that comment.

Ms. MCCARTHY. Well, Mr. Chairman, let me first say that EPA totally supports both transparency as well as a strong peer-reviewed independent science process, but the bill, I'm afraid I don't think will get us there. We've had conversations about this before, Mr. Chairman. The way in which our science works is for scientists to develop the science——

Chairman SMITH. But why not make this information public? Why not make it publically available?

Ms. MCCARTHY. The information that you're asking us to reveal is revealing publicly identifiable information.

Chairman SMITH. Right. Now, you and I both know, and we talked about this many times, that information would be redacted, and I agree that it should be redacted, so why can't you release the information after it's been redacted?

Ms. MCCARTHY. I think the fundamental difference of opinion we have, sir, is, I don't actually need the raw data in order to develop science. That's not how it's done.

Chairman SMITH. I understand, but why don't you give us the data that you have and why can't you get that data? Surely, you have the data that you based the regulations upon.

Ms. MCCARTHY. Well, EPA has the authority and the need to actually get information that we've provided to you. We do not have——

Chairman SMITH. But you're saying two different things. You're saying you can't give us the information because it's personal, then you're saying you don't have the information. Which is it?

Ms. MCCARTHY. Well, when we receive the information, we're not allowed to release it, and there is much information that we are not—that we do not have the authority to——

Chairman SMITH. The President's Science Advisor is saying——

Ms. MCCARTHY. —weaken our ability to do——

Chairman SMITH. You've got the President's Science Advisor saying you should make it public. I'm willing to say we'll be happy to

redact all the personal information. There is no good reason why other scientists can't review it. There's no good reason why I don't think that the American people shouldn't see it either.

Ms. MCCARTHY. We are absolutely in line with the Science Advisor. The Science Advisor, however, isn't indicating that every study that EPA looks at to determine—to have a body of——

Chairman SMITH. I'm not saying every study. I'm just saying the studies and the data that you relied upon to try to justify——

Ms. MCCARTHY. But that is the body of data that we did not generate. That is generated in science and peer review.

Chairman SMITH. I wish the EPA would follow—you know, the Ranking Member said you have nothing to hide and yet it looks to me like you're hiding a lot from the American people, and maybe we just have to disagree on that.

Ms. MCCARTHY. Mr. Chairman, we are just protecting people's privacy——

Chairman SMITH. Again, there's ways to do that, and every other agency does it except for the EPA. You can redact the information. If we're not going to agree, I regret that, but I think it——

Ms. MCCARTHY. Okay.

Chairman SMITH. —makes the EPA look bad.

On the Clean Power Plan, former Obama Administration Assistant Secretary Charles McConnell said at best it will reduce global temperature by only 1/100th of a degree Celsius. At the same time, it's going to increase the cost of electricity. That's going to hurt the lowest-income Americans the most. How do you justify such an expensive, burdensome, onerous rule that's really not going to do much good, and isn't this all pain and no gain?

Ms. MCCARTHY. No, sir, I don't agree with you. If you look at the RIA we did, the Regulatory Impact Analysis, you would see it's enormously beneficial. The value of this rule——

Chairman SMITH. Do you consider 1/100th of a degree to be enormously beneficial?

Ms. MCCARTHY. The value of this rule is not measured in that way. It is measured in showing strong domestic action which can actually trigger global action to address what is——

Chairman SMITH. Do you disagree with my 1/100th of a degree figure? Do you disagree with the 1/100th of a degree——

Ms. MCCARTHY. I'm not disagreeing that this action in and of itself will not make all the difference we need to address climate action, but what I'm saying is, if we don't take action domestically, we will never get started——

Chairman SMITH. But if you're looking at the results, the results can't justify the cost and the burden that you're imposing on the American people, in my judgment.

Ms. MCCARTHY. Actually, this is a cost-beneficial rule.

Chairman SMITH. We're obviously going to disagree on that as well.

Ms. MCCARTHY. Okay.

Chairman SMITH. My next question goes to the production of documents, and I appreciate in the last couple weeks you've been a little bit more forthcoming, but my question is, when can we expect to get all the documents that we have either requested or subpoenaed?

Ms. MCCARTHY. Well, let me begin by saying EPA is committed to transparency and the true and faithful compliance with——

Chairman SMITH. Can you give me a date when you will produce the documents that we've asked for?

Ms. MCCARTHY. There are a number of documents, some of which we're still discussing with the staff, and——

Chairman SMITH. And is there any kind of a deadline or date that you can give us when we will get those documents?

Ms. MCCARTHY. I'm more than happy to have staff continue those discussions, sir, and if we're not moving at a pace you want——

Chairman SMITH. But those discussions haven't led to the production of documents. We can have discussions forever. If you're not willing to give me a date by which you're in good faith going to try to give us the documents, then I can't believe that the EPA is acting in good faith. So is it the end of this month? Is it the end of next month? When is it——

Ms. MCCARTHY. Sir, you have a number of requests into us, and I want to make sure that I do not give you a date that I cannot achieve. I will talk——

Chairman SMITH. But give me a target date, any target date.

Ms. MCCARTHY. I can't tell you that until your staff begins to discuss with us, which they are.

Chairman SMITH. You know, to me, this just continues a pattern of obstruction that we've been seeing for a couple of years now, and it would be easy for you to say I'll do my best to get it for you in the next 30 days or whatever. The fact that you're not willing to do that is disappointing. And again, we're talking about largely with these regulations, it's all pain and no gain. I don't see the——

Ms. MCCARTHY. Mr. Chairman, we will be able to——

Chairman SMITH. —impact it's going to have that's particularly beneficial.

Ms. MCCARTHY. —to respond as quickly as we possibly can, and we'll make every effort to do that. I'm just trying to avoid giving you a date that anticipates what your own staff——

Chairman SMITH. Like I say, I just wanted a target date, a good-faith date, and unfortunately, I'm not hearing that date.

I thank you for your testimony today, and we'll now go to the Ranking Member, and I recognize her for her questions.

Ms. JOHNSON OF TEXAS. Thank you very much, Mr. Chairman. I might remind you, you went one minute over.

Chairman SMITH. The Ranking Member is correct. I just—that has been confirmed, and she gets an additional minute, but she's the last person to get an additional minute.

Ms. JOHNSON OF TEXAS. Ms. McCarthy, the House is in the process of passing an appropriations bill that cuts your Agency's budget by more than $750 million. It includes an amendment by the Chairman to cut your office and funding of the Office of Legislative Affairs based on a continuing pattern of obstruction and delay of Committee's requests. I believe the Chairman has signed or co-signed 11 document request letters to your Agency in the first 26 weeks of this Congress, basically a letter every other week. And each of these letters have been either a new request or an expan-

sion of the previous request. Now, I have three questions, and I'll ask them all at one time.

What is your count of the letters from this Committee and from Congress as a whole? How many documents have you provided the Committee to date, pages or documents, however you keep track? And finally, can you describe the impact of the cuts and the policy riders in the House Interior appropriations bill would have on your agency?

Ms. MCCARTHY. Well, since January 1st of this year, we have received 10 letters and one subpoena from this Committee. We've generated 13 written responses and sent out over 15,000 pages of documents responsive to the Committee's request, and we're continuing to make production of documents to the Committee. We've held approximately 10 conference calls and communicated by email or phone with Committee staff on over 35 occasions. So we continue to try to be as responsive as we can, recognizing our commitment to transparency and the important work of this Committee.

In terms of the budget cuts, the budget cuts that are proposed in the appropriations bill and a variety of amendments that have been added would seriously threaten the ability of EPA to do its core work. Now, I understand that there are disagreements in moving forward with some rules like our Clean Power Plan to address the challenge of carbon pollution or our new ozone standard to protect public health, but this goes well beyond that to impact our ability to deliver clean water, clean air, healthy land, work with states, support their efforts. This would be a devastating proposal in terms of disallowing us to move forward with the real problems we're facing today and would be a serious problem in terms of rolling back all of the work that we'll be unable to accomplish because there'd be no boots on the ground anymore.

Ms. JOHNSON OF TEXAS. Thank you. Now, I have seen grocery carts of documents rolled in here from your agency on research that was not done by the federal government on—that was done over 25 years ago as related to tobacco and lung disease. Are you still being badgered for the information that you don't have?

Ms. MCCARTHY. Well, part of the challenge with the Secret Science bill is that it asks us to gather information we have no authority to gather, and it asks us to release information where I cannot protect people's personal privacy or confidential business information in order to release that publicly. And frankly, the way in which science works in this country is, we don't look at—the scientists don't exchange all the raw data although they can and they often do, but they don't have to in order to do scientifically credible, independent peer review, which is the core of how this country has done science forever.

Ms. JOHNSON OF TEXAS. Isn't it true that the American Cancer Society did that research independently of the federal government?

Ms. MCCARTHY. Well, the two issues that really started this concern about secret science had to do with the development of basically studies that were developed by the American Cancer Society and Harvard, two not unknown or well thought of or fully thought of entities, and they had information that we sought. We were given the information we had the authority to gather. They offer opportunities for that raw data to be reviewed in one-on-one review

by researchers but it is—they are cohort studies. They're individuals that are followed for many years. It is—they're great studies, we rely on it, but they are so filled with personal information that it would be impossible to redact that and share, and so we're doing the best we can to get the information out to people that we're allowed to release but in no way does the lack of access to raw data preclude us from being—from relying on these studies and many others that have been the core of how we look at developing National Ambient Air Quality Standards.

Ms. JOHNSON OF TEXAS. Thank you very much. My time is expired.

Chairman SMITH. Thank you, Ms. Johnson.

Ms. JOHNSON OF TEXAS. Oh, wait a minute. Did I get an extra minute?

Chairman SMITH. You do get an extra minute.

Ms. JOHNSON OF TEXAS. Let me ask one more thing then. What do you think this Committee will do with all that data when they get it? We're not researchers. We're just a legislative committee.

Ms. MCCARTHY. Well, I think——

Ms. JOHNSON OF TEXAS. I mean, we have it, and we haven't done anything with it yet, but you're still getting badgered for more and more. What, in your opinion, is this of value to us? I haven't figured it out myself.

Ms. MCCARTHY. Well, I think that one of the reasons why we rely on peer-reviewed science is to allow raw data and science to be done by the scientists, and my job is to rely on their judgment and to make sure that I follow all of the practices that Congress has laid out to rely on peer-reviewed science. I do not know of what value raw data is to the general public but I certainly will provide any information that I have the authority to provide and I'll do it in a way that still protects people's interests in the work of our agency.

Ms. JOHNSON OF TEXAS. Thank you.

Chairman SMITH. Thank you, Ms. Johnson.

The gentleman from Oklahoma, Mr. Lucas, is recognized for his questions.

Mr. LUCAS. Thank you, Chairman Smith, and I think it's worth noting the comments from Chairman of the EPA Science Advisory Board that stated that data used to justify regulations should be made publicly available and that all data going into making conclusions in the scientific studies should be made available, and similarly, I think it's worth remembering the President's Science Advisory's testimony before the Committee that regulatory decisions and other decisions are based—should be available to the Committee and made public. I think we should remember that.

Now, having said that, Administrator, is the EPA's use of nonpublic scientific data consistent with the Agency's scientific integrity policy? Are you doing things that are consistent with your own policy on scientific integrity?

Ms. MCCARTHY. Yes, sir, we are.

Mr. LUCAS. Can you—and I'll be honest with you, Administrator. Coming from a rural area, I'm a little sensitive about the Waters of the United States rule. Can you guarantee me and this Com-

mittee that all data supporting the final WOTUS rule will be 100 percent publicly available?

Ms. MCCARTHY. Actually, the docket—it was published in the Federal Register just a short time ago. All of the data that went into our connectivity study, our science study, is already publicly available and the technical documents are provided in the public——

Mr. LUCAS. In a particular area or two that goes with the waters of the United States rule, have you made public how the EPA developed the 4,000 feet of high tide line or the ordinary high water mark number in the final rule but was not in the proposed rule? Or for instance, the 1,500 feet within a 100-year floodplain number in the final rule? Or all the waters located within 100 feet of an ordinary high water mark identified as navigable? Have those—has that information been made available in what you've provided?

Ms. MCCARTHY. It is available in the docket, and the good thing about attracting a million comments is, it allows us to make changes between proposal and final that are based on better science, better understanding of how the agencies have been managing these programs for years and that's what we relied on, both the knowledge and the expertise of our staff, the information that we received from the public and comments and the science that's available to us.

Mr. LUCAS. Well, I hope that the information you say that is available is indeed available and continue to be added to. I would just simply observe that like many Members of this Committee and the public out there, I think the Chairman of the Science Advisory Board and, for that matter, the President's Science Advisor make very good points.

Ms. MCCARTHY. And we follow——

Mr. LUCAS. Years ago, I was told as a young legislator that there's a fine line between doing things for people and doing things to people. You and the Agency may believe you're doing things for people but there's a perception out there across the country, whether it's in ag or construction and a variety of places, that in all of these rules you're not doing things for people, you're inevitably doing things to people. That's an unfortunate set of circumstances. We in this Committee and we in Congress serve a very important role going all the way back to our predecessors in the Parliament on the other side of the ocean. Our responsibility it to protect the citizens from the king and his government. You are the President's Administrator and it's our responsibility to make sure that our constituents' interests are well taken care of, and that the king, using an old term, remembers the public.

That said, Mr. Chairman, I look forward to all of this information that's been promised to us. I know that we've had a substantial amount that's appeared in recent days. Maybe we need to have more hearings so we can continue the flow of information.

Chairman SMITH. Thank you, Mr. Lucas.

The gentelwoman from Maryland, Ms. Edwards, is recognized for her questions.

Ms. EDWARDS. [Audio malfunction in hearing room] service and some of the other Members on our Transportation and Infrastructure Committee where we've held joint hearings with the Senate

and hearings on the same issues in that Committee, and the Administrator's been there at hearings in this Committee and the Administrator is here, and I feel in some ways that we've asked so many of these questions so many times, and frankly, with the Clean Water Rule, I think since the Majority has already voted to gut it, it seems unclear why we're even discussing it here today.

Nonetheless, you know, later in the day we're going to vote on the Interior Environment appropriations bill for fiscal year 2016. It includes a rider that prevents the EPA from even proposing a standard lower than the current 75 parts per billion. During the debate, I offered an amendment to the bill to strike that rider specifically because of the testimony that we've heard before this Committee, which told us that the current standard is not in line with the current science. In testimony, the Committee received from Dr. Mary Rice back in March on the health impacts of ozone, she indicated that the research has only grown stronger since the last time EPA considered revising the current standard. One area she highlighted was the new evidence between higher ozone levels and increased mortality.

Administrator McCarthy, can you please describe how the EPA incorporates changes in the scientific understanding into the rulemaking process? Some of my colleagues have claimed that the science EPA uses for its ozone regulations is somehow secret, so can you respond to those claims in your own words, and what policies or processes does EPA have in place for public review and comment on the science that EPA is considering? And you can have the balance of my three minutes to do that.

Ms. MCCARTHY. Thank you. Well, the science behind ozone is one of the most robust bodies of science that we have available to us. There are thousands of studies that have been done for decades that have underpinned two ozone standards—sorry, three, that the Agency has put out and that will underpin our next review. This science is developed using both our Office of Research and Development and our Office of Air and Radiation, who work together to present information that they call an independent science assessment that they bring to our clean air—sorry—our CASAC, Clean Air Science Advisory Committee. That is a FACA that is actually directed—this is the process—directed by Congress to us to do. They are independent and they peer-review the science. It is a public process, public comments, hearings, telephone calls they can join. Then CASAC provides advice to us and we take a look at that, and then the staff also integrate what our regulatory standards are that are the basis of our judgment of what that science means and then they actually propose to the Administrator usually a range of standards that I might consider that they would think would be appropriate on the basis of the science, recognizing that I have to look at what's adequate to protect public health and safety with a margin of safety, and so I have to look at also adding to what they give to add my policy judgment. And so the process is a lengthy one. It takes years to develop.

The body of science is robust. It is looked at with public comment by independent, peer-reviewed scientists. In the case of this ozone standard, they clearly articulated that they thought the current standard of 75 was not adequate to protect public health and wel-

fare and they indicated that I should be thinking about a range of 60 to 70 PPB as the most appropriate on the basis of the science available, which again is very robust and is well understood and has been commented on. And then they went on to say but they recognized that I have a policy judgment to make as well on this issue of using a margin of safety to make sure that it's adequately protective, and on the basis of that, I develop a rulemaking which is also public, which we proposed last year, late last year, and we will finalize on October 1st or before of this year, and in that I proposed a look at the standard between 65 and 70, taking comment down to 60, and also recognizing that people will want to talk about 75 again. But it was very clear to me on the basis of CASAC that this has been a tremendously open, public and credible process.

Chairman SMITH. The gentlewoman's time has expired.

Ms. EDWARDS. Thank you very much. I have nine seconds left by my clock.

Mr. Chairman, with unanimous consent, I would ask that I be allowed to enter letters into the record from my constituents including a Girl Scout troop saying that we need to get on with it. Thank you very much.

Chairman SMITH. Without objection, thank you, Ms. Edwards.

[The information appears in Appendix III]

Chairman SMITH. And the gentleman from Wisconsin, Mr. Sensenbrenner, is recognized for his questions.

Mr. SENSENBRENNER. Thank you very much, Mr. Chairman.

Administrator McCarthy, I'd like to ask you a few questions about the upcoming COP21 climate change talks in Paris.

The President is committed to reaching an international deal there. Do you support international negotiations on climate change and greenhouse gas emissions?

Ms. MCCARTHY. I support efforts to develop a global plan to move forward to address greenhouse gas emissions.

Mr. SENSENBRENNER. Okay. If the global plan ends up resulting in increases in the price of carbon, are you concerned about the fact that that would disproportionately hurt poor- and middle-income people rather than people who are in the upper one percent?

Ms. MCCARTHY. I believe that the actions we take on greenhouse gases will protect all of us but most importantly those most vulnerable to changes in climate, which are low-income and——

Mr. SENSENBRENNER. Well, I think that poor and middle-income people will be most concerned about what happens to their expenses should the price of gas and electricity and natural gas and anything that is carbon-related go up if you guys go along with an increase in the cost of carbon. Are you concerned about the economic impact on——

Ms. MCCARTHY. Absolutely.

Mr. SENSENBRENNER. —poor people?

Ms. MCCARTHY. Absolutely. I'm interested in two different ways: to make sure that we reduce the carbon pollution that's threatening them but also do it in a way that continues to allow them to economically grow and to become part of the middle class.

Mr. SENSENBRENNER. Okay.

Ms. MCCARTHY. That is our——

Mr. SENSENBRENNER. How do you do that by increasing their costs? You know, I've seen economic studies that indicate that the increase in costs on a per-family basis would be thousands of dollars, and that would have a much bigger impact on poor people than it would be on the CEOs.

Ms. MCCARTHY. Sir, Congress has designed a process for EPA to develop a cost-benefit analysis, and we've done this with the Clean Power Plan. There is no way that history tells us that we have to sacrifice people's income and jobs in order to continue to make improvements environmentally, and carbon is no exception. The way you do it is exactly the way we designed our proposed Clean Power Plan to allow tremendous flexibility and time to make reductions in a way that keeps our electricity reliable and affordable and keeps people——

Mr. SENSENBRENNER. Well, that's not what I've seen projecting things out, and you know, I would ask you to have a preferential option to economically protect poor people that does not result in some goofy politically designed redistribution program where you'll collect some money and then you—taxes and then you'll send it back according to what somebody decides is good social engineering. Will you commit to me that you won't do that?

Ms. MCCARTHY. Well, sir, I haven't proposed——

Mr. SENSENBRENNER. Yes or no.

Ms. MCCARTHY. Yes, and I have not proposed any such——

Mr. SENSENBRENNER. Well, I know you haven't but I'm looking forward to——

Ms. MCCARTHY. Well, that's now how——

Mr. SENSENBRENNER. —COP21. Okay. Now, I've got a couple other questions because I'm going to stay in the five minutes.

Ms. MCCARTHY. All right.

Mr. SENSENBRENNER. One of the problems that we've had in these climate change negotiations is that China and India and Russia don't want to have any reductions in their growth rate. The President kind of went along with reducing our greenhouse gas emissions but letting China do business as usual. Would you support an international agreement that lets China and Russia and India off the hook and not have the same reductions in greenhouse gases over the same accounting period as the United States?

Ms. MCCARTHY. Well, Congressman, I'm not reading what's happening the same way that——

Mr. SENSENBRENNER. No, no, I'm asking would you support—if it turns out that way, would you support that?

Ms. MCCARTHY. So far, that's not what——

Mr. SENSENBRENNER. No, that's not the question I asked. Please answer the question I asked. Would you support it? Because the President has supported something like this in the past and maybe we should stop doing that by giving China an opportunity not to reduce its greenhouse gases until 2030 while we have to reduce ours between 26 and 28 percent by 2025. That doesn't sound to be something to me that's very good for America.

Ms. MCCARTHY. Well, I certainly understand——

Mr. SENSENBRENNER. Do you think that's good for America? Will you understood it's good or isn't it good?

Ms. MCCARTHY. Well, I understand that everybody needs to act, and clearly, both China and the United States and other large economies need to move forward to reduce their carbon pollution.

Mr. SENSENBRENNER. Okay. Well, then I guess——

Ms. MCCARTHY. I think China——

Mr. SENSENBRENNER. Then I guess the deal that the President hatched with the Chinese when he was in Beijing does not fall within your markers that everybody has to step up to the plate because we're there and striking out, and they're sitting in the dugout or some other place. I yield back.

Chairman SMITH. Thank you, Mr. Sensenbrenner, and the gentlewoman from Oregon, Ms. Bonamici, is recognized for her questions.

Ms. BONAMICI. Thank you very much, Mr. Chairman, and thank you so much, Administrator McCarthy, for appearing before us today and for the important work you do to protect the health of Oregonians and Americans, and I'm an optimistic person so I want to say that I'm happy to hear that my colleagues on the other side of the aisle are concerned about the needs of low-income people. That's some good news today.

So I want to start by thanking you for the EPA's commitment to the ongoing cleanup of the Portland Harbor Superfund site. I look forward to your agency finalizing the remedial investigation and feasibility study. We know it's been a challenge to find environmentally sound, cost-effective cleanup methods that will allow the region 10 and local parties to stay on track toward the goal of presenting the public with a proposed cleanup plan in 2016. But after many, many years, we're all more than ready to resolve the situation in the Portland Harbor, and I look forward to your continued work together on this issue.

Ms. MCCARTHY. And the state's been a wonderful partner in getting to this stage, and we will get this over the finish line.

Ms. BONAMICI. I appreciate that on behalf of many of my constituents who have a lot at stake.

So I just got back from Oregon. I was there last week, where it was close to 100 degrees several days and in the high 90s the rest. People are very concerned about climate change and warming temperatures, particularly with the risks associated, for example, our water temperatures, aquatic habitats, to the extent that, you know, core populations of some fish could become extinct. We're dealing with droughts, of course, my neighbors to the south a little more seriously, but a lot of regions in Oregon, we have a lot of agricultural production in eastern Oregon that's going to affect our region and agricultural products. So can you briefly mention how the work that you're doing will help with some of these issues? And I want to save time for another important question. Thank you.

Ms. MCCARTHY. Let me very quick. The work that we are doing is to implement the President's Climate Action Plan, which is a series of domestic actions that will also reduce carbon pollution but also maintain the growth in our environment that we're all looking forward to continuing, and EPA in particular is moving forward in a variety of ways to take action on climate and to reduce carbon pollution. The good news is that it was done as a strategy to try

to get global engagement to happen because it needs a global solution, and in fact, that is exactly what is happening.

Ms. BONAMICI. Terrific. Thank you. Thank you so much.

I want to point out that there have been a lot of conversations in this Committee about the cost of regulation. Last year, the OMB estimated that rules promulgated by the EPA between 2003 and 2013, that decade, created between $165 and $850 billion in benefits at a cost of $38 to $46 billion. That sounds like a pretty good number to me.

I'm really glad that you're working on the Clean Power Plan, reducing toxins in our air and water on behalf of not only my constituents but Americans.

So some witnesses before this Committee have offered the opinion, and some of my colleagues, that EPA regulations should only be set if environmentally beneficial technology is widely commercially available, but others have pointed to a long history of technologies becoming available after the EPA determines that they're feasible. So does the regulations drive the innovation, and the technologies to reduce costs, for example, of renewables? So emphasizing that the EPA regulations spur innovation and in their absence there is not generally a financial incentive for widespread deployment. So we saw this when we tackled acid rain under the George H.W. Bush Administration. So can you comment on the view that EPA regulations such as the Clean Power Plan or proposed rule to reduce greenhouse gas emissions from new power plants will incentivize innovation?

Ms. MCCARTHY. Yes. I'll just point out two things. The Clean Air Act was actually designed and passed by Congress to have sections that actually were moving technology forward. They were technology-spurring. The section that we're regulating power plants under, under the carbon pollution plan, is one of those sections. So it does say we need to continue to move forward on our New Source Standard.

So what we have done is, we've set a standard that's 30 years away. We have set a standard that allows—it's an investment signal in order to tell states they have every flexibility to get to that standard, but it's also a signal to the market. It will tell people that investments in renewables are not only affordable today, they're going to get more affordable moving forward. It's an opportunity for new energy efficiency technologies.

Ms. BONAMICI. Absolutely.

Ms. MCCARTHY. This is a market-based approach to address a confounding problem but in a way that states can drive it in a way that works best for them and develops the businesses they want to have and the jobs they want to take advantage of.

Ms. BONAMICI. Terrific. And in our state when we passed a feed-in tariff pilot for solar, it sold out in the first five minutes it was available.

Ms. MCCARTHY. Amazing.

Ms. BONAMICI. So a lot of potential for innovation there, and I yield back. Thank you, Mr. Chairman.

Chairman SMITH. Thank you, Ms. Bonamici.

The gentleman from California, Mr. Rohrabacher, is recognized for his questions.

Mr. ROHRABACHER. Well, thank you very much.

Ms. MCCARTHY. Thank you.

Mr. ROHRABACHER. You're obviously a very articulate and hard-working person, and we respect that even though we may have differences in policies.

Ms. MCCARTHY. Thank you, sir.

Mr. ROHRABACHER. I just—do you know in your background of any example where scientists or people involved with policy were ignoring certain raw data in order to achieve a certain preconceived conclusion? Do you ever know—have you ever come across that?

Ms. MCCARTHY. Not individuals that I have worked with.

Mr. ROHRABACHER. Do you know of examples of that?

Ms. MCCARTHY. I can't——

Mr. ROHRABACHER. So you don't know of any examples where people didn't really fulfill their job——

Ms. MCCARTHY. Well, if you're asking me——

Mr. ROHRABACHER. —of being held to such high standards?

Ms. MCCARTHY. —personally, no, I don't know.

Mr. ROHRABACHER. Okay.

Ms. MCCARTHY. Personally, no.

Mr. ROHRABACHER. Well, I would have to suggest then that maybe you're a little naive in that area. Those of us who've been around a while have seen this in several occasions. So not knowing any examples of that, you then feel totally secure in telling us that we must trust——

Ms. MCCARTHY. No, sir.

Mr. ROHRABACHER. —in the outcome——

Ms. MCCARTHY. No, sir.

Mr. ROHRABACHER. —without knowing the raw data——

Ms. MCCARTHY. No, sir.

Mr. ROHRABACHER. —that went to that.

Ms. MCCARTHY. No, sir.

Mr. ROHRABACHER. You are not asking us to trust you?

Ms. MCCARTHY. No, sir. What I am—clearly, I've read about instances where science has not—has been manipulated.

Mr. ROHRABACHER. Correct.

Ms. MCCARTHY. And that is why we work through an independent, peer-reviewed body to be able to provide us advice. They don't have to——

Mr. ROHRABACHER. Now, what about us? I mean, we are elected. Your peer-review process are not elected by the people to watch out for their interests.

Ms. MCCARTHY. Well, actually, you——

Mr. ROHRABACHER. We are elected by—excuse me one moment. We are elected by the people——

Ms. MCCARTHY. Okay.

Mr. ROHRABACHER. —to make sure that their interests are being watched out for. You are asking us to trust someone who's appointed rather than trying to look at whatever data is used for these decision-makings yourself, and I mean——

Ms. MCCARTHY. There's no "trust me" about it, sir. You've given me a job. This government has provided the structure by which I do my job including looking at science.

Mr. ROHRABACHER. Well, the structure that was set up originally, I believe, was the Constitution that left Congress primarily responsible to watch out directly for the interests of the American people because they vote for us. Let me just point out, you are undermining that basic constitutional privilege when you tell us there's information you will not give us.

Ms. MCCARTHY. No, sir, you have——

Mr. ROHRABACHER. Now, with that said——

Ms. MCCARTHY. —laws that preclude us from giving you sensitive information.

Mr. ROHRABACHER. Well, sensitive information not given to the people elected by the voters of this country is an insult to the people, to our Constitution, to everything this country is supposed to be about in terms of freedom, responsibility, openness of government, et cetera.

Let me ask you, what percentage of the atmosphere is CO_2?

Ms. MCCARTHY. What percentage of the atmosphere is CO_2? I don't have that calculation for you, sir.

Mr. ROHRABACHER. Maybe you could tell us what your personal guess is on what percentage is CO_2.

Ms. MCCARTHY. I don't make those guesses, sir.

Mr. ROHRABACHER. You're the head of the EPA and you don't know? You based—you have all these laws based on—oh, you're going to get your staffer to tell you now, but you're the head of the EPA and you did not know what percentage—and now you are basing policies that impact dramatically on the American people and you didn't even know what the content of CO_2 in the atmosphere was, which is the justification for the very policies you're talking about.

Ms. MCCARTHY. No, that——

Mr. ROHRABACHER. Thank you. I——

Ms. MCCARTHY. If you're asking me how much CO_2 is in the atmosphere, not a percentage but how much, we have just reached levels of 400 parts per million.

Mr. ROHRABACHER. Excuse me. I think it was clear what I was asking you and I was very clear you didn't know.

Let me ask you, if CO_2 from what I understand is only one-tenth—or excuse me—one-half of one-tenth of one percent of the atmosphere and you believe that this minimal, tiny element—and by the way, only ten percent of that, from what I understand, is actually manmade, and of course, whatever you're suggesting and is being suggested as the basis for creating these what we consider draconian controls is that one-tenth that is manmade of the one-half of one-tenth of one-half of one percent, that that will have an impact on the weather to the point that it will actually impact people's health.

Chairman SMITH. The gentleman's time has expired.

Mr. ROHRABACHER. Thank you very much.

Chairman SMITH. Thank you, Mr. Rohrabacher.

The gentlewoman from Massachusetts, Ms. Clark, is recognized for her questions.

Ms. CLARK. Thank you, Mr. Chairman. Thank you, Administrator McCarthy. I appreciate you being here. I appreciate your tes-

timony, and I especially appreciate the correct pronunciation of carbon.

I did want to ask you another percentage question. What percentage do you think of low-income people, in fact, all people in the world, will be affected by climate change if we do not do something to address it?

Ms. MCCARTHY. I believe that everyone, 100 percent are already being affected and will be much more severely impacted if we don't take action now.

Ms. CLARK. And will that impact be felt first, do you believe, by low-income people?

Ms. MCCARTHY. It usually is, and in this case, it will as well, and I think that's well known across the world, and I think you're seeing it play out right away. We need to adapt to the change that's already happening but people in low-income areas do not have the kind of wherewithal to be able to adapt that many of us actually enjoy, and so it is up to us to meet our moral responsibility, not just to them but to our kids' future and take action.

Ms. CLARK. We've had a lot of discussion here today about raw data and its role. Could you go into a little bit about independent peer review and how we actually review and determine what is valid science to base our regulations on? I do not have scientific training. I am an attorney by profession. I don't think that I am qualified to look at raw data, even if redacted, to make an assessment of good policy and laws. We need scientists to make that interpretation. Could you go into a little detail about that for me?

Ms. MCCARTHY. Yes. The way that it works is that we have to have our science independently peer-reviewed. You need to have an open process that's transparent where you pick experts with the knowledge in that field.

Ms. CLARK. Can you have transparency without releasing every bit of raw data?

Ms. MCCARTHY. Oh, absolutely we do have transparency. We have transparency in picking those experts. We have transparency in their discussion of what they think about those documents. We have public review and comment on those documents, and that's before we can really rely on them as the basis of regulatory action. But we almost never just look at one document. We look at a huge, robust document, series of science in order to underpin our major rulemakings, and the way that it works is, the scientists don't look at the raw data. They can if they want. They can reach an agreement with the researchers who own that data and sometimes own some of the modeling that's used to analyze it, but they don't need to. They look at it within the context of their knowledge of the science and the broad body of knowledge that we look at to see if it is being done correctly according to the science, if all of the factors that should be discussed are being discussed, and it's looked at within that context, and further, it can be replicated by others, but they don't sit all around saying I'm going to take another four years, give me the raw data and I'll give you a sense of whether this works. That is just not the way that science is done. That's the way that science can't get done.

Ms. CLARK. And do you see other agencies that are also looking at science where that is the process, that they are going back to the raw data?

Ms. MCCARTHY. If you name an agency in the United States that is a credible science agency, that is how they do their work. That is what the National Academies is. This is how you do it.

Ms. CLARK. And speaking of analysis, last month the Union of Concerned Scientists came out with a report that found recent decisions in state laws that predate the Clean Power Plan have resulted in 31 states already making commitments that will put them halfway towards their 2020 benchmarks. Do you think we're going to be surprised at how easily and efficiently states are going to be able to meet these benchmarks even if the plan was not there?

Ms. MCCARTHY. I think the challenge for us is to make sure that through our rulemaking, we do what the law says, which is to reduce carbon pollution. The way in which you can make that all affordable is to look at how the energy transition is already happening, and instead of thinking you have to go way in front of it, you go behind it and you keep pushing. That's how this works. And so I will not be at all surprised to see either the utilities or the states go way further than we require. In fact, that's usually exactly what happens. It's called good regulation and rulemaking, and I think this is exactly what we did with this carbon pollution plan because we give every state the flexibility to actually design the plan for themselves. All we're doing is setting the standard. It's far enough away. The technologies are there. They're going to keep getting better if we send the right signals, and I think we'll see this be an opportunity for us to continue that energy transition towards clean energy and low carbon that people are demanding.

Ms. CLARK. Thank you, and I yield back.

Chairman SMITH. Thank you, Ms. Clark.

The gentleman from Alabama, Mr. Brooks, is recognized for his questions.

Mr. BROOKS. Thank you, Mr. Chairman.

Administrator McCarthy, EPA's impact analysis of the proposed ozone regulations admits that the agency's proposed ground-level ozone rule will cost America at a minimum $3.9 billion per year at 70 parts per billion and $15 billion per year at 65 parts per billion. In contrast, a study by the National Economic Research Associates, also known as NERA Economic Consulting, estimates that an EPA ozone limit of 65 parts per billion would cut America's gross domestic product by $74 billion per year in real-dollar terms, totaling $1.7 trillion in lost gross domestic product between 2017 and 2040, thus denying struggling American families an average of 1.4 million jobs per year through 2040.

Administrator McCarthy, I hope you will concur that the more damage the EPA's regulations do to the American economy, the poorer the American economy is, and the less money America has to pay for and ensure that Americans enjoy clean water, clean air, and proper disposal of hazardous materials. Anecdotally, I would submit that you can look at any number of poor, heavily populated regions around the globe that does not have the economic means

to pay for pollution resulting in some of the worst polluted areas on the planet.

In February, Alabama Governor Robert Bentley sent you a letter emphasizing that the proposed ozone regulations do more damage than good to Alabama.

Mr. Chairman, at this time I'd like to submit Governor Bentley's letter to the EPA, more specifically, the Honorable Gina McCarthy, dated February 24, 2015, for the record.

Chairman SMITH. Without objection, so ordered.

[The information appears in Appendix III]

Mr. BROOKS. The EPA states in its proposed ozone rule that "The Administrator notes that the determination of what constitutes an adequate margin of safety is expressly left to the judgment of the EPA Administrator."

Administrator McCarthy, it appears that your "adequate margin of safety" calculation will determine the EPA's ozone parts-per-billion standard and what kind of damage will be done to the American economy and American jobs. Is that accurate? Is that the standard that the EPA will be going by, adequate margin of safety, yes, no, or I don't know.

Ms. MCCARTHY. That is what the statute requires.

Mr. BROOKS. Since the EPA's ozone regulation might be the costliest regulation in EPA history, which is saying quite a bit, America needs and deserves a precise and clear definition of what "adequate margin of safety" means.

Administrator McCarthy, what is your precise definition of and what is the specific scientific methodology you intend to use to define adequate margin of safety?

Ms. MCCARTHY. It is actually in the statute given as a policy judgment that I would make.

Mr. BROOKS. And what is your definition as you try to wrestle with what that phrase means, adequate margin of safety? I assume you're using scientific methodologies, perhaps sound economic analysis as you try to determine what a rather vague term, adequate margin of safety, means.

Ms. MCCARTHY. Congressman, you will be able to see in the rules a very good discussion of what my judgment is and the basis of that. It will not be on the basis of cost. This is a health-based standard to protect public health. Cost is not a consideration in the preliminary——

Mr. BROOKS. How can you say cost is not a consideration for health? Because the health that we enjoy is a function of what we can pay for?

Ms. MCCARTHY. This actual rule when you look at public health benefits, they far outweigh what we estimate to be the illustrative costs, but costs in terms of how you define an ozone standard is not considered until implementation. That——

Mr. BROOKS. Are you going to share with us today, this Committee, your definition, your understanding, your methodology of what the phrase "adequate margin of safety" means?

Ms. MCCARTHY. That will be shared with you when you see the final rule, sir. That is when I apply my judgment and I explain it completely and it goes through whatever——

Mr. BROOKS. So as of today, you have no judgment and you're not able to explain it to this Committee, to the United States Congress or the American people?

Ms. MCCARTHY. There is no specific definition I can offer you. It is a judgment that will be well documented by the science.

Mr. BROOKS. How long has the EPA been working on that definition and how long has that definition been in the statute?

Ms. MCCARTHY. Since we created the National Ambient Air Quality Standards program.

Mr. BROOKS. What year?

Ms. MCCARTHY. Since the Clean Air Act.

Mr. BROOKS. What year?

Ms. MCCARTHY. When was it? I——

Mr. BROOKS. So decades later, you still don't have that definition with respect to——

Ms. MCCARTHY. No, sir, it's not applied that way. You apply it to the individual rule——

Chairman SMITH. The gentleman's time has expired.

Mr. BROOKS. Thank you, Mr. Chairman.

Chairman SMITH. Thank you, Mr. Brooks.

The gentleman from Virginia, Mr. Beyer, is recognized for his questions.

Mr. BEYER. Thank you, Mr. Chairman, and Madam Administrator, I want to thank you at the top for being so patient and gracious this morning despite the rather combative nature of the questioning.

My—our Chair, my good friend and distinguished Chair claims that the EPA's actions of the last six years have severely damaged our economy. How do you reconcile that with 64 straight months of job growth, 10.8—12.8 million new private-sector jobs, tripling of the stock market, the recent news that we have 5.3 million job openings now advertised, the most in American history? And if there's a—is it not perhaps better to also look at the infrastructure bills we failed to pass, the immigration reform we failed to act on, the Budget Control Act and sequester, our inability to do tax reform for holding back economic growth rather than blaming it on the EPA?

Ms. MCCARTHY. Well, I think one of the things to recognize as well as when you look directly at EPA, you look at 70 percent improvement in our air pollution. It's reduced by 70 percent while the GDP tripled. We know how to do these rules in a way that is not just not contrary to job growth and the economy but can fuel it and becomes part of it.

Mr. BEYER. You know, I now use text messages a great deal, mostly because my children will not return my phone calls.

Ms. MCCARTHY. That is exactly why I do.

Mr. BEYER. And I also find that I'm not allowed to talk in the phone in Committee or on the House Floor, so my excellent staff text me back and forth all day long, and I read and delete, read and delete. I can't ever actually imagine doing anything substantive in 140 characters, especially with my clumsy iPhone typing skills. I also discovered if I don't delete, the chain just gets longer and longer and longer with my scheduler or with my daughter. So is there really any reason to think that your 6,000 text mes-

sages were anything but trivial and personal and nonconsequential?

Ms. MCCARTHY. There were two that I actually saved because they were a record. Other than that, they were, to the best of my recollection, family, friends, I'm going to be a little late for something. Text does not accommodate a substantive conversation but it does accommodate me keeping in touch with my kids when I'm pretty far away. That's the reason why I started it, and we do not and throughout discourage the use of text message but when we do use it for government purposes, but when we do there's a process and a policy in place to make sure that those are preserved. That's the policy that you see reflected here.

Mr. BEYER. Can you get an EPA rule to require parents—or children to call their parents?

Ms. MCCARTHY. I wish I could. If Congress would give me the authority to enforce that, I'd be——

Mr. BEYER. On ozone, we're now at 75 parts per billion, and the Chair says that's a 33 percent improvement, and you're only asking for perhaps a 5-parts-per-billion decline. That's 6–2/3 percent. We've been offering amendments up until midnight or 1:00 in the morning to the appropriations bill in the last 2 months, and again and again and again we hear that we can cut the budget by five percent or ten percent and it's not going to make any substantive difference at all. When 70 parts per billion is what robust science says is needed for our health, why the hysteria about a six percent cut? And we've heard the conservative think tank projection of job loss. Can you talk anything about the economic value of the health benefits and how that compares to the potential cost?

Ms. MCCARTHY. The health benefits of this rule dwarf the economic costs that we're projecting. We're talking at a level of 70, $6.4 to $13 billion a year in benefits; at 65, it's $19 to $38 billion. So we are talking about significantly more benefits than cost.

But the most important benefit of this, sir, if I might, is that you're telling the American people what clean air is supposed to be. So the benefit immediately is that individuals who have kids that have asthma will know that their air quality—sorry. Let me put it another way. They can take a look at what the air quality is today on their Weather Channel that we help provide and they can decide whether their kids should go out and play. The biggest value is that individuals can protect themselves, their kids, their elderly parents, make decisions for themselves today while we give states lots of time to think about what other cost-productive ways to achieve that over many years. Some of these states won't even face these challenges for a very long time but you don't worry about the implementation if that means that you're not giving the public the information they need today to protect themselves and their kids. That's what this is all about.

Mr. BEYER. Thank you, Madam Administrator.

Mr. Chair, I yield back.

Chairman SMITH. Thank you, Mr. Beyer.

The gentleman from Illinois, Mr. Hultgren, is recognized for his questions.

Mr. HULTGREN. Yes. I'd like to first yield to the Chairman.

Chairman SMITH. I appreciate the gentleman yielding.

I just want to make two points. First of all, I'll remind the gentleman from Virginia that text messages to staff are official text messages, and for the Administrator to say that all but one or two text messages out of 6,000 were personal is simply laughable.

The other statistic I wish the gentleman had mentioned in his list of statistics is that we had the lowest labor participation today in America in 38 years.

I thank the gentleman from Illinois for yielding, and I yield back.

Mr. HULTGREN. Thanks, Chairman, and thank you, Administrator McCarthy. I do appreciate you being here, and I appreciate the job your agency is tasked with, and as I mentioned last time you were here, it's important to realize the good work we've already been able to do. According to your own data, aggregate emissions for the six common pollutants have decreased 68 percent since your Agency's implementation of the Clean Air Act while we consume 44 percent more energy and travel 168 percent more miles.

Ms. MCCARTHY. Thank you.

Mr. HULTGREN. We actually are doing well, and that's why I have concerns about an agency that many in my community and my constituency is continually moving the goalpost as an activist, not as a regulator. My constituents and I do agree that we need smart, reasonable, science-based regulations, and with the botched Mercury Rule we saw all on display two weeks ago, I'm not sure that that has been the case with your agency.

I also expect your agency to work with our states and counties as a partner, not a Palpatine, and when former officials from an Administration consider EPA's efforts to work with other federal agencies to be a sham, I can tell you that it does not appear your collaboration with our state agencies has been any better.

Mr. Chairman, I'd like to enter into the record a letter from the U.S. Conference of Mayors, the National Association of Counties, the National League of Cities, and the National Association of Regional Councils dated March 17, 2015, where they call on the EPA to retain the existing ozone standard set in 2008 which still has not been fully implemented.

Chairman SMITH. Without objection, so ordered.

[The information appears in Appendix III]

Mr. HULTGREN. I'd also like to point out, the effect these changed standards will have on the State of Illinois and many of the counties that I represent. The Center for Regulatory Solutions released a study today which showed how EPA's proposed ozone regulations, the most expensive regulation in history, will cause significant burden to the Chicago-area economy. As you can see from the slides above, with 21 counties of attainment, I'm worried about the overall impact, and if you change to the second slide, you'll see how bad this is for the collar counties that I represent. We are putting 73 percent of the state's already fragile GDP at risk.

[Slide.]

Last year, Illinois enrolled twice as many new recipients on SNAP benefits than it created jobs. Just last week, the Illinois Black Chamber of Commerce joined by the U.S. Chamber of Commerce and the National Black Chamber of Commerce hosted a symposium on the economic and employment impacts the ozone proposal would have in Chicago and on minority communities. It

is clear this rule will have a disparate impact on low-income communities, communities of minorities and seniors on fixed incomes.

Administrator McCarthy, this should be a quick answer, but do you consider your agency's efforts to coordinate and collaborate with our state and local officials to be better, worse or the same as your efforts to collaborate with other federal agencies such as DOE?

Ms. MCCARTHY. I think we collaborate very well with both our sister federal agencies as well as our state and local communities.

Mr. HULTGREN. That's not what we're hearing, and in some ways it reminds me of when I was in school and we'd have group projects, and there would be one person who wouldn't do any work. The teacher would ask how it went. Everybody would put in a slip of paper saying this person didn't carry their weight, and then that person would stand up and say I did the whole project myself and everybody else is dumb. That's kind of the approach that I feel is happening right now when we're hearing from other agencies——

Ms. MCCARTHY. Well, sir, the studies that you're quoting didn't even do a study of this proposal.

Mr. HULTGREN. The studies I'm quoting are talking about the impact—and it just was released today. I don't know if you've seen it but we can make sure you have it. This is the one, and it absolutely is dealing with increase of your proposal. We'll make sure you have it. You can review it and you can respond to us later.

Ms. MCCARTHY. Okay.

Mr. HULTGREN. Again, we just got it. It was just released today so I haven't been holding it back from you.

Ms. MCCARTHY. Okay.

Mr. HULTGREN. But it's something that if we would have gotten it sooner, we would have gotten it to you sooner.

Ms. MCCARTHY. Okay. Thank you.

Mr. HULTGREN. But it just came out today.

Ms. MCCARTHY. Yes.

Mr. HULTGREN. In the letter I submitted, the National Conference of Mayors pointed out that the Clean Air Act requires transportation conformity to ensure federally supported transportation activities are consistent with state air quality implementation plans. The Chicago area is largest rail hub in the country. According to the Center for Regulatory Solutions, freight traffic is expected to increase by 80 percent by 2020. How does EPA expect the most financially troubled state in the country to implement these standards when the agency has not and will not consider the full potential cost of implementation?

Ms. MCCARTHY. If I could point out, sir, the health standard sets up a process where states develop plans over time and there is significant time to achieve this standard.

But the majority of——

Mr. HULTGREN. My time is expired. If you could maybe respond in writing back to me, these are important questions.

Ms. MCCARTHY. The vast majority of the counties will be in——

Chairman SMITH. Thank you, Mr. Hultgren, and the gentleman from——

Ms. MCCARTHY. —as a result of national standards. That's an important thing to remember. This is not on the backs of the

states. It is a partnership between the national government and the states to get this done.

Chairman SMITH. The gentleman's time is expired. Thank you, Mr. Hultgren.

The gentleman from California, Mr. Takano, is recognized for five minutes.

Mr. TAKANO. Thank you, Mr. Chairman.

Administrator McCarthy, thank you for being here this morning. You know, Representative George Brown, former Chairman of this Committee, whose portrait hangs right over there, was probably responsible for the establishment of the EPA and the passage of the Clean Air Act. My constituents and I have seen firsthand how the EPA can improve air quality and advance public health.

In my own home district of Riverside, California, according to the State of the Air 2015, a report from the American Lung Association, still has tremendous struggles with ozone and particle pollution. We are situated, you know, downwind from my other colleague from California, and we typically have middle-class, low-income folks that can't afford homes along the coast.

I am glad to hear that my colleagues also care about poor people and middle-class people. I don't understand why they're not so concerned about the wealthy people along the coast whose property values stand to be put in jeopardy by global climate change.

But, you know, I'm struck by the fact that EPA regulations save us money in the long run by improving public health and, you know, I'm struck by the comment that health is what we can pay for, but I'm also struck by a comment that a senior citizen once made to me and says, you know, nothing can really—you can't place a value on your health.

A study by the EPA shows that by 2020, the benefits of the Clean Air Act will outweigh the costs by more than 30 to one. The Clean Air Act has helped cut down on cases of asthma, heart disease and infant mortality. And by 2020, it is expected to prevent 17 million lost workdays because people are healthier.

And I want to put this hearing in context. I'm afraid my colleagues on the other side of the aisle are exploiting the public's frustration with the economic downturn to push an anti-environmental war on science, and for me, it's particularly offensive because the people in my area greatly suffer. We were ground zero for the mortgage crisis. It was a financial services meltdown which has caused this lack of participation in the economy, not environmental regulations we've proposed to solve our situation. They propose to solve our situation that was caused by a financial meltdown by deregulating our—you know, not regulating the environment or taking these controls off which my area, the people in my area benefit from those—from the EPA's regulations.

The clean air—the ozone and the particulates we would suffer far greater, I claim, if we did not have EPA improving our air quality over the past 20 years.

Now, I want to ask you a question. Do you—Administrator, do you believe that the EPA, you know—what's the balance between listening to elected politicians, the opinions and knowledge of elected politicians, versus independent scientists?

Ms. MCCARTHY. Well, when you make a decision like this, you must listen to the independent scientists who base it on peer-reviewed science. That's what the law requires. But it's sort of what all of us would agree would be a good thing to do.

Mr. TAKANO. I agree. I think the American people would say let's trust the opinions of independent scientists. They're unelected, granted, but they're also not subjected to the various different kinds of interests that can play upon them, right?

Ms. MCCARTHY. But this body indicated that that's how we should do it.

Mr. TAKANO. The Congress set it up that way. The Congress actually mandated——

Ms. MCCARTHY. That's right.

Mr. TAKANO. —that you rely on that.

Ms. MCCARTHY. Yes.

Mr. TAKANO. Now, I understand that the power plants that burn coal, one of the serious emissions is mercury. Is that right?

Ms. MCCARTHY. That's right.

Mr. TAKANO. And mercury causes—is linked to neurological damage in children.

Ms. MCCARTHY. That's correct.

Mr. TAKANO. And I understand that who tends to be located and inhabit the areas around coal plants tend to be low-income people, often people of color.

Ms. MCCARTHY. Yes.

Mr. TAKANO. Is that true?

Ms. MCCARTHY. That is true.

Mr. TAKANO. Okay. As much as I'm glad to see the Majority cares about the plight of poor people but I'm wondering whether or not they care about the health of poor people, and it seems to me that it's contradictory to say oh, we care about poor people being able to buy, you know, buy carbon but not also take into consideration the fact that we have many, many, many, disproportionately poor people that are living around these power plants.

I only have 20 seconds left, but can you maybe comment about the ability of your regulations to generate greater economic activity?

Ms. MCCARTHY. Yeah, it's actually—a well-done rule for the environment is actually extremely supportive of the foundation of a growing economy because we're talking about premature deaths, we're talking about asthma attacks, kids not being able to go to school, we're talking about families not being able to go to work. So we actually believe, and I think the data shows that our rules are so cost-beneficial because they give so many more public health benefits than they do cost the economy, and if you structure this right, you generate activity in the economy to grow new technologies, to grow new jobs. I think that's extremely important to remember is that utilities——

Chairman SMITH. The gentleman's time has expired.

Ms. MCCARTHY. Oh, I'm sorry.

Chairman SMITH. Thank you, Mr. Takano.

Mr. TAKANO. Thank you.

Chairman SMITH. The gentleman from Florida, Mr. Posey, is recognized for his questions.

Mr. POSEY. Thank you, Mr. Chairman.

Administrator McCarthy, a 2004 Department of Environmental Protection report claims, from the Florida Department of Environmental Protection, due to the relatively large geographic area covered by forest and other vegetation in the Gulf area of Florida, biogenic VOC, volatile organic compounds, emissions make up to 20—I'm sorry—up to 80 to 90 percent of the total VOCs emitted on a typical summer day.

Another Florida Department of Environmental Protection report states EPA also should consider whether natural background concentrations would preclude compliance with the EPA's proposed standards in certain geographic areas. For example, EPA estimates that 70 to 80 percent of the seasonal mean ozone levels in Florida are attributed to background contributions. And so my question is, how could they comply with the new requirement of 65 to 70 if nature gives them 70 to 80 for a start?

Ms. MCCARTHY. Well, Congressman, let me assure you that states are not held responsible for reducing emissions that are not in their control. The Clean Air Act is very clear about that. So there was a great discussion, frankly——

Mr. POSEY. Okay. You've stated that's a fact. I'll accept that.

Ms. MCCARTHY. Okay. Thank you.

Mr. POSEY. With regard to the Clean Power Plan, are you at all concerned about the increasing costs of electricity and causing many of the poor, which my colleague just referred to just a moment ago he seemed so concerned about, and also seniors to make difficult choices as to which necessities in life they can afford due to the increase in their electric bills, and they may possibly be extreme.

Ms. MCCARTHY. Well, let me be clear. I am always concerned about the economic consequences of our rules, and we seek very much to make sure that those are as minimal as possible, and if you take a look at the Carbon Pollution Plan, that's why we made it so flexible so states could design their own plans to ensure that electricity would be reliable and affordable. Projections indicate that when this rule—at the time of the final goal in 2030, the final standard, you're actually looking at a decrease in what people have to pay a month for their electricity.

Mr. POSEY. So how much could the people, the senior citizens of Florida, how much can they expect their rates to go down because of this new rule that you're going to pass?

Ms. MCCARTHY. They can expect their bills to go down by about eight percent in 2030, according to our projections.

Mr. POSEY. 2030. Okay. What about between now and 2030?

Ms. MCCARTHY. At most, the increase is a gallon of milk. It's about three dollars.

Mr. POSEY. About three dollars.

Ms. MCCARTHY. A month.

Mr. POSEY. For what? What volume——

Ms. MCCARTHY. That would be on an electric bill. So if you pay $100 today, it could be as much as $103 I believe in 2025. But over time that——

Mr. POSEY. Before my time runs out, did I hear you say—did I hear this correctly, that of the 6,000 messages you received or sent

on your government-issued BlackBerry and your government-issued iPhone, that only one or two of those were official business? Did I hear that correctly?

Ms. MCCARTHY. Only one or two of those were actually records under the Federal Records Act that should be preserved. Now, there were exchanges about "I'm late for this meeting" or that. Those are transitory and those are not to be preserved. That's how the Federal Records Act works because they're not substantive. So——

Mr. POSEY. So——

Ms. MCCARTHY. —the two substantive ones that I knew about I preserved.

Mr. POSEY. So out of 6,000, you only had two substantive transmissions out of 6,000?

Ms. MCCARTHY. We highly discourage through policy the use of mobile devices for the very reason that we need to make sure that we're preserving records. So we highly discourage it, and frankly, I do not use it—to my recollection, I only started using text because my kids wouldn't answer my phone calls.

Mr. POSEY. Did you receive or send any message to any special-interest groups interested in the environment from your iPhone or your BlackBerry? Out of 6,000 in five years, you never once, never once, you're telling us, ever once sent a substantive message or received a substantive message from a special-interest group pertaining to the environment. Is that correct?

Ms. MCCARTHY. To my recollection, the two that needed to be preserved were preserved.

Mr. POSEY. Just—you can say yes or no.

Ms. MCCARTHY. I don't—that's my best answer.

Mr. POSEY. You cannot tell me that you never received any other substantive message or sent one to a special——

Ms. MCCARTHY. Are we talking about text message or——

Chairman SMITH. The gentleman's time——

Mr. POSEY. Anything through your BlackBerry——

Ms. MCCARTHY. Emails——

Mr. POSEY. —or your iPhone.

Ms. MCCARTHY. —would have come in. Emails would have come in.

Chairman SMITH. The gentleman's time——

Ms. MCCARTHY. But those are preserved.

Chairman SMITH. The gentleman's time is expired. I thank Mr. Posey, and we'll go to the gentleman from California, Mr. Swalwell, for his questions.

Mr. SWALWELL. Thank you, Chair, and thank you, Administrator. Did you want to follow up on that?

Ms. MCCARTHY. Well, I just wanted to indicate that out of the two text messages that I preserved, I think one was from an outside constituency, an environmental advocacy organization. That's why I preserved it. But that's what I was trying to recall. But beyond that, I didn't know if his question related to emails, which is in the system and preserved.

Mr. SWALWELL. I didn't know what the question was either.

Ms. MCCARTHY. Okay.

Mr. SWALWELL. Thank you.

Administrator, in California, you know, we don't really have the choice of having a debate about whether or not we believe that climate change is occurring. We live with a climate that is drastically changing. We have the worst drought in our state's history. The good people of my district have put upon themselves drought restriction—or drought conservation measures of up to 30 percent conservation. And so I was hoping you could elaborate on how extreme weather events are impacting states and the types of challenges state and local governments will face when dealing with more regular events.

Ms. MCCARTHY. Well, I'm happy to because the changes that we're already seeing in extreme weather in the United States include heavier downpours that are just getting more intense. Heat waves are becoming more frequent and intense. Intensity, frequency and duration of North Atlantic hurricanes have increased since the early 1980s. Winter storms have increased in frequency and intensity. We're talking about floods have decreased in the Southwest but they're really increasing in the North and East. We have droughts that we've not seen for the last 800 years and so we are seeing already extreme results, and we've recently put out a report that I'd encourage you to take a look at, which shows that if we don't take global action, what our world—what the world's going to look like that we're handing to our children in the next 50 and our grandchildren in the next 100 years.

Mr. SWALWELL. Thank you, Administrator.

And also, I wanted to briefly touch upon renewable energy. Last September, the New York Times featured Germany and its efforts with offshore wind, and they will very shortly receive 30 percent of their energy from renewable sources, and there are many other countries that are close behind, but one of those countries that is not close behind is the United States. We're still around 10 to 12 percent from renewable sources, and that's largely—that is not wind and solar. And so would you agree, Administrator, that the best way to reduce carbon emissions would be to make investment—aside from policies but in the long run would to be make investments in renewable sources that provide energy?

Ms. MCCARTHY. Well, I think the general public is speaking with their dollars on that because renewable is getting less expensive as time goes on, and we're seeing, in terms of renewables, three times as much wind as prior to this Administration, 10 times more solar. It's competing. I would absolutely agree that it is a technology of the future—of the present and the future.

Energy efficiency is also a significant opportunity for investment. If you don't demand the electricity, you don't have to worry about the carbon that's emitted from it.

Mr. SWALWELL. And knowing the scientists that you deal with, some of the biggest brains in the world across our great country, do you believe that we are less capable as a country than Germany——

Ms. MCCARTHY. No.

Mr. SWALWELL. —in achieving 30 percent of our energy from renewable energy?

Ms. MCCARTHY. I think that's the President's frustration is that we have an opportunity to lead the future, and that future would

be better for us economically. We are growing more jobs in the solar sector than any sector of the economy. We can do better, and the Clean Power Plan will hopefully continue to spark that investment in innovation.

Mr. SWALWELL. Thank you, Administrator, and I also want to thank my colleague from New York for letting me jump ahead of him so I could make my way to the Floor, and I yield back, Mr. Chair.

Chairman SMITH. Okay. Thank you, Mr. Swalwell.

I will go to the gentleman from Kentucky, Mr. Massie, for his questions.

Mr. MASSIE. Thank you, Mr. Chairman.

Ms. McCarthy, I'd like to start with some questions. In a discussion that you and I had when you were here in November of 2013, I asked if the EPA was looking into regulating methane emissions from cattle, and I don't expect you to recall that but—so I'll read to you the transcript of our conversation. I asked if you're aware that methane emissions from cattle—"can you assure us today that you are not looking—or that you are not investigating that?" And you said "I am not looking at that." And then I asked "Nobody in the EPA is?" And you said, "Not that I am aware of." Now, we're talking about methane emissions from cattle. That was in November of 2013.

Now, in March of 2014, just four months later, the President issued a Climate Action Plan called Strategy to Reduce Methane Emissions, targeting a number of industries for methane emissions reductions, including agriculture, including cattle. And then one month later, April of 2014, just five months after you and I had this discussion, the EPA put out a document talking about the sources and sinks of greenhouse gas emissions and there's an entire chapter in here dedicated to agricultural emissions, particularly cattle, beef cattle and dairy cattle.

So, if I would ask this question again today, would you have a different answer? The question is is anybody at the EPA looking at or investigating methane emissions from cattle?

Ms. MCCARTHY. Well, sir, as you teed it up in this discussion, you started by talking about are we regulating or considering regulating. I believe that was the context of my answer and it remains exactly the same. No.

Mr. MASSIE. You are not?

Ms. MCCARTHY. No.

Mr. MASSIE. And you can give us that assurance? You have no intention of regulating methane emissions——

Ms. MCCARTHY. And the president is not suggesting that either. What he is suggesting is that it is a source of carbon emissions that lends itself very well to us working with agriculture to develop the technologies that reduce that. And EPA has been engaged in that issue for a very long time.

Mr. MASSIE. Well, maybe like you've been working with the wood boiler—woodstove industry, you know——

Ms. MCCARTHY. We have been.

Mr. MASSIE. Yeah, exactly. Well, I want to ask you about that. So——

Ms. MCCARTHY. Okay.

Mr. MASSIE. —you issued the final ruling on that in February, I believe. Do you think it's wrong or does it bother you at all if you promulgate a regulation that most Americans are against?

Ms. MCCARTHY. Is it—if I—if they get a chance to see it and understand it, it would bother me very much.

Mr. MASSIE. Well, it bothers me, too, and so the irony of you being here today or coincidence is we're going to have a vote on the Floor here in a few hours about your regulation that you promulgated——

Ms. MCCARTHY. Oh.

Mr. MASSIE. —on wood-burning stoves, and it's on the appropriations bill for your department. And I'm going to make a prediction. I'm going to predict that the people's House votes not to fund that regulation because the majority of our constituents don't support it. And I'm also going to predict it's going to be a bipartisan vote. So I hope you take a good look at that——

Ms. MCCARTHY. Well, sir, I just hope you take a look at it because we worked with the industry very well. It's about working with them to give them the time to take advantage of new technologies that will make it better for everybody.

Mr. MASSIE. I'm glad you worked with the industry because I've been talking to them, too, and do you know what it's going to cost to update their models to comply with your regulations?

Ms. MCCARTHY. Update their models? Well, all I know is that we worked on the timeline that was extensive for those small businesses——

Mr. MASSIE. Well, somebody at the EPA——

Ms. MCCARTHY. —that needed to take a look——

Mr. MASSIE. —knows what it's going to cost because you've published that, along with the rules——

Ms. MCCARTHY. I just don't have it at my fingertips.

Mr. MASSIE. Okay. Well, it's $1 million per model for hydronic heaters. Let's say there are 50 models out there. What we're talking about is $50 million cost to this industry. These are small manufacturers making a product. By the way, are you aware that their product is eligible for a renewable energy tax credit? I find this very ironic because what they produce is a carbon-neutral source of heat for middle-income and low-income Americans that the government provides a tax credit for, yet you are adding $50 million of cost just for one type of these heaters.

Ms. MCCARTHY. Sir, the emissions from woodstoves is work that we have been working with States for a long time.

Mr. MASSIE. And I would argue——

Ms. MCCARTHY. They can be a significant source of emissions that don't need to be emitted if we work with——

Mr. MASSIE. Let me ask you this——

Ms. MCCARTHY. —the industry to provide them opportunities——

Mr. MASSIE. —since you've been working with the States, would you acknowledge that each State has different requirements and they're unique——

Ms. MCCARTHY. Which is why the industry in the States wanted EPA to do a rule that smoothed those requirements specifically for the businesses selling——

Mr. MASSIE. The industry——

Ms. MCCARTHY. —woodstoves.

Mr. MASSIE. —is not happy about spending millions of dollars to upgrade their products because of a one-size-fits-all, top-down rule from the EPA.

I thank you and I yield back.

Chairman SMITH. Okay. Thank you, Mr. Massie.

And the gentleman from New York, Mr. Tonko, is recognized for his questions.

Mr. TONKO. Thank you, Mr. Chair. And welcome, Ambassador McCarthy. Thank you for your leadership and——

Ms. MCCARTHY. Oh, there you are. I was looking for you. So sorry.

Mr. TONKO. No, that's okay.

Ms. MCCARTHY. I don't know how I missed you. There's a lot of empty chairs.

Mr. TONKO. There you go. Thank you for your leadership and your obvious grasp of the issues is a tremendous benefit to EPA.

The hearing today is again a revival of hearings we've held before, proposals to strengthen standards to protect public health and the environment and claims that meeting the standards will be too costly, possibly not achievable, and in general a serious drag on our economy. So I have a number of questions for you, Administrator.

The Clean Air Science Advisory Committee, or CASAC, was created in the—with the 1977 Clean Air Act amendments. Their first report on ozone came out in the mid-1980s and there have been a number of subsequent reviews over the past 35 years with much new research since the original report. Has CASAC found that ozone is a less of a health risk than 1980 science determined it was?

Ms. MCCARTHY. No, sir, they found that it is increasingly of concern.

Mr. TONKO. Thank you. And does it contribute less to other environmental problems, for instance, damage to plants, visibility, and other effects?

Ms. MCCARTHY. No. We are now realizing just how much damage it actually causes.

Mr. TONKO. And so if anything research over the years has confirmed that ozone is a health risk and an environmental problem. Is that correct——

Ms. MCCARTHY. Yes.

Mr. TONKO. —as a statement?

Ms. MCCARTHY. Yes.

Mr. TONKO. Well, have passed standards been criticized on the basis of their projected cost and benefits?

Ms. MCCARTHY. Always.

Mr. TONKO. I think your testimony points out that we have been able to achieve cleaner air and grow the economy, as we have strengthened the standards, and is that correct?

Ms. MCCARTHY. That is correct.

Mr. TONKO. Any reason to believe we cannot keep that record going?

Ms. MCCARTHY. None.

Mr. TONKO. Well, will the States have flexibility and discretion to determine how they might meet new standards in the most cost-effective way?

Ms. MCCARTHY. That is exactly the choice we're giving them, yes.

Mr. TONKO. Climate change also has the potential to exacerbate the existing health conditions such as asthma and adversely impact vulnerable populations like our children and our elderly. How do you respond to those who ignore the role climate change has on public health?

Ms. MCCARTHY. I ask them to trust the scientists. There—it is a majority, if the—overwhelming majority and we need to make action now.

Mr. TONKO. Thank you. I would hope that a committee dubbed Science, Space, and Technology would embrace science.

Also, what kinds of ongoing health risks are expected if we do not act and current climate trends continue?

Ms. MCCARTHY. Well, if you look at the report that we put out, we are talking about a tremendous loss of lives, huge economic consequences, environmental damage if we do not take global action. And U.S. leadership is essential to allowing the world to get the momentum they need to address this significant problem.

Mr. TONKO. And how will policies that the Administration is seeking to implement address the public health impacts associated with climate change?

Ms. MCCARTHY. Well, we're going to be reducing carbon pollution, which also brings with it significant co-benefits. There's significant opportunities to reduce other traditional pollutants. But the one thing that I think we always keep forgetting is that climate change is actually impacting the economy today. Don't tell me it isn't in California; don't tell me it wasn't when Hurricane Sandy hit in New York. These are costs to us today that are only getting worse and worse, and if you look at Action on Climate and see the kind of economic benefits it can provide that will not just protect us from escalating carbon but grow a carbon—a low-carbon future with new jobs, that is the goalpost that all of us are looking for. That's why we designed the carbon pollution plan as flexibly as we did.

Mr. TONKO. Thank you. I, certainly as a New Yorker, would——

Ms. MCCARTHY. Yeah.

Mr. TONKO. —associate with the comments you just made. As a New Yorker and one who works at NYSERDA, the State Energy Research and Development Authority, I was very much involved with the Regional Gas Initiative, RGGI. And the State of Massachusetts' Department of Environmental Protection head Dr. David Cash said that "wise environmental protection and robust economic development can and should go hand in hand." Would you comment on that statement? He indicated that—they touted a seven percent increase in economic growth——

Ms. MCCARTHY. Yeah.

Mr. TONKO. —in the region while cutting carbon emissions by 40 percent.

Ms. MCCARTHY. Yeah, the Regional Greenhouse Gas Initiative has been enormously successful. I think they recognize that if they challenge the utilities to be more efficient, if they provide opportu-

nities for renewables and energy efficiency to be supported, that it not only gets you the environmental benefits you're looking for but it really tremendously sparks the economy.

You know, Massachusetts, having—living there, Massachusetts actually bounced back better from the economic downturn than other States and it was credited by the Governor that it was because of the new technology businesses, the way they have embraced the future that allowed them to have less of a downturn and bounce back quicker. So this has to be part of an economic strategy. You cannot have climate happen and not pay attention to the cost today, the escalating cost tomorrow, and the tremendous benefits if you stand up tall and do what is our moral responsibility. That is the——

Chairman SMITH. The gentleman's time has expired.

Mr. TONKO. Well, I thank you, Mr. Chair, and I thank the Administrator again for her awesome leadership.

Chairman SMITH. Thank you, Mr. Tonko.

The gentleman from Oklahoma, Mr. Bridenstine, is recognized for his questions.

Mr. BRIDENSTINE. Thank you, Mr. Chairman.

I'd like to start by showing a brief video clip here.

[Video shown.]

Mr. BRIDENSTINE. The tremendous outreach, Administrator McCarthy, is one thing, but when you use this outreach intentionally to generate nearly a million positive comments on your Waters of the United States rule, and not only using that outreach from activist groups outside the organization, but I have in front of me a newsletter from an EPA manager in it looks like Region 5, and it says "EPA is planning to use a new social media application called Thunderclap to provide a way for people to show their support for the Agency's proposal."

So now you're using social media tools to advocate for your agency's proposal, and this Thunderclap program, it's a social media aggregator that, you know, includes Facebook and Twitter and a host of other social media tools, and you're using your employees to advocate for your proposals and activating outside activist groups.

Then before the Senate EPW Committee you testified that the EPA's Waters of the United States rule is justified because nearly 90 percent of the comments the EPA received favored the proposed rule. So you're hijacking the comment process, then you're using that data to justify your role before the Senate EPW Committee. I'd like to ask you, to your knowledge, did EPA engage in a legal analysis to determine whether using Thunderclap in this manner violated the Anti-Lobbying Act prior to engaging in that activity?

Ms. MCCARTHY. There was no question in terms of the Agency that we had done and were doing nothing that constituted lobbying. That would be against the Anti-Lobbying Act. And it is well within the boundaries set by the federal government——

Mr. BRIDENSTINE. Would you answer yes or no? Did—I'm asking you the question. Did you get any legal analysis before using Thunderclap and pressuring your employees to use Thunderclap—look, I've got the newsletter here——

Ms. McCarthy. No one's pressured an employee to use Thunderclap.

Mr. Bridenstine. If your agency——

Ms. McCarthy. I'm not aware of that.

Mr. Bridenstine. If your agency is using a newsletter telling people to sign up for Thunderclap and promote the Agency's proposal, would that not be an ethical violation where you're using your employees to advocate for your proposed rule?

Ms. McCarthy. Let's dissect this if we could, sir. The question you posed to me was whether or not our use of social media was lobbying. It was not. It was education, it was outreach, it was getting people engaged, it was exactly what everyone tells us to do and it's part of the——

Mr. Bridenstine. Well, no, this is a different level because there is an email here from an employee that was very concerned about feeling that kind of pressure, and that employee contacted——

Ms. McCarthy. Well, yeah——

Mr. Bridenstine. —the Regional Judicial Officer, Assistant Deputy of Ethics Official, and there is agreement that this is a national concern and it says "there is agreement that it is a problem."

Ms. McCarthy. That's why I wanted to dissect this. The second question you asked was about an employee who took that and actually copied it in and shared it with others in the Agency, which was in fact inappropriate and that person has been——

Mr. Bridenstine. It was an agency newsletter, was it not?

Ms. McCarthy. Not that I am aware of. I don't know what it appeared in, sir, but he's been counseled, and as far as we know, nobody reacted——

Mr. Bridenstine. It says from the Weekly DD News Item. I would like to know what the Weekly DD News Item is and why it's coming from a Regional Director——

Ms. McCarthy. It was a Division Director who made a mistake. He was counseled and I don't want you to get confused by EPA's effort to engage people in the work that it's doing and get them active in considering how important clean water is.

Mr. Bridenstine. So you do realize that your own Regional Judicial Officer, Assistant Deputy Ethics Official says that this is a problem.

My next question for you is what are you doing about that problem?

Ms. McCarthy. There—it is—the information is no—as far as I know, he's been counseled to not do that. It should not have happened but that has nothing to do with the fact that we use social media——

Mr. Bridenstine. There's two major concerns here. One is a potential violation of law with the Anti-Lobbying Act. That's—I'm a Navy pilot by trade. I currently serve in the Oklahoma Air National Guard.

Ms. McCarthy. Okay.

Mr. Bridenstine. I fought in the war in Iraq in the beginning. Imagine if President Bush during the war in Iraq said we need our agency—we need our Department of Defense employees to advocate for removing Saddam Hussein. How do you think that would re-

spond—we would feel pressure as employees of the Department of Defense to do that.

Now, this is something that your agency has been involved in, so the Anti-Lobbying Act is of concern to me and we're going to look further into that. I hope we do, Mr. Chairman.

And number two, putting pressure on employees to promote the Waters of the United States rule, maybe that's not a violation of law but it's certainly a violation of ethics.

I'm out of time, Mr. Chairman, and I yield back.

Chairman SMITH. The gentleman is—thank you, Mr. Bridenstine.

And the gentleman from Texas, Mr. Weber, is recognized for his questions.

Mr. WEBER. Thank you, Mr. Chairman, and Administrator McCarthy, thank you for being here.

Ms. MCCARTHY. Thank you.

Mr. WEBER. A couple of questions for you, yes or no. Do you know what state has been the number one exporting state in about 12 to 14 years running in the country?

Ms. MCCARTHY. No, sir.

Mr. WEBER. Texas. Do you know who's been the number one job-producing state in many years producing more jobs than all the other lesser 49 states combined?

Ms. MCCARTHY. Can I guess? Texas.

Mr. WEBER. What do we have for her, Johnny?

Do you know who has the second-largest environmental regulatory agency in the world?

Ms. MCCARTHY. Texas?

Mr. WEBER. You got it. TCEQ.

Ms. MCCARTHY. Yeah.

Mr. WEBER. Serving on the Texas Legislature I served on the Environmental Regulations Committee. Do you know of how good Texas' economy is compared to the other what I call lesser 49 states?

Ms. MCCARTHY. I do not know.

Mr. WEBER. It's way up there.

And finally, do you know what state has its own electric grid?

Ms. MCCARTHY. Texas does.

Mr. WEBER. You're batting—almost batting a thousand. You're doing a good job. Texas is——

Ms. MCCARTHY. Don't trick me and ask me a trick question.

Mr. WEBER. Texas does really—you don't want that. Texas does really well.

Mr. Chairman, I have five articles here about the proposed rule that I'd like to submit for the record.

Chairman SMITH. Without objection, so ordered.

[The information appears in Appendix III]

Mr. WEBER. Thank you.

Administrator McCarthy, you made a statement before the Energy and Commerce Committee that the Clean Power Plan is "not a pollution control strategy." Do you remember making that comment?

Ms. MCCARTHY. Where did I make that comment, sir?

Mr. WEBER. In front of the Energy and Commerce Committee.

Ms. MCCARTHY. I don't know.

Mr. WEBER. Okay.

Ms. MCCARTHY. I don't know in what context. It's a carbon pollution—

Mr. WEBER. Well, and today it's been your testimony in your exchange with Congresswoman Clark and then also with Congressman Tonko here that we have a "moral obligation."

Ms. MCCARTHY. We do.

Mr. WEBER. Is that accurate?

Ms. MCCARTHY. To act on climate, yes.

Mr. WEBER. Okay. Well, so at some point you said that the EPA was not empowered by the legislation to consider cost. You said that today also. But then you come back——

Ms. MCCARTHY. No, sir, not on the carbon pollution—

Mr. WEBER. Not on the carbon pollution stance.

Ms. MCCARTHY. We actually have to consider cost.

Mr. WEBER. Okay. So if you considered the cost—and I believe that this has been titled the most costliest regulation in history, okay—why is the EPA imposing these costly regulations on the American people when you admitted to the Energy and Commerce Committee it's really not about protecting the environment?

Ms. MCCARTHY. I don't know the context of that, sir, but this is not a—one of our most significant cost rules. It actually is enormously beneficial.

Mr. WEBER. Okay. Well, let's go on then.

In 2008 then-Senator Obama was running and he said "under my plan"—it was of a cap-and-trade system—"electricity rates will necessarily skyrocket." So the President is looking forward to driving up—do you remember that comment, by the way?

Ms. MCCARTHY. I've heard of it.

Mr. WEBER. You've heard that?

Ms. MCCARTHY. It was raised to—

Mr. WEBER. Have you seen the YouTube?

Ms. MCCARTHY. I may have.

Mr. WEBER. Okay. So you know that that was on his mind to drive electricity prices up. And, by the way, that was in January of 2008 in an interview by the San Francisco Chronicle.

Now, the Chairman had the U.S. Energy Information Administration do a study and they recently came out and said that in fact under the Clean Power Plan, electricity prices will be driven up. Are you aware of that, Administrator?

Ms. MCCARTHY. I am aware that there are studies that say that, yes.

Mr. WEBER. No, but I'm talking about the Energy Information Administration. And you know they're bipartisan and you know they don't consider cost; they just look at the facts. They're not beholden to any government agency. Is that a true fact?

Ms. MCCARTHY. That they are independent.

Mr. WEBER. That's right. Thank you.

Ms. MCCARTHY. They were asked to do this—

Mr. WEBER. Thank you for saying that. And you're aware in their study they said that a family of four could see thousands of dollars increase in their electricity prices. I'm an air-conditioning contractor, 34 years, and I'm glad to hear that there are some glad colleagues on the other side of the aisle who are glad that we're look-

ing out for poor people. I've been in many homes in 34 years where people could not afford air-conditioning repair, and when their electricity bill goes up 5, 7, ten percent, it hits them hard. And so we looked at this very closely. I'm extremely familiar with energy costs.

So when the Energy Information Administration came out and said—and other stakeholder groups, by the way—that the Clean Power Plan and other EPA regulations will increase electricity prices for the American people—and let me add based on my experience of 34 years as an air-conditioning contractor and watching power very carefully—it's going to disproportionately impact low-income families. Do you agree with that?

Ms. MCCARTHY. We're working very hard to give the States the flexibility to not have that happen.

Mr. WEBER. Have you ever been in the homes of low-income people when they've had to spend money on their air-conditioner that was inefficient?

Ms. MCCARTHY. Yes.

Mr. WEBER. Yeah. It's kind of sad, isn't it?

Ms. MCCARTHY. Well, what we're hoping is that this will not only protect them and their public health-

Mr. WEBER. Let me move on. Let me move on. I'm running out of time.

Ms. MCCARTHY. Okay.

Mr. WEBER. In fact, I'm out of time.

Chairman SMITH. The gentleman's time—

Mr. WEBER. I'm going to yield back.

Chairman SMITH. —has expired. Thank you, Mr. Weber.

Now, the gentleman from Ohio, Mr. Johnson, is recognized for his questions.

Mr. JOHNSON OF OHIO. Well, thank you, Mr. Chairman.

And, Director McCarthy, thank you for being here today. I've got a lot of ground to cover so I'd like to—I'm going to ask you some very specific questions. They're not—the questions themselves are not very complex. The answers are pretty much yes-or-no answers. Can we have an agreement that if I ask you something that you don't understand, ask me for clarification and I'll go back and clarify the question? But I want to move through these so we can get through them as many as we can. Is that okay with you?

Ms. MCCARTHY. I'll do the best I can.

Mr. JOHNSON OF OHIO. Okay. Great.

I want to go down the road of the independency. And we've heard the term "independent science." We've heard that spoken here several times today. According to news reports, including a recent New York Times article, the EPA has a pretty cozy relationship with third-party environmental groups such as the Sierra Club and the NRDC, who are attempting to influence agency policy. Given these stories, and I'm sure you've seen some of them, is it EPA policy, Director McCarthy, to request that these third-party groups write reports to support the Agency's position?

Ms. MCCARTHY. I don't know of any agency policy that——

Mr. JOHNSON OF OHIO. Okay. Well, great. Let's have slide #1 come up.

[Slide.]

Mr. JOHNSON OF OHIO. According to this email obtained by the Committee, then-EPA Policy Director Michael Goo writes to the NRDC that "maybe a report or two from the NRDC showing that no new coal plants are being built might be helpful in order to provide cover for a draft EPA rule on new fossil power plants." Are you surprised that the EPA Policy Director—I mean this is a pretty high position—requested that the NRDC draft a report related to an EPA rule? Have you ever seen that before?

Ms. MCCARTHY. No, I haven't seen it.

Mr. JOHNSON OF OHIO. Okay. So it's——

Ms. MCCARTHY. I——

Mr. JOHNSON OF OHIO. Does it surprise you that the Policy Director would ask an outside group to do something like that?

Ms. MCCARTHY. Well, I—you know, I assume he's had communication. I was not aware——

Mr. JOHNSON OF OHIO. Well, would you take that——

Ms. MCCARTHY. —of it and I haven't seen this before.

Mr. JOHNSON OF OHIO. Would you take that and get back to us about how that conflicts with—if it's not your policy, if it's not the EPA's policy to do that——

Ms. MCCARTHY. Well, you asked me——

Mr. JOHNSON OF OHIO. —did he violate the policy?

Ms. MCCARTHY. —if I had a policy that to be able to do that——

Mr. JOHNSON OF OHIO. Yeah, right.

Ms. MCCARTHY. —and I answered that.

Mr. JOHNSON OF OHIO. Would you say based on this that the EPA does indeed have a cozy relationship with the these outside groups if the Agency is asking them to write reports providing cover for an EPA draft rule?

Ms. MCCARTHY. Well, all I know is that our rulemaking process is transparent, it's robust——

Mr. JOHNSON OF OHIO. Well, no, it's not transparent——

Ms. MCCARTHY. It——

Mr. JOHNSON OF OHIO. —because you're not getting comments from——

Ms. MCCARTHY. This is not out of the rulemaking process.

Mr. JOHNSON OF OHIO. —outside groups other than like the NRDC. So do you think it's appropriate that the NRDC is providing cover in their reports for proposed rules?

Ms. MCCARTHY. The—I think it's appropriate that EPA continue to do rulemaking the way it does——

Mr. JOHNSON OF OHIO. Well, I understand it's your job is to do rulemaking. The question is how transparent and how independent is it really? Is this the only time you are aware that an EPA official has ever requested a third-party group write a report regarding an EPA rule? Have you ever had this happen before?

Ms. MCCARTHY. I can't——

Mr. JOHNSON OF OHIO. Have you ever requested a report from a third-party group asking for a report while at the EPA?

Ms. MCCARTHY. I can't——

Mr. JOHNSON OF OHIO. Let's have slide #2 come up, please.

[Slide.]

Mr. JOHNSON OF OHIO. Administrator McCarthy, it appears that EPA Policy Director Michael Goo maintained a very close relation-

ship with third-party groups, even inviting employees from the League of Conservation Voters and NRDC to his house for an annual party known as the Goo Fest. According to the invitation, the party offered shots of liquor off of an ice luge and copious amounts of food and alcohol. Included in the invitation is an apparent fake quote from President Obama stating "even better than killing bin Laden, I'm jealous I don't have an Obama Fest." Are you familiar with Goo Fest?

Ms. MCCARTHY. I have never been to a Goo Fest.

Mr. JOHNSON OF OHIO. But are you familiar with it? Are you familiar with it?

Ms. MCCARTHY. I am aware that he has——

Mr. JOHNSON OF OHIO. Okay. Would you agree——

Ms. MCCARTHY. —a party every year.

Mr. JOHNSON OF OHIO. —that inviting these third-party groups from the EPA Policy Director, the League of Conservation Voters, and NRDC, would you agree that that shows a close, cozy relationship with these folks? And do you think it's appropriate for someone that's responsible for directing EPA's policy to host a party that includes attendees attempting to influence the Agency's parties?

Ms. MCCARTHY. I would agree that Michael Goo knows a lot of people in the——

Mr. JOHNSON OF OHIO. No, do you agree——

Ms. MCCARTHY. I have no——

Mr. JOHNSON OF OHIO. —that it's appropriate?

Ms. MCCARTHY. I have no reason to believe that this was about influencing——

Mr. JOHNSON OF OHIO. Oh, really.

Ms. MCCARTHY. —rulemaking, nor is there any evidence that——

Mr. JOHNSON OF OHIO. Let's—well, let's go to slide #3. Let's go to slide #3.

Well, Mr. Chairman, I am so sad that we're out of time it because I had a lot more that I wanted to cover. But out of deference to my colleagues, I'll yield back.

Chairman SMITH. Thank you, Mr. Johnson.

The gentleman from Michigan, Mr. Moolenaar, is recognized for questions.

Mr. MOOLENAAR. Thank you, Mr. Chairman. And, Administrator McCarthy, thank you for being here.

Ms. MCCARTHY. Thank you.

Mr. MOOLENAAR. I wanted to ask you a bit about the Waters of the United States rule.

Ms. MCCARTHY. Um-hum.

Mr. MOOLENAAR. Do you believe that it expands the EPA's jurisdiction in this area?

Ms. MCCARTHY. No, I do not, sir.

Mr. MOOLENAAR. You do not believe that?

Ms. MCCARTHY. No. No, sir.

Mr. MOOLENAAR. Do you feel that you will need additional funding to meet any new responsibilities based upon this rule?

Ms. MCCARTHY. Hopefully, it provides clarity to actually reduce the level of effort on all parties, including people who actually want

to get work done and need a permit. Its goal was to provide clarity, reduce confusion, and save money, as well as continue to protect the waters that are necessary for drinking water.

Mr. MOOLENAAR. And do you believe the rule was successful in providing clarity?

Ms. MCCARTHY. It—certainly that was its intent and I believe we did, yes.

Mr. MOOLENAAR. I want to read you some quotes from someone who has 20 years of experience in the field. And it's a gentleman who testified before our Committee, Bob Kerr of Kerr Environmental Services Corporation. And his comments were, "unfortunately, the rule falls well short of providing the clarity and certainty that the regulated community seeks. This rule will increase federal regulatory power over private property and will lead to increased litigation, permit requirements, and lengthy delays for any business trying to comply. Equally important, these changes will not significantly improve water quality because much of the rule improperly encompasses water features that are already regulated at the state level."

Would you—how would you respond to those comments?

Ms. MCCARTHY. I would disagree with every one of them.

Mr. MOOLENAAR. Okay. And I wanted to read another quote to you. "The only thing that is certain is how difficult it will be for me to provide jurisdictional determinations and secure permits for my clients. This rule is so convoluted that even professional consultants with decades of experience will struggle to determine what is jurisdictional."

How do you respond to that statement?

Ms. MCCARTHY. The reason we did this rule was because many in Congress and outside stakeholders asked us to do the rule to provide clarity. I believe we did that.

Mr. MOOLENAAR. Well, I understand because in your comments you make certain—you know, you mentioned your goal was to provide clarity.

Ms. MCCARTHY. Right.

Mr. MOOLENAAR. But I guess I'm trying to reconcile that with someone who has 20 years of experiences, is in advising businesses and people who are trying to comply with the law that is telling us that it does not provide clarity——

Ms. MCCARTHY. You'll—

Mr. MOOLENAAR. —and adds confusion.

Ms. MCCARTHY. Yeah. I—you'd have to speak with him because this rule actually says what's in, what's out, and boundaries for where you need to have—need to look.

Mr. MOOLENAAR. Okay.

Ms. MCCARTHY. Those things have not been clear for 15 or more years.

Mr. MOOLENAAR. In the area of—I wanted to ask you about ditches.

Ms. MCCARTHY. Yes.

Mr. MOOLENAAR. You've made a point that ditches are not included as jurisdictional in the final Waters of the United States rule. Is that correct?

Ms. MCCARTHY. No, I have made it very clear that we have—that we are only including ditches that act as tributaries that are important to protect and we have added specific exclusions to make it clear that ditches that only run once in a while that are only there for irrigation purposes, all of those issues, that we maintain all of those exclusions and we've added some for clarity purposes to try to get the ditch issue off the table.

Mr. MOOLENAAR. And so if a farmer or, you know, a business or a local government believes that their ditch is exempt, do they have to ask for an exemption or——

Ms. MCCARTHY. No.

Mr. MOOLENAAR. —can they consider that they have an exemption?

Ms. MCCARTHY. Yeah. It is exempt. And the other thing we did was to very carefully and more narrowly craft what is a jurisdictional tributary so that anyone could clearly look at it and make those determinations and so that it would limit the amount of time of the Corps and it would provide certainty to the farmers and ranchers out there.

Mr. MOOLENAAR. Okay. So if someone believes they are exempt, they are exempt and they will not have a ruling from the EPA that counters that?

Ms. MCCARTHY. The only reason you would ever come to the federal government is if you want to pollute or destroy a wetland or a water body that you think may be jurisdictional. That's when they come and ask. But it—but agriculture now knows—

Mr. MOOLENAAR. Let me just interrupt you a second because we're low——

Ms. MCCARTHY. Yeah.

Mr. MOOLENAAR. —on time, that "we think may be jurisdictional," when you say "we"——

Ms. MCCARTHY. An individual who wants to pollute or destroy a water.

Mr. MOOLENAAR. But if the individual doesn't believe it's jurisdictional——

Ms. MCCARTHY. They don't call us.

Mr. MOOLENAAR. And you would not by any way have recourse on them because they didn't call you and ask if it was jurisdictional?

Ms. MCCARTHY. Well, what we tried to do here was to make it is clear—

Mr. MOOLENAAR. No, but I'm——

Ms. MCCARTHY. —as possible—

Mr. MOOLENAAR. Right. But if——

Ms. MCCARTHY. —so that farmers and those in agriculture would actually know and feel comfortable that what they were doing was absolutely all right.

Mr. MOOLENAAR. And if you disagreed, you would not have recourse on them?

Ms. MCCARTHY. I don't—you know, we've tried to make it is clear as humanly possible—

Mr. MOOLENAAR. No, but——

Ms. MCCARTHY. —so those are disagreements would be——

Chairman SMITH. The gentleman's time has expired.

Ms. MCCARTHY. —minimized.

Chairman SMITH. I thank the gentleman.

The gentleman from California, Mr. Knight, is recognized for his questions.

Mr. KNIGHT. Thank you, Mr. Chairman. Thank you, Administrator McCarthy.

I'm going to go on a couple different lines, but one I want to follow up with the recent discussion, if we go back to our farmers and we say that if you look at these ditches and you believe that you are not polluting these waterways, these temporary waterways, these ditches, you are okay and there's no reason why the federal government should come onto your property and check these ditches out?

Ms. MCCARTHY. We have done nothing other than to hopefully provide clarity on what constitutes a tributary and what does not.

Mr. KNIGHT. Okay. Okay. I'm going to move on to California. Since all of my Texas folks are yelling and screaming about their state, I will talk about California a little bit. In a recent article, there was some discussion. I'm going to read very quickly just a couple lines. "Indeed, in some localities, especially in the western states, the new standards are approaching background levels of ozone, in other words, the level that occurs due to factors beyond local control. While EPA claims that their exceptional events exclusion is responsive to the concern, many states believe that EPA's tools to address these concerns are limited and inadequate. These concerns are spread throughout the United States and are not limited to specific geographic regions."

In California, we know that we have an awful lot of background or other things that happen to our state——

Ms. MCCARTHY. Right.

Mr. KNIGHT. —that we really don't have any control of, countries and——

Ms. MCCARTHY. Yeah.

Mr. KNIGHT. —different things that happen to our ozone. By this statement in this article, are that a true statement? Is the exclusionary rule for states like California—are we getting our bang for the buck on that?

Ms. MCCARTHY. Yeah, I think they're referring to what we call exceptional events, which is to take into recognition that things happen that are out of states' controls. So we have recently done one just maybe a few years ago that clarified dust issues, you know, all of the ways in which you can have dust storms arise, and that seems to have resolved a lot of issues. We also know there are issues with wildfires that we have to address. That is actually going to be a rulemaking that we're moving forward with so that it doesn't interfere with the states' ability to be able to make attainment. So we're really trying hard.

Mr. KNIGHT. Okay. And that——

Ms. MCCARTHY. And there are other tools that we can use as well.

Mr. KNIGHT. And that'll follow up on another article that I'd like to be put into the record, Mr. Chair. It's from the San Joaquin Valley Air Pollution Control District, and we have many control dis-

tricts, air pollution, air quality management districts in California that are very restrictive——

Ms. MCCARTHY. They work hard——

Mr. KNIGHT. —very difficult. Our south coast and San Joaquin are two very difficult ones because of all of the mitigating factors and the background that happens to these two.

But it was brought up from the San Joaquin that pending standards for ozone and standards for PM2.5 require different deadlines and different attainments. And their solution or their worries is that sometimes when they get new regulations or new attainments that the old ones do not fall off and that they have to continue to take those reports and those kinds of standards. Is that something that we can correct at the EPA?

Ms. MCCARTHY. Well, we're really trying to make two things happen. One is to enhance the states' ability to do multi-pollutant plans so that they don't do separately PM and ozone but think about them together so that a similar strategy can be available for both. But we also take a look at how we can more effectively and quickly deal with re-designations so that those that have achieved the standards have an ability to not be captured in constant SIP world, State Implementation Plan world.

It is challenging because we know that we don't want the states to stop doing things that they were obligated to do that got that achievement there——

Mr. KNIGHT. Yeah.

Ms. MCCARTHY. —but it's hard to keep that and then move forward with continuous improvements.

Mr. KNIGHT. I would ask that if you could allow the states to be able to get these attainments by their——

Ms. MCCARTHY. Yeah.

Mr. KNIGHT. —by working on a standard that works for their state——

Ms. MCCARTHY. Yeah.

Mr. KNIGHT. —and maybe letting them work with their districts, whether it be California Air Resources Board or whoever in the other 49 states. It might be——

Ms. MCCARTHY. I know how hard they work——

Mr. KNIGHT. —helpful.

Ms. MCCARTHY. Yeah.

Mr. KNIGHT. And secondly, if we can make it so that they understand what they're doing every year and they don't have to continually look back and continually do the things that maybe have been required of them in years past. That would make it a lot more helpful.

Ms. MCCARTHY. I assure you we will do the best we can. I know how hard they work and how much they care about the same things that you and I do.

Mr. KNIGHT. And thank you, Administrator, for coming in and I yield back the balance of my time.

Mr. BRIDENSTINE. [Presiding] The gentleman yields back.

The gentleman from Texas, Mr. Babin, is recognized for five minutes.

Mr. BABIN. Thank you, Mr. Chairman.

Mrs. McCarthy, I would like to put something up on the screen to show a picture.

[Slide.]

Mr. BABIN. This is Houston, Texas, which I have in my district, part of. It shows the twice-a-day traffic for commuters for two million people in the City of Houston, twice a day. Under your regulations and the Clean Air Act for traffic conformity, we would not be able to expand or add new lanes since most of my district, including Harris County, which we're looking at here, is not in attainment under the current standards, much less under the new proposed rules. I would ask you, do you think this is a good idea when Houston, Texas, is one of the fastest-growing cities and areas in the entire country, that we cannot add any lanes to these thoroughfares here?

Ms. MCCARTHY. I was looking to see myself in that picture. I've been stuck there before.

Mr. BABIN. I may be in there, too.

Ms. MCCARTHY. We work very hard when there are construction issues that arise, new lanes they need to be added, to work through the traffic conformity issues. It is not a carte blanche ban on doing new roadways.

Mr. BABIN. So you're saying that we—that the City of Houston, the County of Harris would be able to add lanes to this——

Ms. MCCARTHY. Just because you're in——

Mr. BABIN. —thoroughfare?

Ms. MCCARTHY. —nonattainment does not mean that you can't——

Mr. BABIN. Okay. That's fine.

Ms. MCCARTHY. —move forward. It just means we have to work together to make that happen.

Mr. BABIN. I got you. I'm going to remember that, okay? I'm going to tell the folks back home that we can add lanes.

Ms. MCCARTHY. Well——

Mr. BABIN. Let me tell you how many jobs are at stake with this new regulation, which will cost the American people, as we've heard today but I'd like to say it again, $140 billion every year, with a B. EPA's new proposed regulations would cost my home State of Texas $286 billion—now, this is over the next 20 years, 23 years up until 2040, $286 billion in gross state product losses. It will cost us 347,322 lost jobs per year, $1,430 drop in average household consumption per year, and $39 billion, with a B, for my constituents in Texas to operate their vehicles in those 23 years as well.

This will be one of the most costly regulations ever issued in history for the American public and especially for my home State of Texas. I have one of the most highly industrialized districts in the country. If one of my constituents loses their job because of this regulation, what would you say to him or her? Because these folks are needing to provide jobs—needing their jobs to provide for their families. And how can you justify this? Give me a short answer, please.

Ms. MCCARTHY. Well, sir, I don't know what numbers you're looking at that——

Mr. BABIN. These are numbers that came from the National Association of Manufacturers. These came right off of here as well.

Ms. MCCARTHY. These are the exact—they might as well have recycled them from the last time we did and ozone standard and it wasn't true then and it is not true now.

Mr. BABIN. Well, why are all these stakeholders, thousands of them, saying that——

Ms. MCCARTHY. Yeah.

Mr. BABIN. —they can't come into compliance, that they're going to have to shut their plants down, that this is going to cause him to lay off employees?

Ms. MCCARTHY. Well——

Mr. BABIN. As we heard——

Ms. MCCARTHY. Yeah.

Mr. BABIN. As we heard Mr. Weber say a while ago in the State of Texas we have provided more than 50 percent of the jobs in the entire country over the last five years.

Ms. MCCARTHY. Well, we've followed appropriate——

Mr. BABIN. This will eliminate a lot of that.

Ms. MCCARTHY. We've followed appropriate economic impact work. It's available to you. But I think one of the things that no one seems to recognize is that the vast majority of counties across the United states are actually going to be in attainment with the new standard that's revised by 2025——

Mr. BABIN. I beg to differ with you——

Ms. MCCARTHY. —just because of what we're doing at the national level.

Mr. BABIN. —Ms. McCarthy. I beg to differ with you. We have a map here that shows that immediately we will be out of attainment. In fact, it's so severe that even Yellowstone National Park will be out of attainment immediately because of the new ozone regulations that you're proposing.

Ms. MCCARTHY. I'm happy to take a look at it, sir, if you want to provide that to me.

Mr. BABIN. I hope you will. I hope you will.

And I yield back the balance of my time, Mr. Chairman. Thank you.

Mr. BRIDENSTINE. The gentleman yields back.

And just to clarify, states and localities can lose transportation funds from the Department of Transportation——

Ms. MCCARTHY. They can.

Mr. BRIDENSTINE. —for new roads and bridges if an area is in nonattainment. That directly affects my good friend from Texas, Mr. Babin's district, as well as my own district in Oklahoma.

Ms. MCCARTHY. Can but——

Mr. BRIDENSTINE. I now recognize the gentleman from Alabama, Mr. Palmer, for five minutes.

Mr. PALMER. Thank you, Mr. Chairman.

Administrator McCarthy, from your—from the EPA—your agency wrote that EPA projections show that the vast majority of the U.S. counties would need to propose standards by 2025 just for the rules and programs now in place or underway. Is that correct?

Ms. MCCARTHY. That is correct.

Mr. PALMER. Then is it also correct that the EPA has just now—or just earlier this year started releasing guidelines for implementing the 2008 rule?

Ms. MCCARTHY. That is actually true, sir, yes.

Mr. PALMER. Then why in the world are we talking about a new standard which the EPA, based on a past hearing here, admitted the technology doesn't exist to meet this new standard, why—have—are you implementing a new standard when you haven't even implemented the last one?

Ms. MCCARTHY. Well, sir, there are still remaining a number of standards on—and this is actually an effort to do what—

Mr. PALMER. Ma'am, I don't want to get into——

Ms. MCCARTHY. Well, Congress told us to do this, sir. It is an effort to continue to look at the science—

Mr. PALMER. So if Congress——

Ms. MCCARTHY. —as to what the goals are—

Mr. PALMER. You're doing it because Congress told you to do it?

Ms. MCCARTHY. Well, I—

Mr. PALMER. That's a yes or no. Are you doing it because Congress instructed you to do it?

Ms. MCCARTHY. Yes, but for more reasons than that. Yes—

Mr. PALMER. Well, wait.

Ms. MCCARTHY. —that is what—that is my obligation.

Mr. PALMER. Your authorization for this is from Congress, is that correct?

Ms. MCCARTHY. It is and—

Mr. PALMER. Okay. So if Congress——

Ms. MCCARTHY. —I've actually been told that—by the Courts—

Mr. PALMER. —if Congress tells you not to do it——

Ms. MCCARTHY. —to do this.

Mr. PALMER. —you wouldn't do it?

Ms. MCCARTHY. I did not say that.

Mr. PALMER. No, no, but you said you go that authorization from Congress——

Ms. MCCARTHY. I told you that I'm operating under the authority and the law that you gave me to implement.

Mr. PALMER. —to do it.

Ms. MCCARTHY. I'm implementing your laws.

Mr. PALMER. Okay. So if we change the law, you won't do it. Thank you.

I would like to talk about the impact on low-income families. I grew up dirt poor so I get this. I'd just like to point out—and you're probably aware of it but I imagine most people aren't—that the National Black Chamber of Commerce has come out strongly against this, and let me read you what they said. The EPA regulations—and if they will put up slide #1, please.

[Slide.]

Mr. PALMER. They say that the "EPA regulations will increase Hispanic poverty by more than 26 percent and black poverty by more than 23 percent." This first slide shows the increases in energy burdens on black and Hispanic households who are disproportionately low income. If you'll put up the next one——

[Slide.]

Mr. PALMER. —this shows losses in median household incomes, again disproportionately impacting black and Hispanic households.

Put up the next slide, please.

[Slide.]

Mr. PALMER. This shows the projected job losses, okay? For black families by 2025 we're talking 2.2 million job losses; by 2035, 7 million. Among Hispanics, 3.8 million by 2025; by 2035, we're talking 12 million. If you put up the next slide——

[Slide.]

Mr. PALMER. —this shows the increase in the poverty rate for black households and Hispanic households. And again, reading from the National Black Chamber Of Commerce report, "the EPA regulations will increase Hispanic poverty by more than 26 percent and black poverty by more than 23 percent." Ma'am, I don't know how you justified this because it does create an enormous economic burden. It's having an enormous impact on jobs. The Economic Policy Institute, which is a left-leaning group, they basically are labor's think tank, points out that 29 percent of the unemployed—the current unemployed have been out for 27 weeks or more. Ma'am, that's over six months.

We're looking at a report from Gallup that shows that prior to 2008 there were approximately 100,000 more businesses starting up than closing. Since 2008, we're now seeing 70,000 more businesses close than startup. And the United States now in terms of how we rank with other industrialized nations in terms of entrepreneurship, job creation, we don't rank first, second, third. We rank 12th.

And I want to quote from an article from USA Today that—in trying to explain these two—in their words—"terrifying trends," the death of so many businesses and the dearth of new ones, it says there are numerous factors but one of the most obvious is America's ever-growing regulatory state. And I've sat here now for—since we started this hearing listening to you basically deny that there is an economic impact. You've even asserted that there's going to be an economic benefit. We've had numerous hearings on these—on the ozone rule, on the Clean Power Plan, and there's been several people testified that this is all justified for health benefit, but here's a study.

And, Mr. Chairman, I'd like to submit all of these for the record if I may.

Mr. BRIDENSTINE. Without objection, so ordered.

[The information appears in Appendix III]

Mr. PALMER. Here's an article in the American Journal of Public Health that makes the point that the single biggest predictor of a—in terms of respiratory health is income, and obviously I think you would agree, wouldn't you, that income is directly related to job status. Would you agree with that?

Ms. MCCARTHY. It sounds right.

Mr. PALMER. Thank you, Madam.

Mr. Chairman, I yield the balance of my time.

Mr. BRIDENSTINE. The gentleman yields back.

The gentleman from Georgia, Mr. Loudermilk, is recognized for five minutes.

Mr. LOUDERMILK. Thank you, Mr. Chairman, and, Ms. McCarthy. Thank you for being here. We're near the end. We're the low guys on the totem pole.

I chair the Subcommittee on Oversight, and just in the short time that I have been here we've asked numerous times for documents from your department and your office and continually, as mentioned earlier, rarely get those. But I was informed, as we were walking in, that coincidently we did receive a bunch of documents just before your testimony here today. And you actually mentioned in one of your responses that you have produced 15,000 documents to the Committee. If we could bring up slide one.

[Slide.]

Mr. LOUDERMILK. And we appreciate that but what I have are here is an illustration of just one page of 2,000 of these pages of document which is incoherent garbage. It's garble. It makes no sense. And so I just want to bring this to your attention. This is 2,000 pages of the 15,000 that are just like this. Either this is insulting, that there's no respect for this Committee, we're just going to send them documents, or it's a political statement. It let's just—let's shut these guys up and move on.

But I'll move on from that now. I do want to talk about economic impact. Regulations that have an impact on the American economy greater than $100 million are deemed economically significant. And Executive Order 12866, which was imposed in 1993 by the Clinton Administration, requires that agencies conduct a Regulatory Impact Analysis in which costs and benefits of economically significant rules are analyzed, as well as an analysis of potentially effective and reasonably feasible alternatives for these rules.

Now, yes or no, Administrator McCarthy, when the EPA sent the proposed Waters of the United States rule to the Office of Management and Budget for review in 2013, did the OMB deem the rule to be economically significant, meaning that it would have an economic impact of greater than $100 million? Yes or no?

Ms. MCCARTHY. I'm—I don't know the answer to that, sir, but I—give me a second and I can look it up.

Mr. LOUDERMILK. Okay. So it's—something as big as the Waters of the United States, we're unaware of whether it would have an economic impact of over $100 million? That seems that the—that should be something that we would know right away.

Ms. MCCARTHY. Actually, sir, the challenge for us is that it has no direct impact on the economy. The costs come in when it's actually being implemented.

Mr. LOUDERMILK. So did the OMB——

Ms. MCCARTHY. This is the rule that determines jurisdiction.

Mr. LOUDERMILK. But did——

Ms. MCCARTHY. It's not a rule that requires action.

Mr. LOUDERMILK. Did the OMB determine whether it was economically significant when you first requested it? That's the question.

Ms. MCCARTHY. I don't know, sir.

Mr. LOUDERMILK. You don't know.

Ms. MCCARTHY. I'll have to get back to you.

Mr. LOUDERMILK. Okay. If——

Ms. MCCARTHY. I can——

Mr. LOUDERMILK. If the EPA—well, if the OMB had indeed determine it was economic significantly—significant, would the EPA have conducted a Regulatory Impact Analysis, which is required?

Ms. MCCARTHY. Yes. Yes.

Mr. LOUDERMILK. Yes, you would have. Can we bring up slide #1?

[Slide.]

Mr. LOUDERMILK. I'd like to show you a series of emails that were produced to the Committee by EPA regarding the proposed Waters of the United States rule and its classification by the OMB as being economically significant. In this slide, this email, the Office of General Counsel, lawyer Stephen Neugeboren and Acting Deputy Director of the Office of Water Dave Evans discuss OMB's determination that the Waters of the United States rule is economically significant. David Evans writes, "economic assessment identified in direct costs that are well above $100 million a year, I think EPA has claimed the indirect effects of a definitional rule should not be used to trigger the monetary threshold identifying economically significant policy actions." Jim Laity, who is at the OMB, seems to have decided otherwise.

So it's clear that the OMB initially had determined that it is well above $100 million impact. So is it the EPA's belief that if a rule has indirect economic impacts of $100 million or more, it should not be deemed economically significant?

Ms. MCCARTHY. You should not be surprised that we often have back and forth with OMB. I would not consider that to be a determination——

Mr. LOUDERMILK. Okay. If we could go to the next slide.

[Slide.]

Mr. LOUDERMILK. In this email the EPA Office of Water employee Jim Pendergrass writes "Nancy"—who is Nancy Stoner and Ken Kopocis—"know that a Regulatory Impact Analysis may be necessary but there are some economically significant rules from EPA that haven't had an RIA," which is required according to the Executive Order we cited earlier. But he's stating here that there are some economically significant rules from EPA that haven't had an RIA. "They are checking with the Office of Policy to see if there was some agreement at the political level that we don't have to conduct an RIA," an RIA that is required by law.

The response to this email states "Good news. Tamika and Sandy talked to Ken and Ken has said that it has been agreed we do not need an RIA. Let's leave it at that."

So there was a political decision made that you don't need to do what law says that you have to do. So this email appears to show EPA made a political decision not to conduct a formal Regulatory Impact Analysis——

Ms. MCCARTHY. Maybe the way you're reading it. I don't think that's what——

Mr. LOUDERMILK. —for the proposed Waters of the United States. Who made that decision? Who made the political decision that you don't have to follow what the law says you have to follow? Was it the White House?

Mr. BRIDENSTINE. We'll have to take that for the record. The gentleman's time is expired.

Mr. LOUDERMILK. I would like to submit all the documents I have for the record.

Mr. BRIDENSTINE. Without objection, so ordered.

[The information appears in Appendix III]

Mr. LOUDERMILK. Thank you, Mr. Chairman.

Mr. BRIDENSTINE. You bet.

The gentleman from Louisiana, Mr. Abraham, is recognized for five minutes.

Mr. ABRAHAM. Thank you, Mr. Chairman.

Thank you, Ms. McCarthy, for being here. Mr. Chairman, I would also like to submit a letter that 22 healthcare professionals have signed that would argue against EPA's stance on the health benefits of these decreased ozone layers. So if you would let me admit that, I would appreciate that.

Mr. BRIDENSTINE. Without objection, so ordered.

[The information appears in Appendix III]

Mr. ABRAHAM. Ms. McCarthy, I am a physician and a scientist and I would appreciate any raw data you could give me because I can interpret them and I can certainly make my own decisions as to the raw data that some of our colleagues on the other side of the aisle said that we weren't probably I guess able to interpret, but I assure you I can. So if you could get that to me, I would appreciate it.

Ms. MCCARTHY. Actually, we've provided the data that the Chair requested and it's available for you already.

Mr. ABRAHAM. I will look at that.

Now, the other thing Ms. Johnson the Ranking Member in her opening statements referenced the integrity of the EPA. And I just want to make a comment on that. As you are probably aware that last week there was an article that came out that said that your senior counsel for Air and Radiation who you referenced in this hearing was given by the Centers of American Progress, a far-left organization, some talking points for journalists when you were trying or when he was trying to move up positions so to speak.

So, again, as a physician, as a scientist that looks a raw data and makes decision, I'm troubled to say the least when one of your people, who I'm sure are quite capable of coming up with their own opinions, are being influenced by those on one side or the other.

Now, saying that, you also have referenced increased tornadoes, hurricanes. I'm from Louisiana and I assure you we know hurricanes. But it also last week—and I think it was a Nobel-winning physicist Dr. Ivar Giaever, who used to be on President Obama's team of environmentalists, came out and said that President Obama is "dead wrong" on this global warming. And these are his words; these are not mine.

So again, if you can give me objective data where we certainly have seen increased tornadoes and hurricanes in the last five years, I would be happy to receive them.

And I want to—let's go back to asthma. Again, you have referenced this. As a physician, as a scientist, I do read a lot of epidemiology journals, and prior to this hearing I referenced the American Journal of Epidemiology volume 156, issue 10, page 977 to 983. And what I was looking at, looking at your testimony and what the EPA is going to tout was that, well, if we got increased

ozone, if we don't reduce these ozone layers, we're going to have an increased incidence of asthma and upper respiratory conditions.

Let me just state that Beijing, China, one of the filthiest cities in the world, I'm told, as far as air quality, has a prevalence of lifetime asthma of only 2.2 percent. California is 13.8. And these are despite decreased ozone layers in the United States. Now, I have treated thousands of cases of asthma in the Louisiana Delta myself and we have some pretty clean air down there. We're in the farming community. And I understand the American Lung Association has kind of got on the bandwagon for the EPA as to saying, well, increased ozone layers—or numbers could contribute to that. Well, it could; anything could. But if you look at the objective data, you have to take in to consideration pets, dust mites, pollen count, these types of things.

So I guess the question to you is do you know what percentage increase in asthma there has been over the last few decades? I've got a slide if you want to put it up there.

[Slide.]

And if you look at the slide, Ms. McCarthy, you see that asthma rates have dramatically increased, and this is despite decreasing ozone. So I guess I would ask for your comment on that.

Ms. MCCARTHY. Well, I don't think that the scientists at this point are saying that asthma is caused by ozone.

Mr. ABRAHAM. No, I agree.

Ms. MCCARTHY. The issue is that it's exacerbated.

Mr. ABRAHAM. Well, but objective data cannot prove that, and again, I can talk to any scientist you want and give me objective data, begin me some good points to argue here I guess. I've got a chart here that shows—that begs to differ.

Ms. MCCARTHY. It exacerbates the impacts of asthma because it impacts——

Mr. ABRAHAM. But anybody—you can say that, Ms. McCarthy, but you've got to prove that——

Ms. MCCARTHY. Oh, okay.

Mr. ABRAHAM. —in the scientific community, and these numbers just don't add up. And that's my point. I don't mind looking at good numbers, but I'm looking at an asthma increase with decreased ozone levels. We know they're decreasing since the Clean Air Act back 20 years ago.

Ms. MCCARTHY. We have not made any—the scientists actually have not made any connection between levels of ozone and the prevalence of asthma.

Mr. ABRAHAM. Well——

Ms. MCCARTHY. It exacerbates the impact because it makes it more difficult for asthmatics.

Mr. ABRAHAM. You can say that but you cannot prove that. And again, you want to go back——

Mr. BRIDENSTINE. The gentleman's time is expired.

Mr. ABRAHAM. Thank you, Mr. Chairman.

Mr. BRIDENSTINE. Okay. So what we're going to do now is we're going to move into a second round of questioning. We have a vote on the Floor of the House right now. It's a single vote so I'm going to chair the hearing here for this second round and I'll be replaced

here in a few minutes when one of my colleagues comes back after having voted.

So moving into the second round, Ms. McCarthy, a couple things I'd like—given some of the comments that we've heard so far, it is true that cities, municipalities, states have—they can lose their Department of Transportation funds if not in compliance with the EPA. That is absolutely true. Do you agree with that?

Ms. MCCARTHY. They can.

Mr. BRIDENSTINE. They can. And what that means is that if they can, that means they're being bullied. This is federal bullying and this is exactly what my constituents in the State of Oklahoma are absolutely—they are abhorred by this kind of federal bullying saying that you're going to lose your Department of Transportation funds if you don't comply with what an unelected, you know, government bureaucrat tells you to do. They are abhorred by that. You can argue but they are abhorred by that.

Ms. MCCARTHY. That is not a rulemaking. That is in the law and it's never, ever happened.

Mr. BRIDENSTINE. And as far as——

Ms. JOHNSON OF TEXAS. Mr. Chairman——

Mr. BRIDENSTINE. The gentlelady is recognized.

Ms. JOHNSON OF TEXAS. For an inquiry. I'm the only person on the side and I have to vote. Can you recess long enough for us to vote?

Mr. BRIDENSTINE. We're going to keep rolling because we've all got other places to be so we're just going to keep moving through.

Ms. JOHNSON OF TEXAS. A vote supersedes and the rules say that we can recess for a vote.

Mr. BRIDENSTINE. We have plenty of time. We'll get there. So I'm going to reclaim my time moving forward. As far as the economic impact, people say that this is somehow going to grow the economy, that these rules and regulations grow the economy. This has not been historical precedent. It's not the fact.

My question for you, Ms. McCarthy, in November of 2014 you had an op-ed and you stated that the Clean Air Act requires EPA to update air quality standards every five years. I'm going to repeat that. "Requires the EPA to update air quality standards every five years." However, in your testimony today you state that the Clean Air Act calls for the EPA to review the standards.

Ms. MCCARTHY. Um-hum.

Mr. BRIDENSTINE. Do you acknowledge there's a difference between update and review?

Ms. MCCARTHY. No. I mean it—you update it on the basis of science——

Mr. BRIDENSTINE. So when you review it to——

Ms. MCCARTHY. —exactly the same level——

Mr. BRIDENSTINE. When you review it and you do a cost-benefit analysis and you come to a determination——

Ms. MCCARTHY. No, you can't do a cost-benefit analysis——

Mr. BRIDENSTINE. —can you keep the standards the same?

Ms. MCCARTHY. Oh, absolutely.

Mr. BRIDENSTINE. Okay. So you don't have to update the standards? You can review them and keep them the same? You agree with that?

Ms. MCCARTHY. Just have them updated by current science. It could result in exactly the same standard.

Mr. BRIDENSTINE. So when you're doing your advocacy, some of us are concerned that you're using different language than the language you use when you testify here. So when you did your op-ed in CNN Money and you said you have to update the standards, that's different than review the standards, which is what's required by law every five years.

Ms. MCCARTHY. If you see it that way, sir, I'll try to be more careful.

Mr. BRIDENSTINE. Okay. Thank you for that.

We have heard testimony before this Committee that your agency's proposed ozone NAAQS rule will be the most expensive regulation in American history. In light of the Supreme Court's ruling and Michigan v. EPA, when can we expect the EPA to withdraw its proposed ozone NAAQS rule since economic costs were not properly taken into account and properly prioritized when formulating the rule?

Ms. MCCARTHY. We will be moving ahead to finalize the rule no later than October 1 of this year by a court order.

Mr. BRIDENSTINE. So are you suggesting that you are not going to withdraw the proposed ozone rule?

Ms. MCCARTHY. I am—have—am not now intending to withdraw the rule. I believe we have done the proper——

Mr. BRIDENSTINE. Has the cost-benefit analysis been properly taken into account?

Ms. MCCARTHY. We've believe we've properly done our Regulatory Impact Analysis, yes.

Mr. BRIDENSTINE. Okay. I think it's clear that we'll have to start over from the beginning given the Supreme Court's ruling.

With that, I'm going to go vote but I would recognize the Ranking Member.

She has departed so I will recognize Mr. Johnson for five minutes.

Mr. JOHNSON OF OHIO. Well, thank you, Mr. Chairman. And, Director McCarthy, thank you for—or, Administrator McCarthy, thank you for being here.

Let's—when we ended with the last round, you assured me that you had never been—never attended a Goo Fest. Are you familiar with the Goo Fest?

Ms. MCCARTHY. I'll be very honest with you. I got the very last invitation. I was—the one that you just showed I think was——

Mr. JOHNSON OF OHIO. Yeah.

Ms. MCCARTHY. —the only—one and only one I ever received a——

Mr. JOHNSON OF OHIO. Okay, great.

Ms. MCCARTHY. —and I did not respond.

Mr. JOHNSON OF OHIO. Would you agree, though, that the EPA Director of Policy—I mean this is the person that directs the development of policy—having a personal, private relationship, a social relationship at a thing called Goo Fest shows that the EPA—critical members of the EPA have a close relationship with these outside third-party organizations, right?

Ms. MCCARTHY. Sir, I don't think that——

Mr. JOHNSON OF OHIO. Is there any denying that?

Ms. MCCARTHY. I do not think that people are precluded from having friends in every walk of life.

Mr. JOHNSON OF OHIO. Well, I don't think so either but——

Ms. MCCARTHY. I hang out with——

Mr. JOHNSON OF OHIO. —but these are people that are influencing policy. We've already established, Ms. Administrator, that you've asked this group to do policy papers for the EPA and now you've got the EPA Policy Director in social settings with these folks. Let's go on. Let's go for slide 3.

Ms. MCCARTHY. But their ethics policies that——

Mr. JOHNSON OF OHIO. Let's go for slide 3.

[Slide.]

Mr. JOHNSON OF OHIO. In another email, Madam Administrator, from Tiernan Sittenfeld, currently the Senior Vice President for Government Affairs at the League of Conservation Voters. I'm going to show you some more evidence——

Ms. MCCARTHY. Okay.

Mr. JOHNSON OF OHIO. —that demonstrates this inappropriate relationship. Ms. Sittenfeld thanked Mr. Goo for inviting her to Goo Fest writing, "As always, I had a great time." According to the White House visitor logs, Ms. Sittenfeld has visited the White House some 71 different occasions. Administrator McCarthy, how many times have you been to the White House?

Ms. MCCARTHY. A lot.

Mr. JOHNSON OF OHIO. A lot. More than 71 times?

Ms. MCCARTHY. I don't know. I doubt it.

Mr. JOHNSON OF OHIO. You don't know? Okay.

Ms. MCCARTHY. I doubt it.

Mr. JOHNSON OF OHIO. Well, I—she's been 71 times. Are you surprised——

Ms. MCCARTHY. I think she's older than I am.

Mr. JOHNSON OF OHIO. Well, could be. I don't know. That'd be good for both of us I think. Are you surprised that Ms. Sittenfeld has visited the White House on—71 times?

Ms. MCCARTHY. I don't even know the woman.

Mr. JOHNSON OF OHIO. Well, okay. Well—but you know the position that she holds because I just told you that. She is the Vice President for Government Affairs at the League of Conservation Voters. Would you say that environmental groups have a close relationship with the White House and if the Senior Vice President for Government Affairs of the League of Conservation Voters has visited there 100 times—close to 100 times or 71 times it——

Ms. MCCARTHY. I really do not know. That is a very big organization.

Mr. JOHNSON OF OHIO. Okay. All right.

Ms. MCCARTHY. I have no idea how many times she would go there.

Mr. JOHNSON OF OHIO. Well, let's go to slide #4.

[Slide.]

Mr. JOHNSON OF OHIO. According to news reports and emails obtained by the Committee, Mr. Goo, back to the Director of Policy, apparently attempted to skirt transparency. You talked about how transparent your rulemaking process is. Tried to skirt trans-

parency and his ties to environmental groups by arranging meetings with the NRDC at the Starbucks in the J.W. Marriott Hotel on Pennsylvania Avenue close to the EPA in an effort to prevent participants of the meetings from signing in at the EPA building and creating public records.

Is it appropriate in your opinion for an EPA employee, particularly the Director of Policy, to schedule meetings with outside groups attempting to influence the Agency's policy decisions at a Starbucks instead of inside of the EPA?

Ms. MCCARTHY. Sir, I do not know anything about what was being attempted.

Mr. JOHNSON OF OHIO. Okay. All right. Somewhere along the line, Madam Administrator, the buck stops here, you know?

Ms. MCCARTHY. Yeah.

Mr. JOHNSON OF OHIO. Why do you think Mr. Goo, the EPA's Policy Director, set up such a meeting at Starbucks instead of the Agency? Any idea?

Ms. MCCARTHY. I would not want to guess.

Mr. JOHNSON OF OHIO. Well, I think the American people, Madam Administrator, want to know what it says about the EPA's relationship with outside groups if agency officials set up private meetings at coffee shops instead of at their office. I think the American people are very concerned about the cozy relationship between the EPA and these outside advocacy groups.

And I want to say one more thing while I've got just another minute or so. I've heard repeated this morning, and you've even echoed it, how other countries around the world have made much more progress in reducing carbon emissions and becoming greener with investments in renewables. I just came from a visit to Europe and I would encourage you to go talk to some of our European friends. You might be shocked, Madam Administrator, to find out that some of our European friends are actually increasing their mix of coal in their energy profiles.

And when we asked them why they're doing that because, you know, they've got this—they've got a big carbon emission reduction to do by 2030 as well. I asked the President of the Energy Union, I said how are you going to accomplish this? And why are you going to a higher mix of coal? He said our ratepayers are businesses and our residential customers have reached the tipping point. They're no longer willing to pay these exorbitantly high prices in energy costs. It's making us noncompetitive in the world's economy.

Madam Administrator, that's what your agency is doing——

Ms. MCCARTHY. No, sir.

Mr. JOHNSON OF OHIO. —to our country by not considering the economic implications of the rules that you make. The Supreme Court has just ruled that it's unreasonable for the EPA to take that position so I would remind you of that.

And with that, Mr. Chairman, I'll yield back.

Mr. BRIDENSTINE. I thank the gentleman for yielding.

We have a number of Members that have more questions to ask in representation of their districts, so with that, we will stand in recess subject to the call of the Chair.

[Recess.]

Mr. LOUDERMILK. [Presiding] The Committee on Science, Space, and Technology will reconvene. Thank you for the short recess so some of our Members could vote.

At this time the Chair recognizes Mr. Palmer.

Mr. PALMER. Thank you, Mr. Chairman.

Administrator McCarthy, I think you made a point that cost was not a major consideration at one point in your testimony. Do you not think that considering the link between income and health costs and the number of jobs that we lost and the preponderance of evidence that we're losing jobs and companies because of over-regulation, do you not think that we should take into consideration cost? Would you—thank you.

Ms. MCCARTHY. I believe that jobs and the economy are tremendously important and need to be considered. I want to just make sure we understand each other. I said in the development of an ozone standard the law—and it's been told to us by the courts—precludes us from looking at cost. It's a health-based standard. That does not mean we do not look at cost in the implementation phase.

Mr. PALMER. I realize that in the recent Supreme Court decision involving the Mercury rule, that those are different statutes, but at the same time, though, I think the point made in the Supreme Court decision that it's unreasonable to apply regulations without taking into consideration the cost and the economic impact should be relevant to the discussion we're having about ozone, about——

Ms. MCCARTHY. Yeah.

Mr. PALMER. —the Clean Power Plan, about the Waters of the United States. And I would really encourage the EPA to be more conscientious in that regard and particularly in the context of how it impacts low-income families.

I got a little animated earlier. I was out of time. I'm happy to have—to have this second round of questions-

Ms. MCCARTHY. -Yeah.

Mr. PALMER. —to make that connection but—and it's particularly important in the context of how it impacts minorities. And I talked about the report from the Black Chamber of Commerce—the National Black Chamber of Commerce, but also the Southern Christian Leadership Council, which I believe was founded by Martin Luther King or he cofounded it. Their President testified to the same effect, that what the EPA is doing is going to have a disproportionate impact on black and Hispanic families. And I would say across the board all low-income families are going to suffer tremendous harm from these regulations.

And what bothers me about this more than anything else is the reluctance of the EPA to hand over the scientific research for peer review. The reports that I've entered into the record have been peer-reviewed, okay? I don't—I think that we need total transparency here. You know, we talk—you talk about what you want to do in the context of a cleaner environment. You made this point that the GDP has gone up since——

Ms. MCCARTHY. Yes.

Mr. PALMER. —the Clean Air Act in 1970. More specifically, since 1980 GDP has gone up 467 percent. Vehicle miles traveled, which vehicle emissions contribute to ozone, have gone up 94 percent.

Population has increased by 38 percent. Energy output has gone up 22 percent but emissions have gone down 50 percent. I made this point in a previous hearing that the air is demonstrably cleaner than it's been in 50 or 60 years, yet we continue to see an increase in respiratory illnesses, particularly asthma.

So my point you is is that this is a bridge too far. I think the EPA needs to scale this back. I think you need to first allow the states to implement the 2008 standards. They were already in the process. They were waiting on input from the EPA for their State Implantation Plans. So I think this is clearly a bridge too far. I'm very concerned about the collaboration that the EPA has, the—I think the over-involvement of outside groups because it appears to be agenda-driven and not sound public policy.

With that, Mr. Chairman, I'll yield the balance of my time.

Mr. LOUDERMILK. The gentleman yields back.

At this time I'll recognize myself for five minutes for questions.

And thank you again for being here with us, especially as long as we've been here. But——

Ms. MCCARTHY. Thank you.

Mr. LOUDERMILK. —to have the rare opportunity to have you here, a lot of people have a lot of questions and there is a lot of distrust of government in general and especially of your department. Let me—there were a couple of questions that we were just getting into when time ran out so let me recap this. I showed you an email to where the OMB initially stated that the Waters of the United States would be well above the $100 million trigger of economic impact. However, then there was slide 2, which was the second one, if we could bring that back up.

[Slide.]

Mr. LOUDERMILK. We were just getting into this email to which after the Office of Management and Budget said it was well above the $100 million impact, which would have required an RIA. This email said that—Jim Pendergrass, Water employee—Office of Water employee said, "Nancy and Ken know that a Regulatory Impact Analysis may be necessary but there are some economically significant rules from EPA that haven't had an RIA. They are checking with the Office of Policy to see if there was some agreement at the political level that we don't need it to conduct an RIA."

The response to this email then states, "Good news. Tamika and Sandy talked to Ken and Ken said it has been agreed that we do not need an RIA. Let's leave it at that."

So this email appears to show that EPA made a political decision not to conduct the RIA that we know is required if OMB estimates that it's about $100 million impact, which from the first email said it was well above, not just above, not marginal, but well above.

Ms. MCCARTHY. I——

Mr. LOUDERMILK. Who made that decision?

Ms. MCCARTHY. I apologize, sir. During the break I was able to check back in the office. It was actually determined to be a major rule because it did not have direct but it did have sufficient indirect costs and an RIA was conducted.

Mr. LOUDERMILK. An RIA was conducted?

Ms. MCCARTHY. Yes, it was done. It was determined to be a major rule so there was no behind-the-scenes work. That was banter back and forth between the staff.

Mr. LOUDERMILK. From what I understand you conducted an economic analysis, not an official RIA but you're stating that there was an official RIA done?

Ms. MCCARTHY. My understanding is it was treated as a major rule. Apparently I misspoke when I said RIA. It was an economic analysis——

Mr. LOUDERMILK. Okay.

Ms. MCCARTHY. —but it was a major rule.

Mr. LOUDERMILK. So the question is Executive Order requires you to do an RIA if it's above $100 million, which originally the OMB said it was above $100 million, but your office chose not to do an RIA but do another analysis. And according to the email, that was a political decision made. My question is who made the decision to not go forward?

Ms. MCCARTHY. Sir, this decision was—obviously OMB made the decision because they have to sign off on the rule and ensure that it meets all of the policies and the requirements. So I don't know anything more than what you're telling me.

Mr. LOUDERMILK. Did the EPA——

Ms. MCCARTHY. We did the economic analysis.

Mr. LOUDERMILK. According to the emails, that really leads us to believe that someone at EPA went back to OMB and asked them to reassess whether or not this was significant, if there was a significant impact. And——

Ms. MCCARTHY. And in this case it was determined to be a major rule and an economic analysis had to be done.

Mr. LOUDERMILK. But not an RIA, which is required. What I'm getting at is there's a lot of distrust and we're having a hard time building some trust here.

Ms. MCCARTHY. Yeah. I apologize, sir. I'm happy to get back to you but my understanding is that this rule did not have direct costs so it was allowed to do an economic analysis because it would have been difficult to know how you would have done a broader RIA when it had no direct costs——

Mr. LOUDERMILK. Well, one of the reasons we have OMB is because I think if left to EPA nothing would—and in fact the email says that you guys have done other rules that you know are significant——

Ms. MCCARTHY. I don't know what they're referring——

Mr. LOUDERMILK. —but you didn't do an RIA so——

Ms. MCCARTHY. I haven't seen that. I don't know what they're referring to. I'm telling you what's in the record——

Mr. LOUDERMILK. Okay. Well——

Ms. MCCARTHY. —and I'm more than happy to share what we did.

Mr. LOUDERMILK. —I would really appreciate if you could get back, and I would like to know who at EPA contacted OMB and asked them to change their analysis to go from well above $100 million to where it wasn't needed. Did that come from the White House? Did that——

Ms. McCARTHY. I am more than happy to get you the explanation as to why this satisfied OMB and why that decision——

Mr. LOUDERMILK. Can you tell me when we'll have that information?

Ms. McCARTHY. I'll go back and find out—I'll do the best I can to get it to you right away.

Mr. LOUDERMILK. We'd like to know who made that—who made the political decision——

Ms. McCARTHY. There was no political—as far as I know, sir, this is——

Mr. LOUDERMILK. Well, according to your own emails, it was a political decision and it was said let's leave it at that. Apparently they didn't want us to know.

Ms. McCARTHY. I'm just happy——

Mr. LOUDERMILK. But I see I'm out of time.

Ms. McCARTHY. I'm just happy to give you information as to why this was the appropriate way to meet our policies and obligations.

Mr. LOUDERMILK. Thank you.

The Chair now recognizes the gentleman from Michigan, Mr. Moolenaar.

Mr. MOOLENAAR. Thank you, Mr. Chairman. And thank you for continuing to stay with us on this.

I just wanted to follow up on some questions about the ditches that we were talking about——

Ms. McCARTHY. Oh, Lord. Okay.

Mr. MOOLENAAR. —and do you——

Ms. McCARTHY. Ditches have become my favorite——

Mr. MOOLENAAR. Well, you know, I think your goal was clarity but there is a lot of confusion out there. And, you know, I guess the question I have is do you anticipate that a farmer, a business, or a local government would not face legal action for not applying for a federal permit because they believed their ditches were exempt? So in other words if someone believes sincerely that their ditch is exempt, will they not face legal action or would at some point the EPA rule differently?

Ms. McCARTHY. Well, people are expected to know that if there is a question, they should ask, but EPA and the Army Corps are not in the business of going around and—as you're implying, and chasing people for this. It really is a matter of trying to provide clarity. The farmers and ranchers I know care about drinking water as much as I do. They're not interested in polluting or destroying.

Mr. MOOLENAAR. Right.

Ms. McCARTHY. They're interested in maintaining that for their benefit and their own kids, so this isn't an opportunity to do anything more than give them more tools and more certainty.

Mr. MOOLENAAR. Okay.

Ms. McCARTHY. And the process will continue to work as it's always worked.

Mr. MOOLENAAR. Would you be willing to clarify that in statute? Because what you're telling me today is your interpretation of the rule, and someday someone else will be in your position. Many people throughout the country will be implementing this rule and will have different opinions on that. And even though you say they

won't be chasing people around, there is an enforcement obligation that actually does lead them to chasing people around. And so my question is would you be willing to clarify that in statute so there's no ambiguity on that?

Ms. McCARTHY. I don't know what I'm clarifying here, sir. All I'm telling you is how the current system works, which is people are obligated to ask when there is a concern and it's a marginal call. They're supposed to know they have to protect those waters. We've made it as clear as we possibly can what waters should be protected. They should use their judgment, ask if they're uncertain, and everything will be okay.

Mr. MOOLENAAR. Well, I'm going to continue to try and work with you on this because——

Ms. McCARTHY. All right.

Mr. MOOLENAAR. —your goal——

Ms. McCARTHY. I'd be happy to do that.

Mr. MOOLENAAR. —is clarity but there is a lot of confusion out there, and when there's a lot of confusion, it's going to result in a lot of unintended consequences for costs for people——

Ms. McCARTHY. Yeah.

Mr. MOOLENAAR. —and legal interpretations, consultant fees.

Ms. McCARTHY. Sir, one of the things we're doing which might be of interest and I'd be happy to work with you on it is we're trying to develop a question-and-answer for folks that are asking questions so that it's available to them and it helps guide them if there's a lack of clarity.

Mr. MOOLENAAR. Okay.

Ms. McCARTHY. But we'll never get 100 percent clear but I think we tried to get as far along as we could in making it is clear as possible so they can do their business without concern.

Mr. MOOLENAAR. Okay. Thank you. And I want to follow up with you. Some of your comments I can tell you are a person on a mission. The planet is something—I read a quote—one of your quotes from the forum on U.S. Energy and Climate Policy, the Christian Science Monitor forum——

Ms. McCARTHY. Okay.

Mr. MOOLENAAR. —where you talked about "there are a lot of things that I worry about. I worry about the obligations I have to the planet." Do you remember that——

Ms. McCARTHY. Well, we actually——

Mr. MOOLENAAR. —statement?

Ms. McCARTHY. It was actually kind of a fun moment. They asked me what I would do if I had all the time in the world and I explained I'd hang out with my children more but after I deal with the planet. It was sort of I think humorous.

Mr. MOOLENAAR. Okay. Well, I just—because it does—when you talk about moral obligations——

Ms. McCARTHY. Um-hum.

Mr. MOOLENAAR. —and you talk about climate change——

Ms. McCARTHY. Yeah.

Mr. MOOLENAAR. —it does have sort of the appearance of almost a religious fervor about this. And I guess one of the things I would like you to consider because I know you're very passionate about

this, but if some of the analysis is accurate in terms of the economic costs——

Ms. MCCARTHY. Yes.

Mr. MOOLENAAR. —you have a background in public health——

Ms. MCCARTHY. Yes.

Mr. MOOLENAAR. —I would like you to consider the public health impact when it comes to people losing their jobs, having lower incomes, depression, suicide, people who are unable to pay for the medications because they are out of work. And these are the realities of these kinds of, in my view, draconian regulations that may have certain intended effects but actually have unintended consequences that I think are very troubling. So I'd ask you to think about those things.

I see my time is expired, and thank you, Mr. Chairman.

Mr. LOUDERMILK. Thank you. And unfortunately, there's going to be more procedural motions on the Floor, and since all Members have asked questions, I know you're going to hate to hear this, but——

Ms. MCCARTHY. Oh, no.

Mr. LOUDERMILK. —we're going to go ahead and adjourn. But thank you so much for being here, and the Committee on Science, Space, and Technology is adjourned.

Ms. MCCARTHY. Thank you very much.

Mr. LOUDERMILK. Thank you.

[Whereupon, at 1:08 p.m., the Committee was adjourned.]

Appendix I

Answers to Post-Hearing Questions

ANSWERS TO POST-HEARING QUESTIONS

Responses by The Honorable Gina McCarthy

QUESTIONS FOR THE RECORD
The Honorable Jim Bridenstine (R-OK)
U.S. House Committee on Science, Space, and Technology

Examining EPA's Regulatory Overreach

Question 1

It is my understanding that the EPA conducts benefit analyses towards the end of a pesticide approval process, or renewal. I also understand that only after a risk has been identified will EPA examine the balance between risks and benefits.

However, regarding the EPA-issued memo on "Benefits of Neonicotinoid Seed Treatments to Soybean Production," the EPA undertook this study prior to completing a preliminary risk assessment for neonics. USDA reacted very negatively to the EPA study stating in a letter that that "as a whole, USDA disagrees with that [EPA] assessment" and cautioned EPA about "releasing a premature assessment" that would be "an additional and unnecessary burden" on farmers.

I do not understand why you did not work with USDA on this agriculture-related assessment done as part of the more complete analysis which presumably is underway. This appears to me to me as an effort to influeuce the market; rather than follow the science. Are you employing a precautionary approach rather than a clear science-based approach?

Response to Question 1

The EPA conducted its assessment of the benefits on neonicotinoid treatments to soybean seed as part of the ongoing registration review for this class of compounds that began in 2008. As part of that re-evaluation process, the agency is assessing the potential risks posed by these treatments and the benefits that these uses provide to agriculture. In the process of assessing the risks posed by the neonicotinoids, the EPA became aware of several studies, including one that had been co-authored by a USDA scientist, studying whether neonicotinoids provided benefits when used as treatments to soybean seed in South Dakota in 2009 and 2010. Those studies did not evaluate the benefits of those seed treatments to soybean producers across the range of regions, under different soybean prices, or under different growing conditions that are typical of U.S. soybean production. Nor did those studies evaluate the impact of neonicotinoid seed treatment on pollinators or the impact of alternative pesticide treatments such as foliar sprays on pollinators.

Based in part on those studies, the EPA decided to evaluate the benefits of the soybean seed treatment use. The EPA document analyzes how neonicotinoid seed treatments are currently used in soybeans (e.g., target pests), the alternatives to seed treatments, and the biological and economic benefits of seed treatments compared to other pest control options.

As part of that analysis, the EPA asked USDA to provide data from USDA's regional Integrated Pest Management (IPM) centers, funded through grants from the National Institute of Food and Agriculture (NIFA), on the use and importance of neonicotinoid seed treatments in the production of 17 crops, including soybeans. Those data are not publicly available and are still preliminary.

Additionally, the EPA met and shared the preliminary benefits analysis document with USDA's Office of Pest Management Policy (OPMP) on three occasions for their review. Prior to publication, the EPA corrected one reference in response to the preliminary comments provided by OPMP's review, pointed OPMP to areas of the document that address uncertainties that OPMP raised regarding the regional/conditional need for seed treatment, worked with USDA on obtaining additional information and input from IPM Centers, and explained why the EPA did not consider other USDA/OPMP comments. (See Response to Question 4 for more information as well the attached email communication dated October 15, 2014).

Consistent with our transparency principles, the EPA sought public input on its draft assessment. The agency expects to finalize this analysis later this year and will consider the results in determining whether risk mitigation is necessary for the neonicotinoids. As part of this ongoing re-evaluation process, the EPA will again seek comment from USDA and the public on the analysis and any identified risk mitigation before finalizing the agency's risk management decision.

Question 2

Your recent actions - a moratorium on new registrations, your study on soybean seed treatments which USDA severely criticized, and the new label restrictions) are premised on the belief that honey bees are disappearing; but USDA data doesn't support that position.

I am informed that honey bee populations have had their ups and downs but have steadily risen in the United States over the past 10 years. USDA reported that the number of honey bee colonies grew to 2.74 million, the highest level in many years. A University of Maryland study, conducted with EPA and USDA, found that "honey bees are not harmed by realistic exposures" to neonic pesticides. The lead author of the study, Dr. Galen Dively, noted that neonic pesticides are "very safe, an order of magnitude safer than organophosphates."

Further, a USDA press release of May 15 last year said that fewer colony losses occurred in the U.S. over the winter of 2013-2014 than in recent years. A recent University of Maryland three-year field study, in which USDA and EPA participated, showed no material impact on hive health from neonics, even at doses well above those bees would encounter in the field. Does EPA now disagree with that University of Maryland study which EPA helped write?

Response to Question 2

The recently released *National Strategy to Promote the Health of Honey Bees and other Pollinators*[1] discusses the losses of managed honey bee colonies used to produce honey in the U.S. based on data collected by the USDA National Agricultural Statistics Service (NASS). Managed colony numbers from 1945 to 2006 (depicted in **Figure 1**) illustrate a relatively steady decline in managed honey bee colonies from 1947 to roughly 1995. A second graph (**Figure 2**; reproduced from the National Strategy) depicting NASS data from 1965 to 2014 illustrates that the number of honey bee colonies used for honey production from 1995 to 2009 was relatively

[1] White House 2015. National Strategy to Promote the Health of Honey Bees and other Pollinators. Pollinator Health Task Force. May 19, 2015. Can be found at the following website: https://www.whitehouse.gov/blog/2015/05/19/announcing-new-steps-promote-pollinator-health.

constant around 2.5 million and from 2010 to present the numbers have been around 2.7 million. It is uncertain whether these data could be construed to depict a "steady increase." However, what the graph does not depict is the level of effort and expense that beekeepers are having to exert to maintain colony numbers.

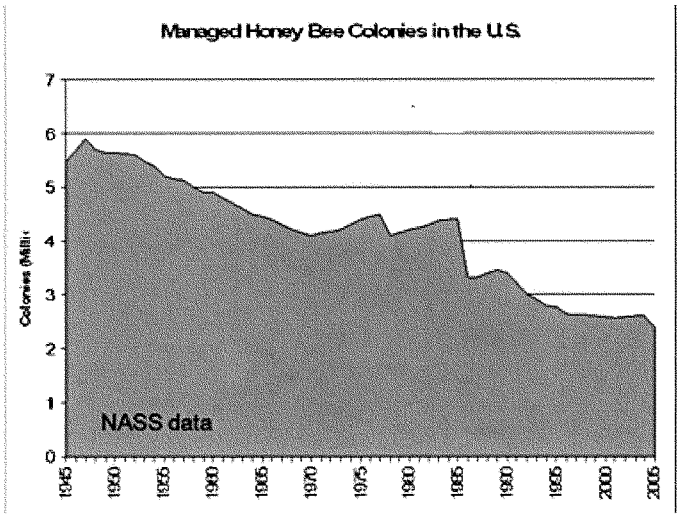


Figure 1. Number of managed honey bee colonies in the U.S from 1945 - 2006 based on National Agricultural Statistics Service (NASS) data.

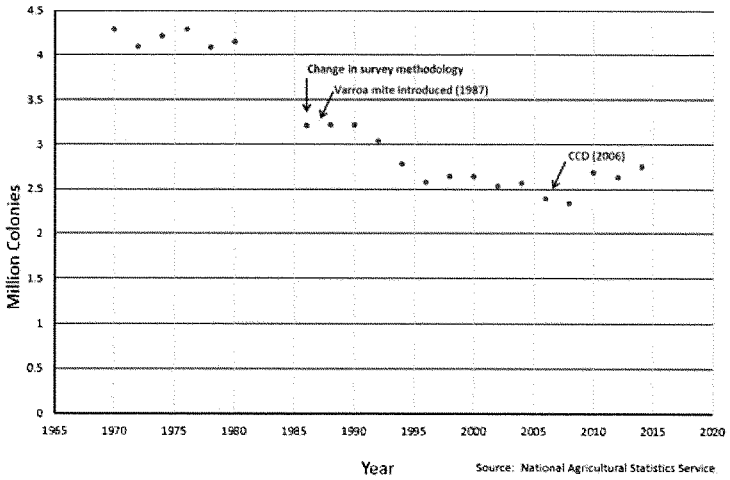


Figure 2. Numbers (in millions) of managed honey bee colonies in the United States used for honey production by year based on USDA National Agricultural Statistics Service (NASS) survey data. The gap between 1982 – 1986 reflects the period when the survey was not conducted. The figure illustrates when the Varroa mite was introduced into the United States in 1987, and when Colony Collapse Disorder was first documented in 2006 (reproduced from White House 2015).

The USDA press release of May 15, 2014, as well as more recent data on overwinter losses from 2014 – 2015, indicate losses less than the national average of 31%, based on data collected (beginning in 2006) through a winter loss survey of beekeepers[2]. However, as noted in the President's National Strategy on Pollinator Health[3], these losses reported by researchers at the University of Maryland "*far exceed the 15-17% overwintering loss rate that commercial beekeepers have indicated is an economically sustainable average*[4]*. When overwintering losses are coupled with colony losses occurring during other times of the year, annual losses can be considerably higher*[5]*. This is particularly notable in the 2014-15 preliminary report of 27.4% summer colony loss in the Bee Informed survey of a subset of national beekeepers, for total annual losses of 42.1% of colonies*[6]*.*"

[2] Steinhauer, N.A., *et al.* 2015. Colony Loss 2014 – 2015: Preliminary Results. http://beeinformed.org/2015/05/colony-loss-2014-2015-preliminary-results

[3] *Ibid* White House 2015.

[4] Steinhauer, N.A., *et al.* 2013. A National Survey of Managed Honey Bee 2012–2013 Annual Colony Losses in the USA: Results from The Bee Informed Partnership. *Journal of Apicultural Research* 53.1 (2013): 1-18.

[5] *Ibid* Steinhauer *et al.* 2013.

[6] *Ibid* Steinhauer *et al.* 2015

In the article by Dively *et al.* 2015[7], the authors noted that *"[G]iven the weight of evidence, chronic exposure to imidacloprid at the higher range of field doses (20 to 100 µg/kg) in pollen of certain treated crops could cause negative impacts on honey bee colony health and reduced overwintering success, but the most likely encountered high range of field doses relevant for seed-treated crops (5 µg/kg) had negligible effects on colony health and are unlikely a sole cause of colony declines."* While an EPA staff member (Dr. Alaa Kamel) is listed as a co-author on the study and the EPA assisted in the residue analyses, the overall study conclusions should not be construed as representing the position of the EPA. The agency is considering the Dively *et al.* study of imidacloprid just as it would any study published in the open literature, *i.e.*, in terms of whether it meets the EPA evaluation guidelines for ecological toxicity data in the open literature[8]. That study, along with other lines of evidence deemed to be scientifically sound, will be considered in the initial risk assessment for imidacloprid, which is scheduled for release in December 2015.

Imidacloprid and other chemicals belonging to the nitroguanidine-substituted neonicotinoids are currently undergoing evaluation as part of the EPA Registration Review program, and the decisions for these compounds are scheduled for the 2016 – 2017 timeframe. The EPA is considering multiple lines of evidence regarding potential exposure to and effects from these compounds, and the EPA has required that the registrants also conduct studies in support of registration review. At this time, the EPA has not reached a final decision in the registration review process regarding imidacloprid or any other nitroguanidine neonicotinoid to determine whether these pesticides meet the Federal Insecticide, Fungicide and Rodenticide Act standard of no unreasonable adverse effects to human health or the environment. The data and conclusions reached in a single paper are typically considered in combination with all available data in a weight-of-evidence approach.

Question 3

EPA, USDA, and the White House have stated that diseases, loss of habitat, parasites, pests, bacteria, and bee malnutrition are some of the major culprits regarding stresses on bee health. Key scientists working with USDA determined that the deadly Varroa Destructor mites could be responsible for over 75 percent of the loss of bee hives in the United States. The leading scientist was Dr. Pettis with USDA's Agricultural Research Service. As EPA focuses on bee-health issues are you coordinating with USDA on this Varroa-mite problem?

Response to Question 3

The EPA has been working closely with the U.S. Department of Agriculture Research Service Beltsville Bee Research Laboratory on the Varroa mite issue and on efforts to understand the potential role of pesticides in pollinator health. The EPA has also worked collaboratively with other federal agencies and with our international regulatory counterparts to understand the

[7] Dively, G. P., M. S. Embrey, A. Kamel, D. J. Hawthorne and J. S. Pettis. 2015. Assessment of Chronic Sublethal Effects of Imidacloprid on Honey Been Colony Health. PLoS ONE 10(3): e0118748.doi:10.1371/journal.pone.0118748

[8] USEPA. 2011. Evaluation Guidelines for Ecological Toxicity Data in the Open Literature. http://www.epa.gov/pesticides/science/efed/policy_guidance/team_authors/endangered_species_reregistration_workgroup/esa_evaluation_open_literature.htm

factors associated with regional declines in honey bee populations. In addition, the EPA is a member of the USDA Colony Collapse Disorder (CCD) and Honey Bee Health Steering Committee.

Question 4

On April 6 of this year, EPA received comments from the USDA Chief Economist which stated that "as a whole, USDA disagrees with an [EPA] assessment" that there are no clear economic benefits to neonic seed treatments in soybeans. Further, those USDA comments note that USDA cautioned EPA about "releasing a premature assessment" on seed treatment benefits. USDA also pointed out that there would be "an additional and unnecessary burden" on farmers by publishing that report, and that USDA requests for more data were ignored by EPA before releasing the report. I am very concerned that it appears that EPA, in issuing that assessment, was more interested in politics than sound scientific facts. Did EPA allow USDA to review the October, 2014, seed treatment memo before it was released to the public?

If USDA reviewed the EPA memo ahead of time, please name those USDA officials who did the review and whether they provided any input to EPA?

If advance written comments were provided by USDA to EPA, please provide those comments to my office?

Response to Question 4

The EPA discussed its benefit analysis for soybeans with USDA on several occasions in 2014. USDA's Office of Pest Management Policy (OPMP) reviewed the preliminary benefits analysis document, and provided oral and written comments prior to publication. USDA's final written comments prior to publication of the analysis reflect the comments that USDA raised throughout the process and are attached.

Based on USDA's comments, the EPA corrected one reference in the document, pointed USDA/OPMP to areas of the document that address uncertainties that USDA/OPMP raised regarding the regional/conditional need for seed treatment, incorporated additional information and input from IPM Centers, and explained why the EPA did not consider other USDA/OPMP comments. (See attached email dated October 15, 2014).

After the preliminary review and discussion in the summer of 2014, USDA helped facilitate the collection of additional information via USDA's Integrated Pest Management Centers. Twenty-one entomologists from 17 states responded to the IPMC questionnaire with preliminary and non-public data for 17 crops. Their responses included information on the most regionally important pests, the effectiveness of neonicotinoid seed treatments in comparison to alternatives, the value of preventative pest control in their regions, and their general thoughts on seed treatment benefits for 17 different crops. The EPA incorporated information on soybean treatment only into the October 2014 document.

On pesticide matters, the EPA primarily coordinates with USDA/OPMP and relies on OPMP to coordinate with other parts of USDA. OPMP was established under the Farm Bill and works

under the direction of the Deputy Secretary. While OPMP is administratively under the Agricultural Research Service (ARS), OPMP is a policy office and does not do research. ARS and OPMP roles are very clearly different and separate. USDA's Office of the Chief Economist (OCE) submitted their comments after publication of the soybean benefits document and as part of the public comments. EPA also received official comments from ARS on April 6, 2014. Both sets of submitted comments from USDA (one from USDA/ARS and one from USDA/OCE) are attached for reference.

Question 5

I am told that EPA and USDA coordinated with the University of Maryland on a 3-year, comprehensive, "field-based" study and determined that "honey bees are not harmed by realistic exposure" to a neonic pesticide. That university study and the USDA research -- coupled with confirming data from the continent of Australia which is not infested with Varroa destructor mites -- could indicate that properly-applied neonic pesticides are effective and safe since as use of neonic pesticides increased in Australia, the honey bee populations in Australia were "not in decline; instead there have been significant increases" according to reports from Australia.

Has EPA reviewed the Australian study which highlighted the lack of Varroa mites and pointed out significant bee-colony increases in Australia at the same time that neonic pesticides were used?

Response to Question 5

With respect to the University of Maryland research conducted by Dively *et al.* 2015[9], the authors noted that *"[G]iven the weight of evidence, chronic exposure to imidacloprid at the higher range of field doses (20 to 100 µg/kg) in pollen of certain treated crops could cause negative impacts on honey bee colony health and reduced overwintering success, but the most likely encountered high range of field doses relevant for seed-treated crops (5 µg/kg) had negligible effects on colony health and are unlikely a sole cause of colony declines."* While an EPA staff member (Dr. Alaa Kamel) is listed as a co-author on the study and the EPA assisted in the residue analyses, the overall study conclusions should not be construed as representing the position of the EPA. The agency is considering the Dively *et al.* study of imidacloprid just as it would any study published in the open literature, *i.e.*, in terms of whether it meets the EPA evaluation guidelines for ecological toxicity data in the open literature[10].

The Agency is also aware of other studies by Dr. Dively[11] [12] as well as other researchers at the University of Maryland who are examining factors associated with honey bee declines. As noted

[9] Dively, G. P., M. S. Embrey, A. Kamel, D. J. Hawthorne and J. S. Pettis. 2015. Assessment of Chronic Sublethal Effects of Imidacloprid on Honey Been Colony Health. PLoS ONE 10(3): e0118748.doi:10.1371/journal.pone.0118748

[10] USEPA. 2011. Evaluation Guidelines for Ecological Toxicity Data in the Open Literature. http://www.epa.gov/pesticides/science/efed/policy_guidance/team_authors/endangered_species_reregistration_workgroup/esa_evaluation_open_literature.htm

[11] Dively G. P. and A. Kamel. 2012. Insecticide residues in pollen and nectar of a cucurbit crop and their potential exposure to pollinators. J Agric Food Chem 60: 4449–4456. doi: 10.1021/jf205393x PMID: 22452667

[12] Pettis JS, D. vanEngelsdorp, J. Johnson, and G. Dively. 2012. Pesticide exposure in honey bees results in increased levels of the gut pathogen Nosema. Naturwissenschaften. 2012; 99: 153–158. doi: 10.1007/s00114-011-0881-1 PMID: 22246149

in the response to Question 2, the EPA considers multiple lines of evidence in assessing risks of pesticides. Open literature studies meeting the EPA evaluation standards will be considered in the risk assessment process.

The EPA is also aware of the 2014 publication by the Australian Pesticides and Veterinary Medicines Authority (APVMA) "*Neonicotinoids and the Health of Honey Bees in Australia*"[13]. This report was compiled by APVMA to establish whether:

a) the use of neonicotinoid insecticides in Australia is presenting any increased risk to the health of honeybees than other pesticides that have been in use for many years; and,

b) the current APVMA data requirements for testing of insecticides are adequate to address scientific concerns about subtle effects of neonicotinoids (and other pesticides) in honey bees, which have been suggested as impacting their ability to pollinate plants and collect honey.

The report noted the lack of consensus on the multiple factors (*i.e.*, pesticides, parasites, viruses [diseases], climate change, bee nutrition, lack of honey bee genetic diversity, and beekeeping practices) associated with regional declines in honey bee colony numbers in other areas of the world. At that time, honey bee populations in Australia were not in decline and insecticides were not considered a "highly significant issue" when used according to label instructions and/or when beekeepers and growers communicate effectively. Also, neonicotinoids were not considered uniquely toxic to bees since other insecticides can be also be highly toxic to bees. The report noted that in general, few adverse impacts have been observed at doses to which pollinators might be exposed in the field with the "*exception of those well-documented cases in several European countries and in Canada of bee mortality caused by acute exposure of bees to neonicotinoid dusts generated during the planting of insecticide-coated maize seed and that there has been only a limited number of cases of poisoning of bees with neonicotinoids in countries where monitoring (either passive or active) has been carried out.*" The publication also noted that the persistence of certain neonicotinoids and their ability to translocate within plants "*presents a greater environmental hazard than other less persistent and/or less mobile insecticides even though Australian honeybee populations are not in decline, despite the increased use of this group of insecticides in agriculture and horticulture since the mid-1990s.*"

As noted in response to Question 3 and consistent with the *National Strategy to Promote the Health of Honey Bees and other Pollinators*, the EPA is engaged on a number of domestic and international fronts to understand the factors associated with regional declines in honey bee populations, to advance the science for examining the role that pesticides may play in these declines, and to implement appropriate mitigation where needed.

It is correct that Australia does not currently have Varroa mites and that the country has not experienced the regional losses in honey bee colonies similar to those in the U.S. and other parts of the world. However, Australian beekeepers have not been as heavily involved with pollination

[13] http://archive.apvma.gov.au/news_media/docs/neonicotinoids_overview_report_february_2014.pdf

services as commercial beekeepers in the U.S., where bees may be brought into closer proximity with agricultural areas where a range of chemicals (including neonicotinoids) may be in use.

Question 6

In any decision-making process regarding the use of neonics in the U.S. will the EPA take into account the reports from some European nations where neonics were banned -- which resulted in major harm to crop production, farmers, and farm communities without compensating benefits to bees?

Response to Question 6

Neonicotinoids were not banned per se. The European Commission adopted a proposal to restrict the use of three pesticides belonging to the neonicotinoids family (clothianidin, imidacloprid and thiamethoxam) for seed treatment, soil application (granules) and foliar treatment on bee attractive plants and cereals for a period of two years. Specifically, the restrictions are enforced across all EU Commission countries. The restrictions began December 2013, so should be ending December 2015.

The EPA has been monitoring the actions and impacts of the regulatory actions taken by regulatory officials in Europe. As appropriate, during the registration review for the neonicotinoids, the EPA will consider any reliable data that are submitted to the agency documenting the impacts on pest control and crop yields resulting from these regulatory actions.

Question 7

In the mid-South neonics protect cotton, rice, and soybean production which are very important to our economy, farmers, and to consumers. Many farm operators today are very precise in how they run their businesses and I am certain they have a very good understanding of the value of seed treatments. I understand that EPA issued a report on the economic benefits to farmers of using seed treatments on soybeans. In conducting the EPA soybean assessment, did EPA talk to any farmer in my state or my state department of agriculture to get relevant data?

If so, please provide more details about those discussions and summaries of that farm-related input, if any, to my offiee.

Response to Question 7

On pesticide matters, the EPA works closely with USDA to obtain input from leading researchers, extension experts, producers, growers, and other industry representatives with a broad range of perspectives. For this particular assessment, USDA, through the North Central IPM Center (NC IPMC) helped to coordinate a questionnaire of the leading soybean research and extension experts in the United States. There were no respondents from Oklahoma to the NC IPMC questionnaire. However, experts from Mississippi, Louisiana, Arkansas, Missouri and Texas submitted comments and responses that were germane to soybeans and EPA included this information in the October 2014 assessment.

If farmers from Oklahoma or experts from the Oklahoma Department of Agriculture have any information that will help improve the EPA's assessment, the agency would be happy to receive

and evaluate this information along with the other comments we received. The EPA plans to respond to all substantive comments received via the public comment period and will consider possible revisions or an addendum to the assessment. The EPA will consider all submitted information before proposing any risk management decisions if risk mitigation is warranted.

Question 8

I understand that in Australia there are no Varroa Destructor mites, and there are few concerns about "colony collapse," and yet they use neonics in Australia much the same as in the U.S. In fact, the Australian government issued a report on bee health and the use of neonics. It found that "Australian honey bee populations are not in decline, despite the increased use of [neonics] in agriculture and horticulture since the mid-1990s" in Australia. These reports certainly seem represent very large, real-world examples of the lack of correlation between neonics and impaired bee health.

Have you reviewed these Australian government reports and do you believe they are instructive and should be considered in any decisions to limit the use of neonics in the U.S.?

Response to Question 8

As noted in response to Question 5, the EPA is aware of the 2014 publication by the Australian Pesticides and Veterinary Medicines Authority (APVMA) "*Neonicotinoids and the Health of Honey Bees in Australia*"[14]. EPA has also updated APVMA and their stakeholders on EPA's understanding of the neonicotinoids and pollinator health. The extent to which the use of neonicotinoids represents a risk to bees and other insect pollinators is currently under evaluation by the EPA based on the *Guidance for Assessing Pesticide Risks to Bees*[15] released by EPA in 2014.

This guidance was developed in part based on a Society of Environmental Toxicology and Chemistry global workshop in 2011 on developing a risk assessment process for bees, the proceedings[16] of which were published in 2014. Representatives of the Australian government participated in the workshop and contributed to the tiered risk assessment process currently used by EPA for bees. Similar to the EPA's process for evaluating risk for other types of wildlife, the agency will consider all available data, including studies conducted in Australia in assessing the risk of neonicotinoids to bees and the full weight of evidence will be used to support EPA risk management decisions.

[14] http://archive.apvma.gov.au/news_media/docs/neonicotinoids_overview_report_february_2014.pdf

[15] USEPA, PMRA and CalDPR. 2014. Guidance for Assessing Pesticide Risks to Bees. Office of Pesticide Programs, U.S. Environmental Protection Agency, Washington DC, Health Canada Pest Management Regulatory Agency, Ottawa, ON, Canada, California Department of Pesticide Regulation, Sacramento, CA. http://www2.epa.gov/sites/production/files/2014-06/documents/pollinator_risk_assessment_guidance_06_19_14.pdf

[16] Fischer, D., and T. Moriarty. 2014. Pesticide risk assessment for pollinators: summary of a SETAC Pellston Workshop. SETAC Press. http://www.setac.org/sites/default/files/executivesummarypollinators_20sep2011.pdf.

QUESTIONS FOR THE RECORD
The Honorable Bruce Westerman (R-AR)
U.S. House Committee on Science, Space, and Technology
Examining EPA's Regulatory Overreach
Monday, July 27, 2015

Questions for Administrator McCarthy
1. According to Cara Keslar's April 29th testimony in front of our Environment Subcommittee, Wyoming has submitted five demonstrations or petitions to EPA Region 8 for exceptional events decisions for stratospheric intrusions. According to Ms. Keslar, "Wyoming has only received one concurrence. The EPA has not acted on the other four demonstrations. The demonstrations were submitted between 2010 and 2013." Why is it taking EPA so long with these demonstrations and petitions? What kind of confidence does this track record give you with regard to future petitions under a lower standard?

Response to Question 1:

As mentioned in Ms. Keslar's testimony, EPA Region 8 has concurred on Wyoming's exceptional events demonstration for the June 14, 2012, stratospheric ozone intrusion event. The state's demonstration and EPA's subsequent concurrence were the result of a successful collaboration between technical and policy staff at both agencies. We look forward to building on this partnership as we work on future exceptional events demonstrations submitted by the state of Wyoming.

We acknowledge that there are a number of demonstrations that EPA has yet to take action on. In the case of exceptional events demonstrations related to stratospheric ozone intrusion, this delay is often due to the complexity of these unique atmospheric events and the need to meet the requirements of the 2007 Exceptional Events Rule. EPA is currently drafting revisions to the Exceptional Events Rule aimed at streamlining the overall exceptional events process. EPA anticipates proposing these revisions in fall 2015 through a public notice and comment rulemaking effort. EPA expects that these rule revisions along with a compilation of best practices for communication and collaboration between the EPA and air agencies will improve the efficiency of the process by which air agencies identify and develop demonstrations for relevant exceptional events and the EPA reviews these submissions.

In addition, EPA often prioritizes exceptional events demonstrations by their impact on a state's ability to meet a National Ambient Air Quality Standard (NAAQS). If the air quality data associated with an exceptional events demonstration do not affect a near-term regulatory decision associated with a relevant NAAQS or if there is no other compelling reason for excluding data, EPA may lower the priority of taking action on that demonstration. After discussing this process with Wyoming, EPA Region 8 applied this approach to the five stratospheric ozone intrusion demonstrations submitted by Wyoming, including the concurred upon June 14, 2012 demonstration. Region 8 acted on the June 14, 2012, demonstration because the exceedanees are associated with the Upper Green River Basin area, a current nonattainment area for the 2008 ozone NAAQS. The air quality data associated with the other four

demonstrations are not likely to influence future regulatory decisions affecting Wyoming, and therefore, Region 8 assigned a lower priority. Region 8 would review these other demonstrations in the future if they became significant – i.e., the Region determined the demonstrations had an impact on the state's ability to meet a NAAQS.

2. Currently your agency does NOT allow the public to see how many stratospheric intrusion events have been submitted to the EPA, including the response. Is this correct? Will you commit today to establishing a publicly accessibly website that shows when demonstrations were submitted and EPA's response?

Response to Question 2:

Because states submit exceptional events demonstration packages directly to their reviewing EPA regional office, there is no central or national tracking system for the submission and review of exceptional events requests. Some air agencies and EPA regions have developed their own processes, systems, and criteria to track exceptional event-related information. EPA is available to work with Members and will continue to work with the states to act on submissions that both states and EPA agree are priorities.

QUESTIONS FOR THE RECORD
The Honorable Suzanne Bonamici (D-OR)
U.S. House Committee on Science, Space, and Technology
Examining EPA's Regulatory Overreach
Monday, July 27, 2015

Questions for Administrator McCarthy

1. **When Congress passed legislation authorizing the creation of a Renewable Fuel Standard (RFS), one of the objectives was to diversify the nation's transportation fuel supply with domestic, renewable fuel. The RFS has effectively driven the development of renewable fuel, particularly conventional ethanol and biomass-based diesel, and created thousands of jobs in the renewable energy economy. Providing obligated parties and renewable fuel producers with certainty will help to ensure this progress continues and to further promote innovation for advanced renewable fuels, including cellulosic biofuels. Some stakeholders argue that EPA, as the implementing agency for the RFS, can do more to provide such certainty. When Congress passed the RFS, it provided EPA with waiver authority. More specifically, Congress authorized EPA to issue a general waiver of the RFS requirements, in whole or in part, if there is inadequate domestic renewable fuel supply to meet the mandate, and if implementation of the requirement would severely harm the economy or environment of a state, a region, or the United States. I am concerned that EPA's proposed standards for 2014, 2015, and 2016 for the RFS would limit renewable fuel volume requirements based, in part, on perceived constraints in the available infrastructure for distributing, blending, and dispensing renewable fuels, which some argue is outside the scope for implementing a general waiver. Can you explain why the EPA, in its proposed rule, is considering renewable fuel distribution infrastructure as a qualifying factor to issue a general waiver?**

Response to Question 1:

Congress specified increasing annual volume objectives under the RFS program for total renewable fuel, advanced biofuel, and cellulosic biofuel for every year through 2022, and for biomass-based diesel (BBD) through 2012, and authorized EPA to set volume objectives for subsequent years after consideration of several specified factors. As your question acknowledges, however, Congress recognized that circumstances could arise that might require a reduction in the volume objectives specified in the statute, as evidenced by the waiver provisions in section 211(o)(7) of the Clean Air Act.

As discussed in detail in the proposed rulemaking, we believe that limitations in production or importation of qualifying renewable fuels, *and* factors that limit supplying those fuels to the vehicles that can consume them, both constitute circumstances that could warrant a waiver under section 211(o)(7). With respect to infrastructure, the limited number and geographic distribution

of retail stations that offer higher ethanol blends such as E15 and E85, the number of flex fuel vehicles that have access to E85, as well as other market factors, combine to place significant restrictions on the volume of ethanol that can be supplied to vehicles at the present time. Stated differently, EPA believes it is appropriate to consider not only the production of the fuel, but also how much of that can be supplied to the consumer given real-world constraints. Based on our assessment of the maximum amount of renewable fuel that can be supplied in 2014, 2015 and 2016 in light of these constraints, we believe that circumstances exist that warrant a reduction in the statutory applicable volumes of advanced biofuel and total renewable fuel for 2014, 2015 and 2016.

We note that we are proposing to use the waiver authorities in a limited way that reflects our understanding of how to reconcile real marketplace constraints with Congress' intent to promote growth in renewable fuel use over time.

QUESTIONS FOR THE RECORD
The Honorable Eddie Bernice Johnson (D-TX_
U.S. House Committee on Science, Space, and Technology
(*Examining EPA's Regulatory Overreach*, July 27, 2015)

1.(a) Can you please describe the importance of ensuring the independence of the Science Advisory Board and other federal advisory committees from the agency and others; and

(b) What role, if any, does FACA play in maintaining this independence?

Response:

(a) Federal advisory committees (FACs) provide an invaluable service to the EPA as a source of scientific technical advice from diverse perspectives on matters critical to the agency's mission. Scientific and technical FACs such as the EPA Science Advisory Board (SAB) are essential venues for incorporating the ongoing dialogue in the broader scientific community and often are the route of choice for implementing rigorous, independent peer review of the scientific analyses designed to support EPA programs and decisions.

(b) The Federal Advisory Committee Act (FACA) directs agency heads establishing federal advisory committees (FACs) to assure that the advice of the FAC will be the result of its independent judgment, and not be inappropriately influenced by the agency that appoints the members or any special interest. For the SAB, this independence is critical to the credibility of the SAB's scientific findings and recommendations. Consistent with FACA's requirement that agencies establish administrative guidelines and management controls for its FACs, the EPA has developed a FACA Handbook, which outlines how the Agency appoints the members of its advisory committees, including the SAB, and, in the formal charter filed with Congress, the EPA describes the broad scope of the SAB's activities. Once a request for advice (or "charge") has been provided to the SAB, the Agency has procedural policies (consistent with the letter and spirit of FACA) designed to guard against inappropriate influence by the EPA or outside interests on the deliberations and conclusions of the SAB and its panels and committees in response to that charge.

Appendix II

SLIDES SUBMITTED DURING HEARING

SLIDE SUBMITTED BY REPRESENTATIVE SMITH

"Absolutely, the data on which regulatory decisions and other decisions are based should be made available to the Committee and should be made public…"

Dr. John Holdren, Director of the White House Office of Science and Technology Policy, Before the SST Committee, 2012

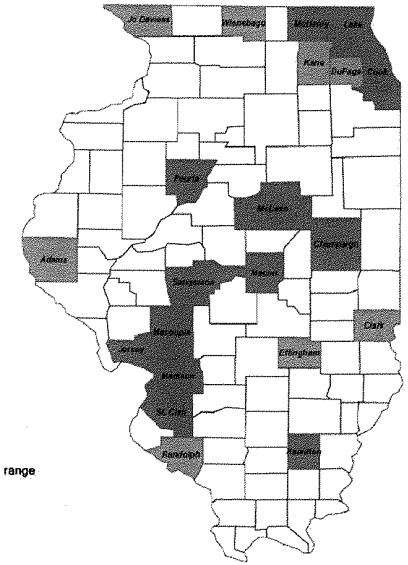
1

SLIDES SUBMITTED BY REPRESENTATIVE HULTGREN

According to EPA data, 21 counties in Illinois would be in non-attainment if EPA lowers Ozone NAAQS to 65ppb. Together, these counties represent 79% of the state's GDP.

The 21 counties represent the following:

- $613.4 billion or 79% of the state's GDP
- 6.0 million or 80% of the state's employment
- $347.9 billion or 85% of total employment compensation in the state
- Approximately 75% of the state's population

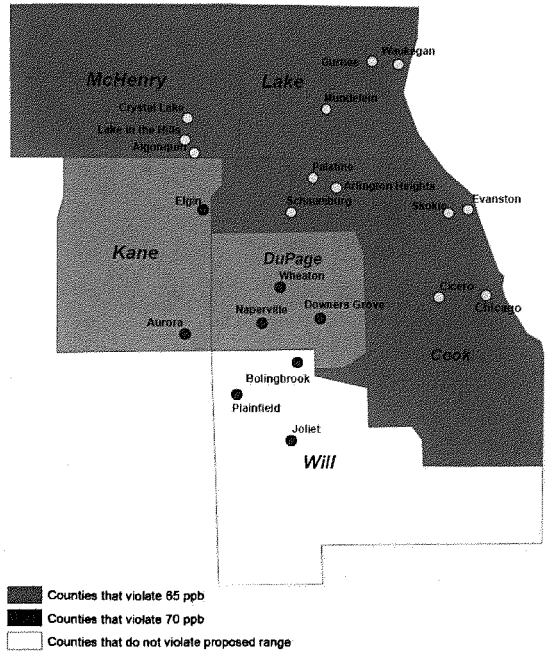


Counties that violate 65 ppb
Counties that violate 70 ppb
Counties that do not violate proposed range

Non-Attainment Counties*	2014 GDP Estimate (Bn $)	2013 Employment Estimate
Adams	3.4	43,166
Champaign	9.3	124,403
Clark	0.4	7,670
Cook	336.6	3,332,105
Du Page	89.5	742,072
Effingham	1.9	26,060
Hamilton	0.2	3,600
Jersey	0.4	8,130
Jo Daviess	0.7	12,536
Kane	33.8	270,028
Lake	45.2	446,048
Macon	6.0	63,262
Macoupin	1.0	16,057
Madison	10.6	127,105
McHenry	19.7	122,981
Mclean	10.7	111,669
Peoria	10.4	124,483
Randolph	1.1	14,696
Sangamon	9.2	122,964
St Clair	11.4	127,215
Winnebago	11.9	160,258
Total	**613.4**	**6,006,508**
Illinois	774.8	7,507,203

* Based on EPA analysis of 2011-2013 ozone data, accessed at http://www.epa.gov/groundlevelozone/pdfs/20141126-20112013datatable.pdf

The six Chicago collar counties – Cook, DuPage, Kane, Lake, McHenry, and Will represent 73% of the state's GDP. 5 out of the 6 counties would be in non-attainment at 65bbp – putting 65% of jobs in Illinois at risk.



The 6 counties surrounding Chicago represent the following:

- $568.8 billion or 73% of the state's GDP
- 5.2 million or almost 70% of the state's employment
- $308.9 billion or 75% of total employment compensation in the state
- Approximately 65% of the state's population

Chicago Collar Counties	2014 GDP Estimate (Bn $)	2013 Employment Estimate
Cook	336.6	3,332,105
Du Page	89.5	742,072
Kane	33.8	270,028
Lake	45.2	446,048
McHenry	19.7	122,981
Will*	44.0	277,541
Total	**568.8**	**5,190,775**
Illinois	774.8	7,507,203

* Will County would be near nonattainment at 64 ppb based on its 2011 to 2013 average.

EPA Region 5 Employee Raises Concerns to Ethics Official About EPA's Use of Thunderclap

From: Coyle, Ann
Sent: Monday, June 22, 2015 1:14 PM
To: McDermott, Marna
Cc: Tschampa, Andrew; Coyle, Ann
Subject: FW: Ethics Question

Marna,

I will forward to you whatever other email exchanges I have re: the OW thunderclap. If they are an imbedded string of messages, I'll only send along the most recent one, which includes the previous exchanges.

Below is my response to Andy Tschampa, after he brought it to my attention.

Ann L. Coyle
Regional Judicial Officer
Assistant Deputy Ethics Official
Phone: 312.886.2248
FAX: 312.692.2117

From: Coyle, Ann
Sent: Friday, September 19, 2014 2:59 PM
To: Tschampa, Andrew
Subject: RE: Ethics Question

Andy,

Thanks for bringing this to my attention. I passed your inquiry on to OGC/Ethics because it's a national concern. I don't know what they are going to do about it, but there is agreement that it's a problem. If I hear anything else, I'll let you know. In the meantime, you (and anyone else who asks), absolutely should not feel any pressure to participate. If you do, it's a separate and additional issue that I need to know about.

--Ann

Ann L. Coyle
Regional Judicial Officer
Assistant Deputy Ethics Official
Phone: 312.886.2248
FAX: 312.692.2117

From: Tschampa, Andrew
Sent: Thursday, September 18, 2014 9:13 AM
To: Coyle, Ann
Subject: RE: Ethics Question

1

The following information is an email recap of OW Division Director news. The "thunderclap" item is a social media activity intending to generate clean water awareness and support. The first link in the message goes to an EPA website on our proposed rule on the Clean Water Act (www.epa.gov/USwaters). I can't tell from the message if OW (EPA) is encouraging EPA employees to join thunderclap or if this is just an FYI that OW is pursuing public awareness. If by chance the message was intended to include EPA employees, is that OK to "use" employee social media to promote an employer cause?

>>>

EPA's Response to the *N.Y. Times* Asserts It Does Not Justify Rules Based on Favorable Comments

From: Bumiller, Elisabeth [mailto:bumiller@nytimes.com]
Sent: Tuesday, May 19, 2015 2:20 PM
To: Reynolds, Thomas; Mike Teckett
Cc: Margaret.Sullivan@nytimes.com; public@nytimes.com; coral.davenport@nytimes.com; Lipton, Eric
Subject: Re: EPA response to today's story

Dear Tom,

Thanks very much for this and our conversation today. I will leave it to Margaret Sullivan to respond on behalf of Times readers. We look forward to working with you in the future.

Best regards,

Elisabeth

On Tue, May 19, 2015 at 2:13 PM, Reynolds, Thomas <Reynolds.Thomas@epa.gov> wrote:

Dear Ms. Bumiller:

The New York Times story today headlined "Critics Hear E.P.A.'s Voices in 'Public Comments'" was riddled with errors, inference and inappropriate insinuation, demonstrating not only poor reporting and fact checking, but also a lack of understanding of the Clean Water Rule and the rulemaking process.

While the public's comments may provide some measure of general sentiment about a particular proposal, the purpose of seeking comment on the Clean Water Rule and all such proposals is to invigorate the process with new information and new perspectives, whether challenging to or supportive of any particular proposed approach. The public comment process is not only required by law, in this instance, but most often leads to stronger and better rules, based on science and the law. The agency learns from an engaged citizenry, and to do this, we ask for their input.

We do not justify our rules based on the leanings of comments – no matter how overwhelmingly favorable or opposed they may be to the Agency's proposal. It is not a popularity contest. We justify them based on our adherence to the law, and the science that backs them up.

The most problematic portion of the article is the lead-in suggesting that public engagement on the CWR "tests the limits of federal lobbying law." The piece correctly states that DOJ interprets the law to proscribe "communications by executive officials directed to members of the public at large, or particular segments of the general public, intended to persuade them in turn to communicate with their elected representatives on some issue of concern to the executive." But only in the second to last graph is it made clear that EPA has never encouraged the public or stakeholders to lobby elected representatives. This selective placement seems unfair to the issue, the agency, and most importantly your readers.

The piece also conflates providing information to the public on the proposal and encouraging public participation in the rulemaking process, on the one hand, with improper "lobbying" as defined above. The piece seems to imply that the agency may have done something questionable, even if legally permissible – but there is no articulation of what is problematic with touting the rule as good public policy, encouraging public participation in the rulemaking process, or about later making factual statements about evidence of public support for the rule.

From: Tom Reynolds
To: Elisabeth Bumiller
Subject: EPA response to today's story

"We do not justify our rules based on the leaning of comments – no matter how overwhelmingly favorable they may be…"

EPA Inappropriately Solicits NRDC for Reports Supporting its Regulatory Agenda

From: michael Goo[redacted]
Sent: Friday, December 9, 2011 5:30 PM
To: Hawkins, Dave <dhawkins@nrdc.org>
Subject: Re: Inside epa

Glad you are on the case and yes that part is wrong and lets talk about this more when you get back---maybe a report or two or something in january showing that there is no new coal being built might be helpful.....thx

From: "Hawkins, Dave" <dhawkins@nrdc.org>
To: Michael Goo [redacted]
Sent: Friday, December 9, 2011 12:51 PM
Subject: Inside epa

What I sent unattributed to inside epa in response to today's story
> "Flacks for the coal lobby are screaming about rumored content of a draft EPA rule for new fossil powerplants. They say it will kill new coal plants. Haven't they been paying attention? No one wants to build new coal plants. Except for a handful underway, no more are planned for a decade or more. Exactly why should EPA write a rule that is gerrymandered to make room for dirty plants that the private sector does not want to build?"

What is the deal with the heat rate form for the std? Is that accurate? If so, it would not be possible for a coal unit with CCS to comply. I assume this part is wrong.

Sent from my iPad

OP_2015_0005260

From: Michael Goo [EPA]
To: Dave Hawkins [NRDC]
Subject: Inside epa

"maybe a report or two or something in january showing there is no new coal being built might be helpful.....thx"

From: michael Goo
To:

"drosenberg@nrdc.org"
<drosenberg@nrdc.org>;
"jconsuegra@nrdc.org" <jconsuegra@nrdc.org>;
"jwalke@nrdc.org" <jwalke@nrdc.org>;
"tiernan_sittenfeld@lcv.org" <tiernan_sittenfeld@lcv.org>;

Sent: Friday, August 16, 2013 5:04 PM
Subject: Invitation to Goofest 2013

This party changed my life
- Goofest 2012 attendee (no identities will be shared, to protect the presumed innocence of former Goofest attendees

I don t remember what happened, but I m pretty sure I had a great time?
Goofest 2011 attendee

"Thank Buddha those people moved."
- Former Goo-Reed neigbors, Military Road in Arlington, 2009

OP_2015_0005217
OP_2015_0005218
OP_2015_0005219

From: Michael Goo
To: @NRDC.org
Subject: Invitation to Goofest 2013

"Even better than killing Bin Laden. I'm just jealous I don't have an ObamaFest. – Barack, 2012"

"I don't remember what happened, but I'm pretty sure I had a great time? Goofest 2011 attendee"

Invitation to NRDC and LCV Employees to Attend Private "Goofest" Party.

From: michael Goo [redacted]
Sent: Thursday, September 15, 2011 9:18 AM
To: Tiernan Sittenfeld <tiernan_sittenfeld@lcv.org>
Subject: Re: Save the Date Goofest 2011--September 11, 2011

ah--a good strategy....I'm so glad you came...I think Chris and I were obsessed with starting the bonfire at that time.....

From: Tiernan Sittenfeld <tiernan_sittenfeld@lcv.org>
To: michael Goo [redacted]
Sent: Thursday, September 15, 2011 9:15 AM
Subject: RE: Save the Date Goofest 2011--September 11, 2011

Definitely dark and, um, I think you d had several shots by then. Much to my chagrin I did not partake in the ice luge b/c I was driving myself and the Frangiones back to the district, but it was amazing!

From: michael Goo [redacted]
Sent: Thursday, September 15, 2011 9:10 AM
To: Tiernan Sittenfeld
Subject: Re: Save the Date Goofest 2011--September 11, 2011

ah---was it dark by then? How many shots of tequila had I had by then? Did you do a shot off the ice luge?

From: Tiernan Sittenfeld <tiernan_sittenfeld@lcv.org>
To: michael Goo [redacted]
Sent: Thursday, September 15, 2011 9:06 AM
Subject: RE: Save the Date Goofest 2011--September 11, 2011
You don t remember our long conversation? It really meant a lot to me! Just kidding we chatted very briefly down by the dock when Jess, Jeremiah, Kathleen F etc were down there.

From: michael Goo [redacted]
Sent: Thursday, September 15, 2011 9:05 AM
To: Tiernan Sittenfeld
Subject: Re: Save the Date Goofest 2011--September 11, 2011

Tiernan---thanks for coming! Did I miss you? Or am i just not remembering? Please come again next year!

From: Tiernan Sittenfeld <tiernan_sittenfeld@lcv.org>
To: Debbie Reed [redacted]
Michael Goo
Sent: Tuesday, September 13, 2011 1:18 PM
Subject: RE: Save the Date Goofest 2011--September 11, 2011

OP_2015_0005266

Hey Debbie and Michael,

Huge thanks for including me in Saturday s festivities! As always, I had a great time. It was so nice hanging out by the water with such fun people and such excellent food and drink. Hope to see you again soon.

Thanks again,
Tiernan

From: Tiernan Sittenfeld
To: Michael Goo
Subject: Save the Date Goofest 2011 – September 2011

"How many shots of tequila had I had by then? Did you do a shot off the ice luge?"

"Huge thanks for including me in Saturday's festivities!...It was so nice hanging out by the water with such fun people..."

3

EPA Employee Michael Goo Arranges Meeting With NRDC at Starbucks to Avoid EPA Visitor Log Record.

To: Goo, Michael[Goo.Michael@epa.gov]; Poole, Jacqueline[Poole.Jacqueline@epa.gov]
From: Devine, Jon
Sent: Fri 10/18/2013 3:40:15 PM
Subject: RE: General

I am out of town next Tuesday and Wednesday.

I am currently available at the following times:
Monday 10/21: all day before 4
Thursday 10/24: all day before 4
Friday 10/25: before noon or after 2

Jon Devine
Senior Attorney, Water Program
Natural Resources Defense Council
jdevine@nrdc.org
(202) 289-2381 (phone)
(202) 289-1689 (fax)
Admitted in Massachusetts and the District of Columbia only

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-----Original Appointment-----
From: Poole,Jacqueline@epa.gov [mailto:Poole.Jacqueline@epa.gov] **On Behalf Of** Goo, Michael
Sent: Friday, October 18, 2013 11:29 AM
To: Devine, Jon
Subject: FW: General
When: Tuesday, October 22, 2013 10:00 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).
Where: 1331 Pennsylvania Ave Nw - WashingtonJW Mariott - Starbucks

When: Tuesday, October 22, 2013 10:00 AM-11:00 AM (GMT-05:00) Eastern Time (US & Canada).
Where: 1331 Pennsylvania Ave Nw - WashingtonJW Mariott - Starbucks

Note: The GMT offset above does not reflect daylight saving time adjustments.

****

Hi

Is there any other dates and times that you can meet with Michel Goo?

-----Original Appointment-----

OP_2015_0000018

From: Jon Devine
To: Michael Goo
Subject: Re: General
Date: October 18, 2013

Meeting request
Where: 1331 Pennsylvania Ave Nw – Washington JW Marriott - Starbucks

From: michael Goo <[redacted]
Sent: Monday, September 9, 2013 10:31 PM
To: Philip Goo
Subject: Fw: Invitation to Goofest 2013 Update
Attach: image.png; image (1).png

----- Forwarded Message -----
From: michael Goo [redacted]
To: "[redacted] Jessica Maher
Sent: Monday, September 9, 2013 10:30 PM
Subject: Fw: Invitation to Goofest 2013 Update

Hey Jess, can you forward this Goofest update to your contact list?

Thanks
MLG

----- Forwarded Message -----
From: michael Goo [redacted]
To: [redacted]

"drosenberg@nrdc.org" <drosenberg@nrdc.org>; [redacted]
[redacted] "jconsuegra@nrdc.org" <jconsuegra@nrdc.org>; [redacted]
[redacted] "jwalke@nrdc.org" <jwalke@nrdc.org>;
[redacted]
"tiernan_sittenfeld@lcv.org" <tiernan_sittenfeld@lcv.org>; [redacted]

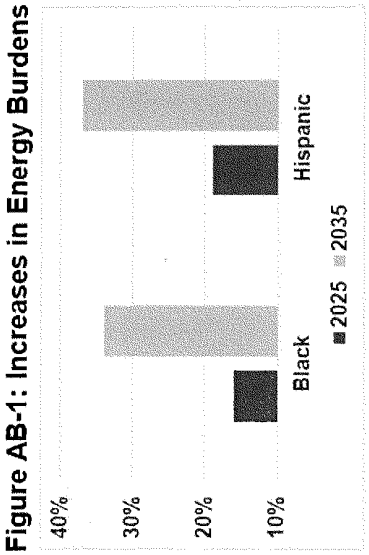
OP_2015_0005

From: Michael Goo
To: Jessica Maher [White House]
Subject: Invitation to Goofest 2013 Update

"Hey Jess, can you forward this Goofest update to your contact list?"

Slide submitted by Representative Babin

SLIDES SUBMITTED BY REPRESENTATIVE PALMER



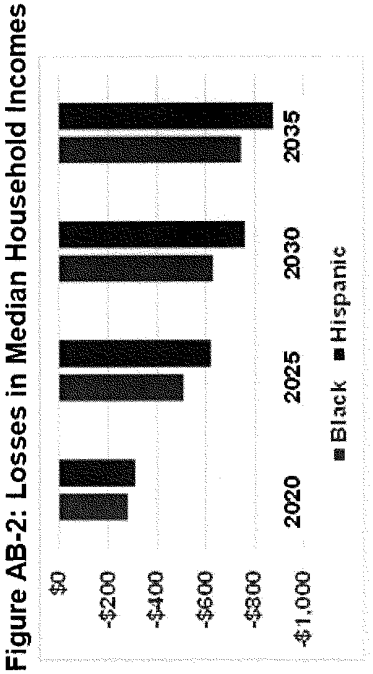


Figure EX-4: Black and Hispanic Job Losses Caused by the EPA Regulations

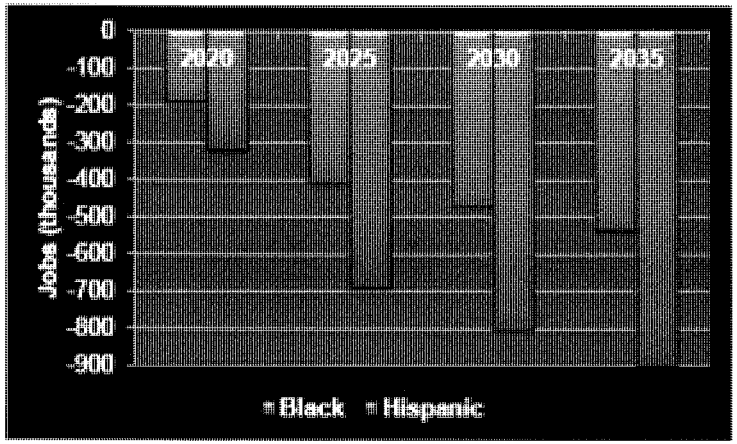
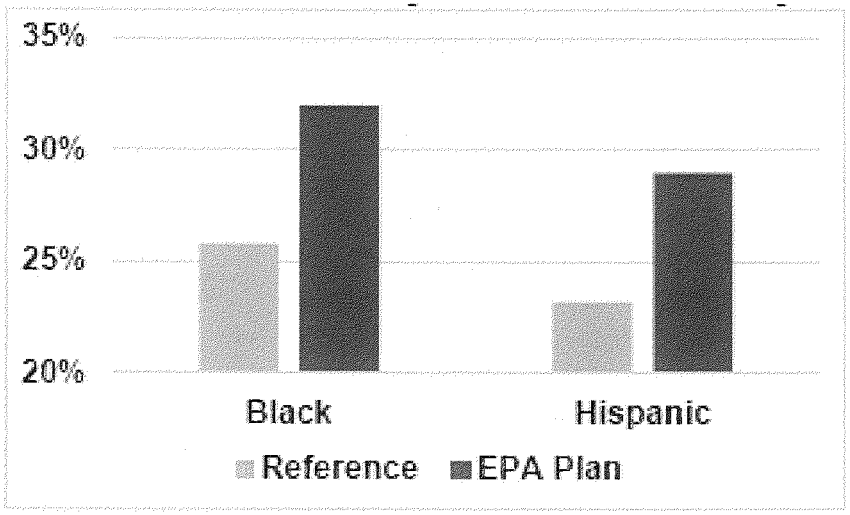


Figure EX-2: Increases in 2025 Poverty Rates Caused by the EPA Regulations



EPA Employees Discuss OMB Decision that WOTUS Rule is Economically Significant

To: Neugeboren, Steven[Neugeboren.Steven@epa.gov]
From: Evans, David
Sent: Tue 11/5/2013 10:14:04 PM
Subject: RE: WOUS/EO 12866 issue for bob p triweekly tomorrow

Steve,

Economic assessment identified "indirect" costs that are well above $100 M/yr. I think EPA has claimed the indirect effects of a definitional rule should not be used to trigger that $ threshold identifying economically significant policy actions. Jim Laity seems to have decided otherwise. In any case, as you note, it was going through formal interagency review already, so impact not evident.

Dave Evans

David S. Evans, Acting Deputy Director

Office of Wetlands, Oceans and Watersheds

Phone: 202-566-0535

From: Neugeboren, Steven
Sent: Tuesday, November 05, 2013 5:10 PM
To: Evalenko, Sandy; Wendelowski, Karyn
Cc: Nelson, Tomeka; Lousberg, Macara; Corona, Joel; Srinivasan, Gautam; Wendelowski, Karyn; Mallory, Brenda; Peck, Gregory; Best-Wong, Benita; Evans, David; Pendergast, Jim
Subject: WOUS/EO 12866 issue for bob p triweekly tomorrow

I'm copying other relevant folks from WLO as well as Brenda Mallory, who should be attending the mtg with bob for OGC, and our cross-cutting issues lawyers and OWOW. OW is looking for any OGC advice as to whether categorizing the proposed waters of US rule as "economically significant" has legal implications.

As I understand it we have done an economic analysis and I assume the impacts are well below 100 million, but OWOW can inform. But I assume we have in the past sent rules like this to

RFA_2015_0000867

To: Steven Neugeboren
From: David Evans

"Economic assessment identified 'indirect' costs that are well above $100 million a year. I think EPA has claimed the indirect effects of a definitional rule should not be used to trigger the $ threshold identifying economically significant policy actions. Jim Laity [at OMB] seems to have decided otherwise."

EPA Makes Political Decision Not to Conduct RIA on WOTUS Rule

To: Best-Wong, Benita[Best-Wong.Benita@epa.gov]; Evans, David[Evans.David@epa.gov]
Cc: Kaiser, Russell[Kaiser.Russell@epa.gov]; Downing, Donna[Downing.Donna@epa.gov]
From: Pendergast, Jim
Sent: Tue 11/19/2013 2:02:04 PM
Subject: RE: Consequences of WUS Proposed Rule Considered as Economically Significant

Good news. Tomeka and Sandy talked to Ken, and Ken said it has been agreed we do not need an RIA. Let's leave this at that.

From: Pendergast, Jim
Sent: Tuesday, November 19, 2013 8:42 AM
To: Best-Wong, Benita; Evans, David
Cc: Kaiser, Russell
Subject: RE: Consequences of WUS Proposed Rule Considered as Economically Significant

Just got off the phone with Sandy and Tomeka. They say that Nancy and Ken know that an RIA may be necessary, but that there are some economically significant rules from EPA that haven't had an RIA. They are checking with OP to see if there was some agreement at the political level that we don't need to conduct an RIA. Geez.

From: Pendergast, Jim
Sent: Tuesday, November 19, 2013 8:28 AM
To: Best-Wong, Benita; Evans, David
Cc: Kaiser, Russell
Subject: Consequences of WUS Proposed Rule Considered as Economically Significant

Benita – We're following up on the info you passed on from the Nov. 15 OW office directors meeting regarding the proposed rule. You relayed to us that Greg Peck said the rule was now considered significant, and that OMB was unlikely to change that designation, and that what we needed to do was revise the economic analysis.

We double checked on this. Turns out that the rule is now considered as "economically significant" by OMB. We checked with Caryn Muellerleile of OP on what this means in terms of information that EPA has to deliver. Caryn informed us that under EPA guidance (see page 49 of the attached), EPA develops a Regulatory Impact Analysis for economically significant rules.

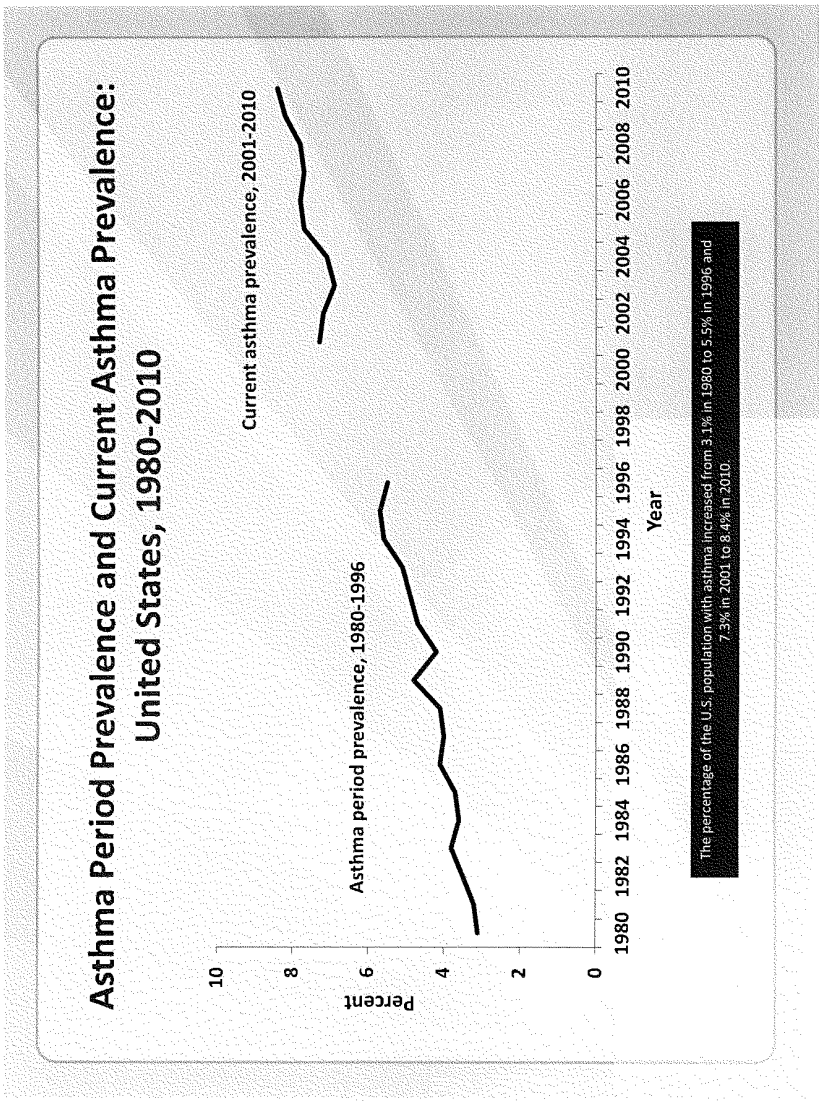
RFA_2015_0000243

From: Jim Pendergast
To: EPA Office of Water employees

"Good news. Tomeka and Sandy talked to Ken [Kopocis], and Ken said it has been agreed we do not need an RIA. Let's leave this at that"

"Nancy [Stoner] and Ken [Kopocis] know that a [Regulatory Impact Analysis] may be necessary, but that there are some economically significant rules from EPA that haven't had an RIA. They are checking with [Office of Policy] to see if there was some agreement at the political level that we don't need to conduct an RIA."

SLIDE SUBMITTED BY REPRESENTATIVE ABRAHAM



Appendix III

Additional Material for the Record

DOCUMENTS SUBMITTED BY REPRESENTATIVE EDWARDS

14-R-32

RESOLUTION OF THE MAYOR AND COUNCIL OF THE CITY OF COLLEGE PARK, MARYLAND IN SUPPORT OF THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY AND ARMY CORPS OF ENGINEERS' PROPOSED *DEFINITION OF "WATERS OF THE UNITED STATES"* UNDER THE CLEAN WATER ACT

A resolution for the purpose of protection of public health, recreational resources, economic livelihood related to clean water, under the Waters of the United States as it provides an extraordinary value for the City of College Park.

WHEREAS, the Mayor and Council recognize that the Clean Water Act is the fundamental federal law protecting the Waters of the United States from pollution, degradation and destruction, and that strong federal standards are needed because water does not respect political boundaries; and

WHEREAS, critical streams and wetlands which supply drinking water, protect against floods and filter pollution previously were protected under the Clean Water Act, but federal policy changes over the last decade have left these streams and wetlands vulnerable to degradation or destruction; and

WHEREAS, these vulnerable waters of the United States impact sources of drinking water for over 117 million Americans, including 5,885,000 residents in Maryland; and

WHEREAS, more than 1,000 peer reviewed scientific studies have confirmed that headwater intermittent and ephemeral streams and wetlands affect the quantity and quality of water in larger bodies of water downstream; and

WHEREAS, the U.S. Environmental Protection Agency and Army Corps of Engineers have proposed a clarifying rulemaking that all tributary streams, regardless of size or frequency of flow are covered under the Clean Water Act, which will restore protections to 2210 miles of streams in Maryland that 77% of our residents depend on for drinking water.

NOW, THEREFORE, BE IT RESOLVED that the Mayor and Council of the City of College Park, Maryland supports the proposed *Definition of "Waters of the United States"* under the Clean Water Act and urges the Environmental Protection Agency and Army Corps of Engineers to finalize these important protections for our nation's water resources.

ADOPTED by the Mayor and Council of the City of College Park, Maryland at a regular meeting on the 14th day of October, 2014.

EFFECTIVE the 14th day of October, 2014.

WITNESS:

Janeen S. Miller

Janeen S. Miller, CMC, City Clerk

CITY OF COLLEGE PARK, MARYLAND

Andrew M. Fellows, Mayor

CITY OF BALTIMORE
COUNCIL BILL 14-0185R
(Resolution)

Introduced by: Councilmembers Kraft, Scott, Henry, Middleton, Mosby, Holton, Welch, Reisinger, Stokes, Branch, Clarke, Curran, President Young
Introduced and adopted: September 8, 2014

A COUNCIL RESOLUTION CONCERNING

In Support of the Definition of "Waters of the United States" Under the Clean Water Act Proposed by the Environmental Protection Agency and the Army Corps of Engineers.

FOR the purpose of supporting the Environmental Protection Agency's ("EPA") and the Army Corps of Engineers' (the "Corps") proposed definition of "Waters of the United States" under the Clean Water Act; helping to enhance the protection of our nation's public health and aquatic resources, and increasing the Clean Water Act's program predictability and consistency by clarifying the scope of the "Waters of the United States" protected under the Act.

Recitals

The waters of the United States are a treasured resource. In Maryland, the clean water that they provide protects public health, recreational resources, and economic livelihood.

The Clean Water Act is the fundamental federal law protecting the waters of the United States from pollution, degradation, and destruction. Strong federal standards are needed to provide these protections because water does not respect political boundaries. More than one thousand peer-reviewed, scientific studies have confirmed that headwater intermittent and ephemeral streams and wetlands affect the quantity and quality of water in larger bodies of water downstream.

Critical streams and wetlands which supply drinking water, protect against floods, and filter pollutants were once protected under the Clean Water Act. Federal policy changes over the last decade, however, have left these streams and wetlands vulnerable to degradation and destruction. These vulnerable waters of the United States, now unprotected and vulnerable, directly impact sources of drinking water for over 117 million Americans, including 3,990,016 residents here in Maryland.

Both the EPA and the Corps have proposed a clarification of the definition so that there is no misunderstanding all tributary streams, regardless of size or frequency of flow are covered under the Clean Water Act. Of particular importance is the fact that an additional proposal not only leaves in place all of the existing agricultural exemptions but also creates new exemptions for agricultural practices related to conservation.

According to Clean Water Action, this will restore protections to 2,210 miles of streams in Maryland that 77% of its residents depend upon for drinking water. In the greater Baltimore area that constitutes roughly 1.6 million people, including every one of our City residents.

EXPLANATION: Underlining indicates matter added by amendment.
~~Strike out~~ indicates matter deleted by amendment.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF BALTIMORE, that the Council supports the proposed definition of "*Waters of the United States*" under the Clean Water Act and urges the Environmental Protection Agency and the Army Corps of Engineers to take whatever actions deemed necessary to finalize these important protections for our nation's resources.

AND BE IT FURTHER RESOLVED, That a copy of this Resolution be sent to the Mayor; the Administrator of the U.S. Environmental Protection Agency; the Assistant Secretary of the Army, Department of the Army, Civil Works; The Maryland House and Senate Delegations to the 113th Congress; and the Mayor's Legislative Liaison to the City Council.

Read: October 14,2014
Voted and Adopted: 10/14, 2014

RESOLUTION 2014 - 13

A Resolution of the Town of Capitol Heights for the support of the Environmental Protection Agency and Army Corps of Engineer's proposed *Definition of "Waters of the United States" Under the Clean Water Act.*

For the purpose of protection of public health, recreational resources, economic livelihood related to clean water, under the Waters of the United States as it provides an extraordinary value for the Town of Capitol Heights and;

WHEREAS, The Mayor and Council of the Town of Capitol Heights recognizes the Clean Water Act is the fundamental federal law protecting the Waters of the United States from pollution, degradation and destruction and strong federal standards are needed because water does not respect political boundaries; and

WHEREAS, critical streams and wetlands which supply drinking water, protect against floods and filter pollution previously were protected under the Clean Water Act, but federal policy changes over the last decade have left these streams and wetlands vulnerable to degradation or destruction; and

WHEREAS, these vulnerable waters of the United States impact sources of drinking water for over 117 million Americans, including 5,885,000 residents in Maryland; and

WHEREAS, more than 1,000 peer reviewed scientific studies have confirmed that headwater intermittent and ephemeral streams and wetlands affect the quantity and quality of water in larger bodies of water downstream; and

WHEREAS, the U.S. Environmental Protection Agency and Army Corps of Engineers have proposed a clarifying rulemaking that all tributary streams, regardless of size or frequency of flow are covered under the Clean Water Act and according to Clean Water Action will restore protections to 2210 miles of streams in Maryland that 77% of our residents depend on for drinking water.

BE IT FURTHER RESOLVED BY THE MAYOR AND COUNCIL OF THE TOWN OF CAPITOL HEIGHTS supports the proposed *Definition of "Waters of the United States"* under the Clean Water Act and urges the Environmental Protection Agency and Army Corps of Engineers to finalize these important protections for our nation's water resources. This Resolution shall take effect immediately.

READ AND PASSED THIS 14 day of October, 2014.

ATTEST:

Stevie Cox

Town Administrator

APPROVED:

Marnitta L. King

Mayor

Victor L. James, Sr.

Councilmember

Renita A. Cason

Councilmember

Tamil Perry

Councilmember

Linda D. Monroe

Councilmember

Darrell Miller

Councilmember

Elaine Williams

Elaine Williams

Councilmember

City of Rockville
111 Maryland Avenue
Rockville, Maryland
20850-2364
www.rockvillemd.gov

240-314-5000
TTY 240-314-8137

October 15, 2014

Water Docket
Environmental Protection Agency
Mail Code 2822T
1200 Pennsylvania Avenue NW
Washington, D.C. 20460

Re: Docket ID No. EPA-HQ-OW-2011-0880

Dear Sir or Madam:

On behalf of the Mayor and Council of Rockville, Maryland, the City would like to provide comment on the proposed regulatory definition of Waters of the United States jointly proposed by the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers on April 21, 2014. The proposed rule seeks to clarify the existing definition of "waters of the United States" used to determine where the Clean Water Act programs are implemented by the two agencies.

Rockville supports the rulemaking and encourages the agencies to provide even greater clarity in the final rule. Rockville is a Maryland leader in developing and implementing local environmental and sustainability programs. The City has a population of over 63,000, and three watersheds flow through our jurisdiction. Like many other cities in the country, we grapple with water pollution from our urban landscape. Rockville was the first local government in Maryland to adopt a stormwater regulatory program (1978), nearly ten years before the Clean Water Act required such programs. Further, the City holds four separate NPDES permits for various City discharges.

The City recognizes that the Clean Water Act provides essential safeguards for maintaining clean and healthy rivers and streams, as well as protections for people and wildlife that call these watersheds home.

Rockville applauds the agencies for proposing to revise the existing definition to conform to recent Supreme Court cases. The City understands that for the last several years, EPA and the Corps of Engineers have been filling this gap with program guidance to field staff. Rockville supports the agencies' efforts to bring increased certainty and predictability to this fundamental Clean Water Act definition and the City believes the proposed rule goes a long way toward that end. Rockville encourages the agencies to include even more specificity in the final rule to ensure that it is as clear as possible and reduce the possibility of

MAYOR
Bridget Donnell Newton

COUNCIL
Beryl L. Feinberg
Tom Moore
Virginia D. Onley
Julie Palakovich Carr

CITY MANAGER
Barbara D. Matthews

ACTING CITY CLERK
Sara Taylor-Ferrell

CITY ATTORNEY
Debra Yerg Daniel

further litigation. For example, the City recommends that a definition of "ditches draining uplands" be added to the final rule.

The City acknowledges that the lack of specificity in the existing rule has led to the confusion, controversy, and litigation resulting in this proposal. The proposal seeks to

simplify the decision making process in the field and reduce the possibility of further litigation over whether a given water body is covered by the Clean Water Act's provisions.

Rockville is currently awaiting the reissuance of our MS4 general permit by the Maryland Department of the Environment. The delay in receiving this permit is hindering our ability to designate appropriate resources and evaluate the effectiveness of the measures that the City has already put into place meet the goals regarding Chesapeake Bay restoration. To the extent that some of this delay may be attributed to the pending definitional change, the City encourages the agencies to move expeditiously forward to complete the rulemaking.

The City firmly believes additional clarity in rulemakings always improves understanding and implementation of federal, state, and local environmental programs.

Sincerely,

Bridget Donnell Newton

Bridget Donnell Newton, Mayor

Beryl L. Feinberg

Beryl L. Feinberg, Councilmember

Tom Moore

Tom Moore, Councilmember

Virginia D. Onley

Virginia D. Onley, Councilmember

Julie Palakovich Carr

Julie Palakovich Carr, Councilmember

The Mayor and Council of Rockville

Town of Forest Heights
5508 ARAPAHOE DRIVE
FOREST HEIGHTS, MARYLAND 20745-1998
(301) 839-1030
Fax (301) 839-9236

Jacqueline Goodall
Mayor

October 20, 2014

The Honorable Gina McCarthy, Administrator
US Environmental Protection Agency

The Honorable Jo-Ellen Darcy
Assistant Secretary of the Army
Department of the Army, Civil Works

Re: Docket ID # EPA-HQ-OW-20011-0880

Dear Administrator McCarthy and Assistant Secretary Darcy,

The Town of Forest Heights Council and myself support the US Environmental Protection Agency and US Army Corps of Engineers proposed *Definition of "Waters of the United States Under the Clean Water Act"* to clarify which streams, wetlands and other waters are covered by Clean Water Act protections, Wetlands and small streams, including those that flow only seasonally, have a direct impact on the health and quality of larger streams and rivers downstream. Without the protection of Clean Water Act, the surface water that provides the life blood to people and wildlife will be in even greater peril.

For its first thirty years, the Clean Water Act safeguarded nearly all of our nation's waters. These protections are necessary to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters," as intended by Congress when it passed the Clean Water Act in 1972. Despite the law's dramatic progress at combating water pollution nationally, federal policy changes in the last decade have left many small streams and "isolated" wetlands vulnerable to pollution or destruction.
These federal policy changes have called into question Clean Water Act protections for nearly 60% of our nation's streams miles and at least 20 percent of the 110 million acres of wetlands in the continental United States. This confusion has put the drinking water for 117 million Americans at risk, including 5,773,552 people in the State of Maryland. Millions of small streams and wetlands provide most of the flow to our most treasured rivers, including Potomac River and the Chesapeake Bay. If we do not protect these networks of small streams that make up your watersheds we cannot protect and restore the lakes, rivers and bays that our economy and way of life depend on. We will also be jeopardizing jobs and revenue in businesses that depend on clean water, including outdoor activities like angling and water-based recreation.

As local and state decision makers, we believe broad federal protections are critical to protecting our local waters. Water flows downhill, and each of the lower 48 states have water bodies that are downstream of one or more other states. Maintaining consistency among water pollution programs throughout these states is essential. Since the passage of the Clean Water Act, states have come to rely on the Act's core provisions and have structured our own water pollution programs accordingly.

Mayor and Town Council
of Edmonston, Maryland

Resolution 2014 - 03

A resolution in support of the Environmental Protection Agency and the Army Corps of Engineers' proposed *Definition on "Waters of the United States"* under the Clean Water Act.

WHEREAS, The Mayor and Council recognize the Clean Water Act is the fundamental federal law protecting the Waters of the United States from pollution, degradation and destruction and strong federal standards are needed because water does not respect political boundaries; and

WHEREAS, critical streams and wetlands which supply drinking water, protect against floods and filter pollution previously were protected under the Clean Water Act, but federal policy changes over the last decade have left these streams and wetlands vulnerable to degradation or destruction; and

WHEREAS, these vulnerable waters of the United States impact sources of drinking water for over 117 million Americans, including 5,885,000 residents in Maryland; and

WHEREAS, more than 1,000 peer reviewed scientific studies have confirmed that headwater intermittent and ephemeral streams and wetlands affect the quantity and quality of water in larger bodies of water downstream; and

WHEREAS, the U.S. Environmental Protection Agency and Army Corps of Engineers have proposed a clarifying rulemaking that all tributary streams, regardless of size or frequency of flow are covered under the Clean Water Act and according to Clean Water Action will restore protections to 2210 miles of streams in Maryland that 77% of our residents depend on for drinking water.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Town Council of the Town of Edmonston, Maryland supports the proposed *Definition of "Waters of the United States"* under the Clean Water Act and urges the Environmental Protection Agency and Army Corps of Engineers to finalize these important protections for our nation's water resources.

ADOPTED by the Mayor and Council of the Town of Edmonston, the 14th day of October, 2014

BY ORDER of the Mayor and Town Council, I hereby certify that Resolution Number 2014- 03 is true and correct and duly adopted by the Mayor and Town Council of the Town of Edmonston

ATTEST/WITNESS:

Town of Edmonston, Maryland
Tracy Gant, Mayor

Michelle Rodriguez, Town Clerk

November 14, 2014

The Honorable Gina McCarthy
Administrator
US Environmental Protection Agency

The Honorable Jo-Ellen Darcy
Assistant Secretary of the Army
Department of the Army, Civil Works

Water Docket
Environmental Protection Agency
Mail Code 2822T
1200 Pennsylvania Avenue
Washington, DC 20460

Re: Clean Water Rule Docket ID # EPA-HQ-OW-20011-0880

Dear Administrator McCarthy and Assistant Secretary Darcy:

We, the undersigned state and local decision makers support the US Environmental Protection Agency (EPA) and US Army Corps of Engineers (Corps) proposed *Definition of "Waters of the United States Under the Clean Water Act"* to clarify which streams, wetlands and other waters are protected as Congress originally intended when it passed its landmark Clean Water Act in 1972.

For its first thirty years, the Clean Water Act safeguarded nearly all of our rivers, streams, lakes and wetlands in order to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." However, despite the law's dramatic progress at combating water pollution nationally, federal policy changes in the last decade have left many small streams and "isolated" wetlands vulnerable to pollution or destruction. These federal policy changes have called into question Clean Water Act protections for nearly 60% of our nation's stream miles and at least 20 million acres of wetlands in the continental United States.

Maryland's economy and quality of life has always depended on the protection and accessibility of clean water. Since the passage of the Clean Water Act, states have come to rely on the Act's core provisions and have structured our own water pollution programs accordingly. EPA's regulation in this area historically has been a prime example of the vital partnership between the states and federal government.

We support the proposed rule for the clear protections it restores to headwaters, intermittent and ephemeral streams, and to wetlands and other waters located near or within the floodplain of these tributaries. We urge the Agencies to strengthen the final rule by further clarifying that important wetlands and other waters located beyond floodplains are also categorically protected under the Clean Water Act.

Headwater and seasonal streams feed the drinking water sources of 117 million Americans, including 3,990,016 residents in Maryland. Clarifying that all tributary streams, regardless of size or frequency of flow are covered

1010 Vermont Avenue NW, Suite 400 | Washington, DC 20005 | Phone: 202.895.0420 | Fax: 202.895.0438
1120 N. Charles Street, Suite 415 | Baltimore, MD 21201 | Phone: 410.235.8808 | Fax: 410.235.8816
www.cleanwateraction.org/md

under the Clean Water Act will restore protections to 2,210 miles of streams in Maryland that 77% of our residents depend on for drinking water. In several jurisdictions the number is as high as 100% of residents. Millions of small streams and wetlands provide most of the flow to our most treasured rivers that feed the Chesapeake Bay. If we do not protect these streams and wetlands, we cannot protect the livelihood on which communities and local economies depend. Leaving critical water resources vulnerable jeopardizes drinking water sources, public health and quality of life, as well as jobs and revenue for businesses that depend on clean water, including commercial fishing, outdoor activities and water-based recreation.

We support the Agencies' proposal to define all tributaries as "waters of the United States," including headwaters and small streams that may only flow seasonally.

Headwater streams, streams that have no other streams feeding into them, provide most of the flow to downstream streams and rivers, and account for 59% of the total stream miles in Maryland. In 2007, EPA estimated that 46% of individual NPDES discharge permits in Maryland are for discharges into headwater streams, including some streams that do not flow year round. As Maryland finalizes its next round of permits maintaining consistency among water pollution programs throughout the states and local jurisdictions is essential.

Intermittent and ephemeral streams may only flow during parts of the year, but they support water quality in downstream waters by filtering pollutants and capturing nutrients and making up 19% of streams in Maryland do not flow year round. These streams are also critical habitat for fish and other aquatic species. There is great potential for re-connecting and protecting the many miles of river and stream systems flowing throughout Maryland and into the Chesapeake Bay. These waters benefit resident freshwater and saltwater fish and wildlife alike, contributing significantly to the state's economy in commercial fishing industry, recreation and tourism.

As a major producer and processor of seafood in the U.S., Maryland is a national leader in supplying blue crabs and soft clams. The Chesapeake Bay provides 50% of the total blue crab harvest in the United States. Important commercial species, besides blue crabs and soft clams, including striped bass, oysters, flounder, perch, spot, croaker, catfish, sea trout, and bluefish add to the economic importance of the state's fishing industry. Each year, the Maryland seafood industry contributes some $600 million to the State's economy. Annual commercial landings have averaged 56.9 million pounds since 2000. The Agencies' proposal for protecting water resources is critical to the continuation and growth of this industry in Maryland and nationally.

Protecting small streams and wetlands is also vital for to the state's vibrant recreation and tourism industries as an essential driver of economic activity, bringing in revenue from residents and out-of-state visitors alike. Outdoor recreation attracts and sustains families and businesses, creates healthy communities and fosters a high quality of life. At least 43% of Marylanders participate in outdoor recreation each year. Overall outdoor recreation generated $9.5 billion in consumer spending in Maryland and supports 85,000 jobs. Additionally, the economic impact of tourism in Maryland is significant. More than 35.4 million people visited Maryland in 2012 and spent $14.9 billion on travel and other related activities.

Many of the names of our cities, towns and hamlets have their roots and derive their names from the very rivers, streams or water-bodies where they are located and have harnessed the abundant water supplies that fueled their local economies. Today many of these locations have transformed themselves into recreation and river tourism

1010 Vermont Avenue NW, Suite 400 | Washington, DC 20005 | 1120 N. Charles Street, Suite 415 | Baltimore, MD 21201
Phone: 202.895.0420 | Fax: 202.895.0438 | Phone: 410.235.8808 | Fax: 410.235.8816
www.cleanwateraction.org/md

areas. A 2011 US Census survey found that 1.6 million residents and nonresidents over the age of 16 fished, hunted, or wildlife watched, generating $1.3 billion in economic revenue for Marylanders.

As state and local decision makers we know that society operates best when there is regulatory certainty. We value the protection that the EPA and Army Corps guarantee for our water supply – consistent regulations that limit pollution and protect water at its source will enable Maryland to thrive and expand its economy. When finalized, this rule will provide the regulatory assurance that has been absent for over a decade, eliminate permit confusion and delay, and better protect the critical water resources on which our communities depend.

Clean water is our state's lifeblood and is inextricably tied to the quality of life of our citizens. It drives us to become better stewards of our water resources, creating policies to address water purity, consumption and management issues. The Agencies' commonsense proposal is based on the best scientific understanding of how streams and wetlands affect downstream water quality. Supporting policies that minimize our impact on water resources is part of being a responsible leader and representative. For these reasons, we support the draft rule's proposal to restore Clean Water Act protections to all tributaries of navigable waterways and encourage the Agencies to finalize the proposal without delay and reject any efforts to weaken it.

We thank the Agencies for their efforts to protect these waters and look forward to the final approval and implement of a strong *"Definition of Waters of the United States under the Clean Water Act."*

Sincerely,

Paul Pinsky
Maryland State Senate
22nd Legislative District

Karen Montgomery
Maryland State Senate
14th Legislative District

Richard Madaleno
Maryland State Senate
18th Legislative District

Joanne Benson
Maryland State Senate
24th Legislative District

Shirley Nathan-Pulliam, RN
Maryland State Senate-Elect
10th Legislative District

Jamie Raskin
Maryland State Senate
20th Legislative District

Roger Manno
Maryland State Senate
19th Legislative District

Delores Kelley
Maryland State Senate
10th Legislative District

Ron Young
Maryland State Senate
3rd Legislative District

Susan Lee
Maryland State Senate-Elect
16th Legislative District

Cheryl Kagan
Maryland State Senate-Elect
17th Legislative District

Chairwoman Sheila Hixson
Maryland House of Delegates
20th Legislative District

Elizabeth Bobo
Maryland House of Delegates
12B Legislative District

Dan Morhaim
Maryland House of Delegates
11th Legislative District

Tom Hucker
Maryland House of Delegates
20th Legislative District

Barbara Frush
Maryland House of Delegates
21st Legislative District

David Fraser-Hidalgo
Maryland House of Delegates
15th Legislative District

Joseline Pena-Melnyk
Maryland House of Delegates
21st Legislative District

Shane Robinson
Maryland House of Delegates
39th Legislative District

Alfred Carr
Maryland House of Delegates
18th Legislative District

Heather Mizeur
Maryland House of Delegates
20th Legislative District

Mary Washington, PhD
Maryland House of Delegates
43rd Legislative District

Nathanial McFadden
Maryland State Senate
45th Legislative District

Terri Hill, M.D.
Maryland House of Delegates-Elect
12th Legislative District

Stephen Lafferty
Maryland House of Delegates
42nd Legislative District

Ana Sol Gutierrez
Maryland House of Delegates
18th Legislative District

Eric Bromwell
Maryland House of Delegates
8th Legislative District

Jeffery Waldstreicher
Maryland House of Delegates
18th Legislative District

Andrew Platt
Maryland House of Delegates-Elect
17th Legislative District

1010 Vermont Avenue NW, Suite 400 | Washington, DC 20005 1120 N. Charles Street, Suite 415 | Baltimore, MD 21201
Phone: 202.895.0420 | Fax: 202.895.0438 Phone: 410.235.8808 | Fax: 410.235.8816
www.cleanwateraction.org/md

Resolution ##-2014
Page 1 of 2

Introduced Read and Adopted 11/5 2014
Amended ____, 2014
Posted ____to___, 2014

CITY OF MOUNT RAINIER
RESOLUTION ~~##~~-2014
13

A Resolution in support of the Environmental Protection Agency and Army Corps of Engineer's proposed *Definition of "Waters of the United States" Under the Clean Water Act.*

WHEREAS, the Mayor and Council recognizes the Clean Water Act is the fundamental federal law protecting the Waters of the United States from pollution, degradation and destruction and strong federal standards are needed because water does not respect political boundaries; and

WHEREAS, critical streams and wetlands which supply drinking water, protect against floods and filter pollution previously were protected under the Clean Water Act, but federal policy changes over the last decade have left these streams and wetlands vulnerable to degradation or destruction; and

WHEREAS, these vulnerable waters of the United States impact sources of drinking water for over 117 million Americans, including 5,885,000 residents in Maryland; and

WHEREAS, more than 1,000 peer reviewed scientific studies have confirmed that headwater intermittent and ephemeral streams and wetlands affect the quantity and quality of water in larger bodies of water downstream; and

WHEREAS, the U.S. Environmental Protection Agency and Army Corps of Engineers have proposed a clarifying rulemaking that all tributary streams, regardless of size or frequency of flow are covered under the Clean Water Act and according to Clean Water Action will restore protections to 2210 miles of streams in Maryland that 77% of our residents depend on for drinking water.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCIL, show support for the proposed *Definition of "Waters of the United States"* under the Clean Water Act and urges the Environmental Protection Agency and Army Corps of Engineers to finalize these important protections for our nation's water resources.

Resolution 13-2014
Page 2 of 2

Attest

Jeannelle B. Wallace
Jeannelle Wallace
City Manager

Malinda Miles
Mayor Malinda Miles

Jesse Christopherson

Jimmy Tarlon

Brent Balin

Why Restoring Clean Water Act Protections is Good for Businesses – Suggested Talking Points

- Clean water is an economic driver for our communities. Polluted water creates no economic value for communities or business owners. In fact, healthy rivers, lakes and bays enhance the economic value of businesses and homes.

- Businesses ranging from clean tech to craft brewers all depend on high quality clean water to produce or manufacture their products.

- America's manufacturers require clean and ample water supplies. Manufacturing companies use nine trillion gallons of fresh water every year.

- The beverage industry uses more than 12 billion gallons of water annually to produce products valued at $58 billion.

- Small and independent craft brewers contributed $33.9 billion to the U.S. Economy in 2012. The industry also provided more than 360,000 jobs. *(Analysis includes state-by state breakdown: http://www.brewersassociation.org/pages/government-affairs/economic-impact-data)*

- Farmers depend on clean water for irrigation – 31% of all surface water withdrawals in the U.S. are for irrigation.

- According to EPA, the proposed rule would provide an estimated $388 million to $514 million annually of benefits to the public, including reducing flooding, filtering pollution, providing wildlife habitat, supporting hunting and fishing, and recharging groundwater. The public health benefits significantly outweigh the costs of about $162 million to $279 million per year for mitigating impacts to streams and wetlands, and taking steps to reduce pollution to waterways.

- In 2011, approximately 38% of the U.S. Population over the age of 16 – 90.1 million people participated in wildlife recreation, spending $145 billion. State-by-state numbers also available: http://www.census.gov/prod/www/fishing.html

- The American Sportfishing Association reports that anglers generated nearly $115 billion in total economic activity in 2011 and supported more than 800,000 jobs.

- Protecting streams and wetlands protects homes and businesses from flooding. Degradation of these resources can increase flood damages and emergency response costs. Across the country, 9.6 million homes and $390 billion in property are located in flood-prone areas. Protecting the streams and wetlands that store flood water and reduce runoff is an effective "insurance policy."

- Businesses operate best in an environment of regulatory certainty, and this rule may reduce cost for businesses needing Clean Water Act permits and will most assuredly increase consistency, predictability, and timeliness of the permitting process.

Resolution 15-07
Support of Revised Clean Water Act Definition

October 15, 2014

FOR THE PURPOSE OF RESOLVING TO SUPPORT THE ENVIRONMENTAL PROTECTION AGENCY AND ARMY CORPS OF ENGINEERS' PROPOSED DEFINITION ON "WATERS OF THE UNITED STATES" UNDER THE CLEAN WATER ACT.

WHEREAS, the Clean Water Act is the fundamental federal law protecting the Waters of the United States from pollution, degradation and destruction and strong federal standards are needed because water does not respect political boundaries; and

WHEREAS, critical streams and wetlands which supply drinking water, protect against floods and filter pollution previously were protected under the Clean Water Act, but federal policy changes over the last decade have left these streams and wetlands vulnerable to degradation or destruction; and

WHEREAS, these vulnerable waters of the United States impact sources of drinking water for over 117 million Americans, including 5,928,814 residents in Maryland; and

WHEREAS, more than 1,000 peer reviewed scientific studies have confirmed that headwater intermittent and ephemeral streams and wetlands affect the quantity and quality of water in larger bodies of water downstream; and

WHEREAS, the U.S. Environmental Protection Agency and Army Corps of Engineers have proposed a clarifying rulemaking that all tributary streams, regardless of size or frequency of flow are covered under the Clean Water Act and according to Clean Water Action will restore protections to 2210 miles of streams in Maryland that 77% of our residents depend on for drinking water.

NOW, THEREFORE, BE IT HEREBY RESOLVED, by the City Council of New Carrollton, Maryland that the Mayor of the City of New Carrollton be, and is specifically, authorized to support the proposed Definition of "Waters of the United States" under the Clean Water Act and urges the Environmental Protection Agency and Army Corps of Engineers to finalize these important protections for our nation's water resources.

ADOPTED AND ENACTED BY THE CITY COUNCIL OF THE CITY OF NEW CARROLLTON, MARYLAND THIS 15TH DAY OF OCTOBER, 2014.

SIGNED:

Katrina R. Dodro

Katrina R. Dodro
Chair
City Council

ATTEST:

Douglass A. Barber

Douglass A. Barber, CMC
City Clerk

APPROVED:

Andrew C. Hanko

Andrew C. Hanko
Mayor

THE TOWN OF FOREST HEIGHTS
RESOLUTION 67-14

A RESOLUTION SUPPORTING THE ENVIRONMENTAL PROTECTION AGENCY AND ARMY CORPS OF ENGINEERS' PROPOSED *DEFINITION ON "WATERS OF THE UNITED STATES"* UNDER THE CLEAN WATER ACT

Introduced By:

WHEREAS, The Mayor and Council recognize the Clean Water Act is the fundamental federal law protecting the Waters of the United States from pollution, degradation and destruction and strong federal standards are needed because water does not respect political boundaries; and

WHEREAS, critical streams and wetlands which supply drinking water, protect against floods and filter pollution previously were protected under the Clean Water Act, but federal policy changes over the last decade have left these streams and wetlands vulnerable to degradation or destruction; and

WHEREAS, these vulnerable waters of the United States impact sources of drinking water for over 117 million Americans, including 5,885,000 residents in Maryland; and

WHEREAS, more than 1,000 peer reviewed scientific studies have confirmed that headwater intermittent and ephemeral streams and wetlands affect the quantity and quality of water in larger bodies of water downstream; and

WHEREAS, the U.S. Environmental Protection Agency and Army Corps of Engineers have proposed a clarifying rulemaking that all tributary streams, regardless of size or frequency of flow are covered under the Clean Water Act and according to Clean Water Action will restore protections to 2210 miles of streams in Maryland that 77% of our residents depend on for drinking water.

NOW, THEREFORE, BE IT FURTHER RESOLVED that the Mayor and Town Council hereby support proposed *Definition of "Waters of the United States"* under the Clean Water Act and urges the Environmental Protection Agency and Army Corps of Engineers to finalize these important protections for our nation's water resources.

APPROVED: By Resolution of the Town Council of The Town of Forest Heights, Maryland

ROLL CALL VOTE	YEA/NAY/ABSTAIN/ABSENT
GOODALL	YEA
KENNEDY II	YEA
STONER	YEA
BARNES	YEA

THE TOWN OF FOREST HEIGHTS
RESOLUTION 67-14

MANN	YEA
SMITH-BARNES	YEA
MUHAMMAD	YEA

I HEREBY CERTIFY that the above Resolution No. 67-14 was passed by the required yea and nay votes of the Mayor and Council of the Town of Forest Heights on the 3rd day of November 2014.

ATTEST:

SIGNATURE ON FILE

Bonita Anderson, Town Clerk

THE MAYOR AND COUNCIL OF THE TOWN OF FOREST HEIGHTS

SIGNATURE ON FILE

By:
Jacqueline Goodall, Mayor

SIGNATURE ON FILE

By:
Cynthia Mann, Council President

DOCUMENTS SUBMITTED BY REPRESENTATIVE BROOKS

OFFICE OF THE GOVERNOR

ROBERT BENTLEY
GOVERNOR

STATE CAPITOL
MONTGOMERY, ALABAMA 36130

(334) 242-7100
FAX: (334) 242-3282

STATE OF ALABAMA

February 24, 2015

The Honorable Gina McCarthy
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

RE: Attention - Docket ID No. EPA-HQ-OAR-2008-0699

Dear Administrator McCarthy:

I write to express my deep concerns regarding the proposal by the United States Environmental Protection Agency (EPA) to change the National Ambient Air Quality Standard (NAAQS) for ground-level ozone. I understand that the proposal requests comments on reducing the current standard to within the range of 70 parts per billion (ppb) to 60 ppb, but I believe the estimated effects on the State of Alabama from any change in the ozone NAAQS far outweigh the suggested benefits.

Reduced standards would drastically impact my state. In Alabama, the only county in non-attainment under the current standard just recently reached attainment through hard work and dedication. A further reduction could not only place this county back in non-attainment but also dramatically increase the number of counties designated as such, up to over three-fourths of the state. Specifically, according to data from Alabama's Department of Environmental Management, a 70 ppb standard will likely result in a non-attainment designation for one monitored counties. With a 65 ppb standard, three monitored counties will be designated non-attainment. Under a 60 ppb standard, twelve of thirteen monitored counties will be designated non-attainment. Additionally, this data does not reflect the unmonitored counties that would be designated non-attainment. It is possible that over three-fourths of the state could be designated non-attainment with a 60 ppb standard. For Alabama, this is unacceptable. Our economy simply cannot continue to improve under these unnecessary, federally-mandated restrictions on existing businesses and economic development. Restrictions on the industrial sector in non-attainment areas would severely impede this state's economic progress. In addition, the cost of

implementation may very well reach every Alabama citizen through increased energy costs.

The proposed change is premature and needs further study. To the extent the current standard has only been implemented for a few years, businesses have operated under and made plans based on the current standard for too short of a period. Indeed, the implementing regulations for the current standard have not been released to the states to allow submittal of State Implementation Plans (SIPs). Further study is needed to determine the actual benefits of a lower ozone NAAQS. If the current standard has only recently been attained, it is difficult to understand how sufficient data could have been collected, let alone analyzed to show the health impacts of the recently attained levels. Without knowing the impacts of the current standard, I do not understand the reason for additional reductions. Further, if, as the EPA reportedly admits, other environmental regulations will lower ozone emissions, a different ozone standard is unnecessary and will simply harm the economy through non-attainment designations without providing additional benefits.

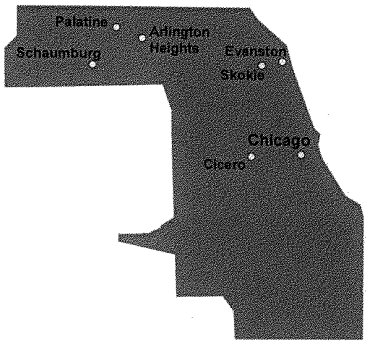
I support and encourage environmental and public welfare protections but cannot support regulations that are more harmful than beneficial. I request that the current standard remain.

Sincerely,

Robert Bentley
Governor

At 80 ppb, **Cook County** would need to reduce its ozone levels substantially to comply; its service-driven economy will be challenged to find low-cost reduction opportunities.

County Map



Summary Statistics

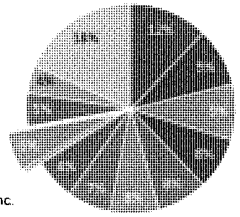
Population (2014) [1]	5,246,456
Households (2009-2013[2]	1,933,335
Total Employment (2013)[3]	3,332,105
Manufacturing Employment (2013)[3]	197,530
Unemployment Rate (2014)[4]	7.4%
Employee Compensation (2014$)[5]	$199.3 Bn
GDP estimate (2014$)[6]	$336.6 Bn
Median Household Income (2014$)[7]	$56,664
Poverty Rate[8]	17.8%
2011-2013 Average Ozone[9]	80

Employment Highlights

Top 15 Employers

- The U.S. Government
- Chicago Public Schools
- City of Chicago
- Cook County
- UPS
- Advocate Health Care
- SBC Communications
- Walmart
- J.P. Morgan Chase & Co.
- University of Chicago
- State of Illinois
- AT&T
- United Continental Holdings, Inc.
- Walgreens
- Abbott

Employment by Sector

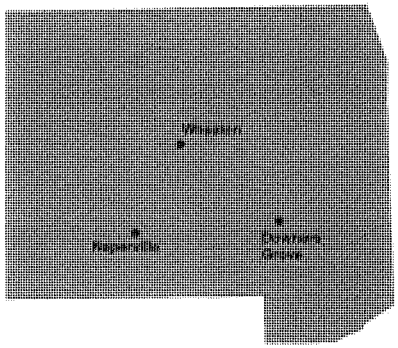


Industries Challenged

- **Transport Infrastructure:** The Chicago area is the largest rail hub in the country; freight traffic is expected to increase by 80% by 2020.
- **Manufacturing:** Average estimated annual compensation per employee in 2014 was $77,600.
- **Power Generation:** Six fossil plants totaling 955 MW represent 92% of the county's generating capacity – Calumet, Fisk Street, Ingredion Illinois, Southeast Chicago Energy Project, University of Illinois Cogen Facility, and Winnetka.

DuPage County also has a service driven economy and will be challenged to find low-cost emission reductions.

County Map



Summary Statistics

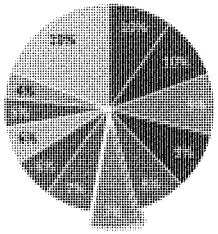
Population (2014) [1]	932,708
Households (2009-2013[2]	336,028
Total Employment (2013)[3]	742,072
Manufacturing Employment (2013)[3]	54,716
Unemployment Rate (2014)[4]	7.4%
Employee Compensation (2014$)[5]	$47.5 Bn
GDP estimate (2014$)[6]	$89.5 Bn
Median Household Income (2014$)[7]	$81,532
Poverty Rate[8]	7.0%
2011-2013 Average Ozone[9]	68

Employment Highlights

Top 15 Employers

- Dover Corporation
- Arthur J. Gallagher & Co.
- DeVry Education Group
- AAR Corp.
- Treehouse Foods, Inc.
- Federal Signal Corp.
- Molex Incorporated
- Navistar International Corporation
- HUB Group, Inc.
- Fellowes Incorporated
- First Midwest Bancorp
- A.M. Castle & Co.
- Alcatel-Lucent
- Great Lakes Dredge and Dock
- Suncoke Energy, Inc.

Employment by Sector

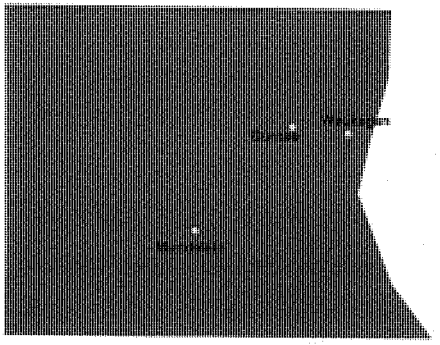


Industries Challenged

- **Manufacturing:** largest manufacturing sub-sectors include fabricated metals, food, machinery, computer & electronics, electrical equipment & appliance, and chemicals. Average estimated annual compensation per employee in 2014 was $87,300.
- **Power Generation:** The Aurora power plant is an 832 MW natural-gas fired generating facility that represents 95% of the county's generating capacity. Additional NOx controls for Aurora would be costly and relatively ineffective as the plant is used for peaking purposes.

Lake County is at economic risk as manufacturing is the largest employment sector with average annual compensation of $126,850 per employee.

County Map



Summary Statistics

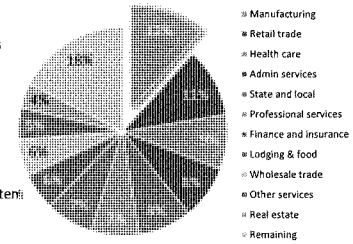
Population (2014) [1]	705,186
Households (2009-2013[2]	241,072
Total Employment (2013)[3]	446,048
Manufacturing Employment (2013)[3]	51,753
Unemployment Rate (2014)[4]	6.5%
Employee Compensation (2014$)[5]	$30.6 Bn
GDP estimate (2014$)[6]	$45.2 Bn
Median Household Income (2014$)[7]	$80,475
Poverty Rate[8]	9.5%
2011-2013 Average Ozone[9]	80

Employment Highlights

Top 15 Employers

- Abbott Laboratories and Affiliates
- Walgreens and Affiliates
- W. W. Grainger and Affiliates
- Baxter International and Affiliates
- Medline
- Advocate Condell
- Baxter Healthcare Corp.
- CDW
- Northwest Lake Forest Hospital
- Highland Park Hospital
- Lovell Federal Health Care Center
- NorthShore University Health System
- Eastek International
- Takeda
- Vista Health System

Employment by Sector

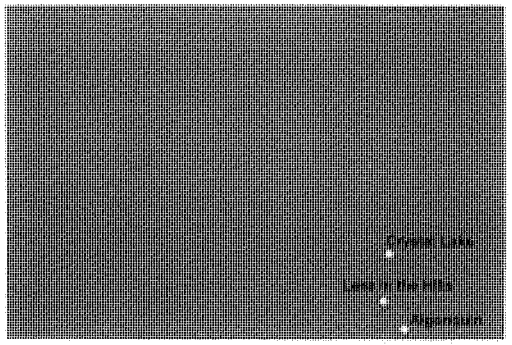


Industries Challenged

- **Manufacturing:**
  - Largest sub-sectors include chemicals, plastic & rubber products, fabricated metal product, and computer & electronics manufacturing.
  - Average estimated annual compensation per employee in 2014 was $126,850.
- **Power Generation:** Three fossil plants – North Chicago Energy Center, Waukegan, and Zion Energy Center – total 1,265 MW and represent 99% of the county's generating capacity.

Mc Henry County faces significant economic risk as manufacturing is the largest sector at 13% of total employment and 20% of total employment compensation.

County Map



Summary Statistics

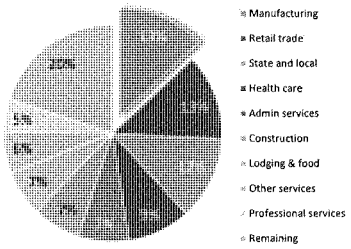
Population (2014) [1]	307,283
Households (2009-2013[2]	108,852
Total Employment (2013)[3]	122,981
Manufacturing Employment (2013)[3]	15,659
Unemployment Rate (2014)[4]	6.4%
Employee Compensation (2014$)[5]	$5.6 Bn
GDP estimate (2014$)[6]	$19.7 Bn
Median Household Income (2014$)[7]	$79,099
Poverty Rate[8]	7.1%
2011-2013 Average Ozone[9]	71

Employment Highlights

Top 15 Employers

- Centegra Health System
- Walmart
- Jewel-Osco
- McHenry County
- Follett Library Resources, Inc.
- McHenry County College
- Catalent Pharma Solutions
- Mercy Health System
- Brown Printing
- Snap-On, Inc.
- Medela, Inc.
- Intren, Inc.
- Sage Products, Inc.
- Aptargroup, Inc
- Covidien

Employment by Sector

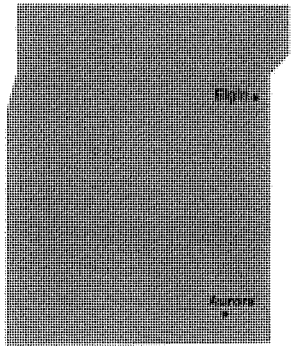


Industries Challenged

- **Manufacturing:**
  - Largest sub-sectors include fabricated metals, plastics & rubber products, and printing.
  - 20% of total employment compensation in the county.
  - Average estimated annual compensation per employee for the entire sector was $69,000 in 2014.

Kane County's economy would be at risk with manufacturing representing the largest employment sector and 94% of its power generating capacity relying on fossil fuels.

County Map



Summary Statistics

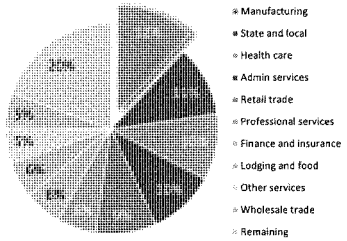
Population (2014) [1]	527,306
Households (2009-2013[2]	170,358
Total Employment (2013)[3]	270,028
Manufacturing Employment (2013)[3]	32,037
Unemployment Rate (2014)[4]	7.0%
Employee Compensation (2014$)[5]	$12.6 Bn
GDP estimate (2014$)[6]	$33.8 Bn
Median Household Income (2014$)[7]	$72,228
Poverty Rate[8]	10.9%
2011-2013 Average Ozone[9]	69

Economic Highlights

Top 15 Employers

- Universities Res Association, Inc
- Illinois Dept. of Human Resources
- Bank One National Association
- Delnor Community Hospital
- Dryer Cancer Center
- Grand Victoria Casino
- Hollywood Casino – Aurora, Inc
- Delnor Community Health Systems
- Provena Hospitals
- Dreyer Clinic, Inc.
- Dukane Corporation
- Kane County
- Provena Health
- SKF USA, Inc
- US Can Corporation

Employment by Sector

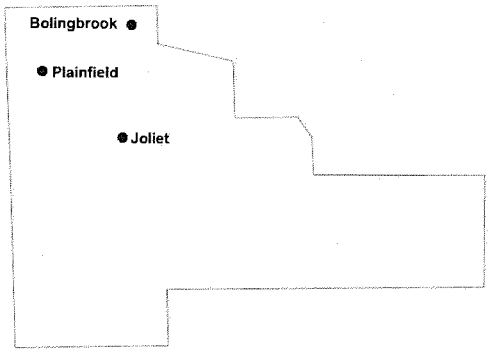


Industries Challenged

- **Manufacturing:**
  - Largest sub-sectors include chemicals, computer & electronics, electrical equipment & appliance, fabricated metals, food, and machinery.
  - Average estimated annual compensation per employee in 2014 was $69,200.
- **Power Generation:** The Elgin Energy Center and the Rocky Road Power facilities constitute 787 MW of gas-fired capacity and represents 94% of the county's generating capacity.

Will County has more fossil power generating and refining capacity than any of the other five collar counties, yet has the lowest average ozone level.

County Map



Summary Statistics

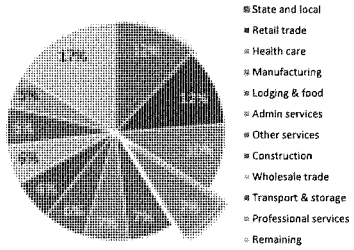
Population (2014) [1]	685,419
Households (2009-2013[2]	222,652
Total Employment (2013)[3]	277,541
Manufacturing Employment (2013)[3]	20,574
Unemployment Rate (2014)[4]	7.4%
Employee Compensation (2014$)[5]	$13.4 Bn
GDP estimate (2014$)[6]	$44 Bn
Median Household Income (2014$)[7]	$79,102
Poverty Rate[8]	8.5%
2011-2013 Average Ozone[9]	64

Employment Highlights

Top 15 Employers

- Presence St. Joseph Medical Center
- Silver Cross Hospital
- Will County Government
- Walmart Supercenter
- Valley View School District
- Peacock Engineering
- Trinity Services
- Harrah's Casino Joliet
- WeatherTech
- Promenade Bolingbrook
- NRG Energy
- Corrections Dept.
- Southern Wine & Spirits of Illinois
- Stateville Correctional Center
- Exelon Braidwood Gen. Station

Employment by Sector



Industries Challenged

- **Manufacturing (non-refining):** approximately 19,200 high-paying jobs averaging $80,640 annually.
- **Refining:** Two refineries – ExxonMobil Joliet and PDV Midwest Refining – represent ~415,000 barrels per day in capacity and employ more than 1400 employees in high-paying jobs averaging almost $100,000 a year.
- **Power Generation:** Six fossil plants totaling 5,188 MW represent 68% of the county's generating capacity – Crete Energy Venture, Elwood Energy, Joliet, Lincoln Generating Facility, University Park North, and University Park South.

End Notes

[1] U.S. Census Population estimates, July 1, 2014, accessed at http://www.census.gov/quickfacts/

[2] U.S. Census Household 5-Year estimates 2009 - 2013, American Community Survey, accessed at http://www.census.gov/quickfacts/

[3] BEA 2013 Employment estimates, accessed at http://bea.gov/index.htm.

[4] U.S. Department of Labor, Bureau of Labor Statistics, 2014 unemployment rate, accessed at http://data.bls.gov/map/

[5] U. S. Bureau of Economic Analysis 2013 Compensation of Employees by NAICS Industry adjusted to 2014 dollars, accessed at http://bea.gov/itable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1

[6] BEA 2013 GDP by State and MSA adjusted to 2014 dollars; U. S. Bureau of Economic Analysis 2013 Compensation of Employees by NAICS Industry adjusted to 2014 dollars and applied a GDP multiiplier, accessed at http://bea.gov/itable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1

[7] U.S. Census Median Household Income estimates 2009-2013 in adjusted to 2014 dollars, accessed at http://www.census.gov/quickfacts/

[8] U.S. Census Persons in poverty, percent, accessed at http://www.census.gov/quickfacts/

[9] U.S. EPA Counties Violating the Primary Ground-level Ozone Standard, accessed at http://www.epa.gov/groundlevelozone/pdfs/20141126-20112013datatable.pdf

DOCUMENTS SUBMITTED BY REPRESENTATIVE HULTGREN

03/14/2014 09:43 3097936305 BI-STATE REGIONAL CO OAR-2008-0699 PAGE 01/03

Bi-State
Regional Commission
Serving local governments in Muscatine and Scott Counties, Iowa; Henry, Mercer and Rock Island Counties, Illinois.

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VICE-CHAIR
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Jason Gordon, Alderman
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City of Muscatine
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City of Kewanee
Bruce Tonsell, Mayor
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Ken Williams, Mayor, Carbon Cliff
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Jim Crouch, Mayor, Cambridge
Cities of Blue Grass, Buffalo, Eldridge, Fruitland, LeClaire, Long Grove, McCausland, Princeton, Riverdale, Walcott, West Liberty, and Wilton
Marty O'Boyle, Mayor, Eldridge
COUNTY REPRESENTATIVES:
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Dennis Anderson, Member
JoAnne Hillman, Member
Mercer County
Vacant
Muscatine County
Robert Howard, Chair
Tom Furlong, Member
Rock Island County
Phillip Banaszek, Chair
Kim Calloway-Thompson, Member
Vacant, Member
Elizabeth Sherwin, Citizen
Scott County
Larry Minard, Chair
Carol Earnhardt, Member
Tom Sunderbruch, Member
Jasmin Newton-Butt, Citizen
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March 14, 2014

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Air Docket
Attention Docket ID No. EPA-HQ-OAR-2008-0699
Environmental Protection Agency
Mail Code: 6102T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

As a coalition of local government representatives committed to clean air and the protection of the health of our citizens, we appreciate the opportunity to comment on the proposed reduction of the 2008 National Ambient Air Quality Standard. Following are our shared comments to Docket ID No. EPA-HQ-OAR-2008-0699.

The coalition has been tracking ozone levels in Muscatine and Scott Counties, Iowa and Rock Island County, Illinois, through our respective state agencies and we have been very active in establishing programs to reduce ozone levels in the Bi-State Region. In fact, we launched an area-wide pledge program to commit to projects and activities that improve air quality in 2010. The Bi-State Region supports an ozone standard that protects human health and the environment.

The Environmental Protection Agency ("EPA") is undertaking a reconsideration of the 2008 National Ambient Air Quality Standard ("NAAQS") for ozone in the range of 0.070 to 0.060 parts per million ("ppm"). EPA's proposed range would result in a large portion of the U.S. classified as nonattainment. Lowering the 0.075 ppm standard to the lower end of the proposed range of 0.060 ppm would result in almost tripling the number of counties being designated in non-attainment in the United States. The National Association of Counties (NACO) has determined that 96 and 76 percent of current monitors would fail at the 0.060 and 0.070 ppm standards, respectively (compared to 48 percent at the 0.075 ppm standard). All monitored areas in Iowa and Illinois would be classified as non-attainment if the 0.060 ppm standard were adopted. All but six of the 51 monitors in Iowa and Illinois would be in non-attainment at a standard of 0.065 ppm.

Further, very few of the total U.S. counties are monitored. Only areas without monitors, smaller urban and rural areas, would be able to attract businesses and industries. This outflow of industry from large and midsized urban areas would be counter to smart growth and sustainability implementation strategies. The existence of monitors themselves should not create a system of advantaged and disadvantaged communities, counties and states. The change in the threshold would impose new and more costly standards on local businesses at a time of recession and historic unemployment nationwide.

POSTMARKED
MAR 14 2014
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1504 Third Avenue, P.O. Box 3368, Rock Island, Illinois 61[illegible]
Phone (309) 793-6300, Fax (309) 793-6305
E-mail: info@bistateonline.org • Website: www.bistateonline.org

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Air emission reductions are already occurring without a new standard and the 2008 ozone standard programs for ozone reduction have yet to be fully implemented. EPA designed national programs that, when fully implemented, will achieve significant reductions in air emissions through cleaner fuels and vehicles. In the U.S., significant progress has been made in reducing ozone levels and improving air quality in general. Between 1980 and 2012, total emissions in tons of the six principal air pollutants dropped by over 65 percent and measured ambient concentrations of ozone dropped 25% since 1980 (see http://www.epa.gov/airtrends/aqtrends.html).

In addition, EPA's Clean Air Scientific Advisory Committee recognized that a new tighter standard poses issues for attainability. The proposed lower standards come close to background ozone levels, and natural precursors may prevent attainment. Availability of technology to meet the new standard has also been questioned. EPA's Regulatory Impact Analysis found only a small portion of the costs of attainment are associated with known controls and "the rest of the controls would be associated with "other, currently unknown technologies.""

We believe there should be further evaluation of biogenic sources of ozone and its precursors to determine the impact of plant growth and crop seasons on ozone levels. Agricultural fields in very rural areas are reading in non-attainment. Since we in the Midwest are seen as the one of the world's greatest sources of food, the very nature of our important agricultural role may contribute to background ozone levels to a degree in which our region and our states cannot remain in attainment and produce these essential foodstuffs.

We request the ozone NAAQS be lowered no more than 70 ppm to allow programs established under the prior standard time to work. In addition, the policies, procedures and rules should be reviewed and adjusted to reflect current knowledge and implementation realities. Finally, biogenic sources of ozone should be studied to understand background ozone levels in agricultural areas.

The Bi-State Region will continue to educate the public and encourage voluntary measures of local governments, businesses and individuals to improve air quality, similar to efforts that have been established over the past 10 years for ozone through the Quad City Air Quality Task Force. Activities have included: "Aware of air" brochure development and dissemination, alternative fuels workshop, teacher training workshop, travel demand management information, newspaper advertisements, the development of a voluntary ozone flex plan, CNG buses and biodiesel buses; trip chaining television advertisements; public and private employer outreach projects and meetings; truck engine idling proposals to USEPA; QC Transit web portal development; transit marketing and ambassador program and fair, a "Make Indoor Air Quality Visible" campaign, and the Alcoa "Make an Impact" campaign. An area-wide pledge program to commit to projects and activities that improve air quality was launched in 2010. This issue is of the utmost importance to Muscatine and Scott Counties, Iowa and Rock

Island County, Illinois. The area has been taking steps since 1998 to improve air quality and there is a high level of regional commitment.

This issue is of the utmost importance to Muscatine and Scott Counties, Iowa and Rock Island County, Illinois. Thank you for the opportunity to provide these comments.

Sincerely,

Bob Gallagher
Mayor, City of Bettendorf

William Gluba
Mayor, City of Davenport

John Thodos
Mayor, City of East Moline

Scott Raes
Mayor, City of Moline

DeWayne Hopkins
Mayor, City of Muscatine

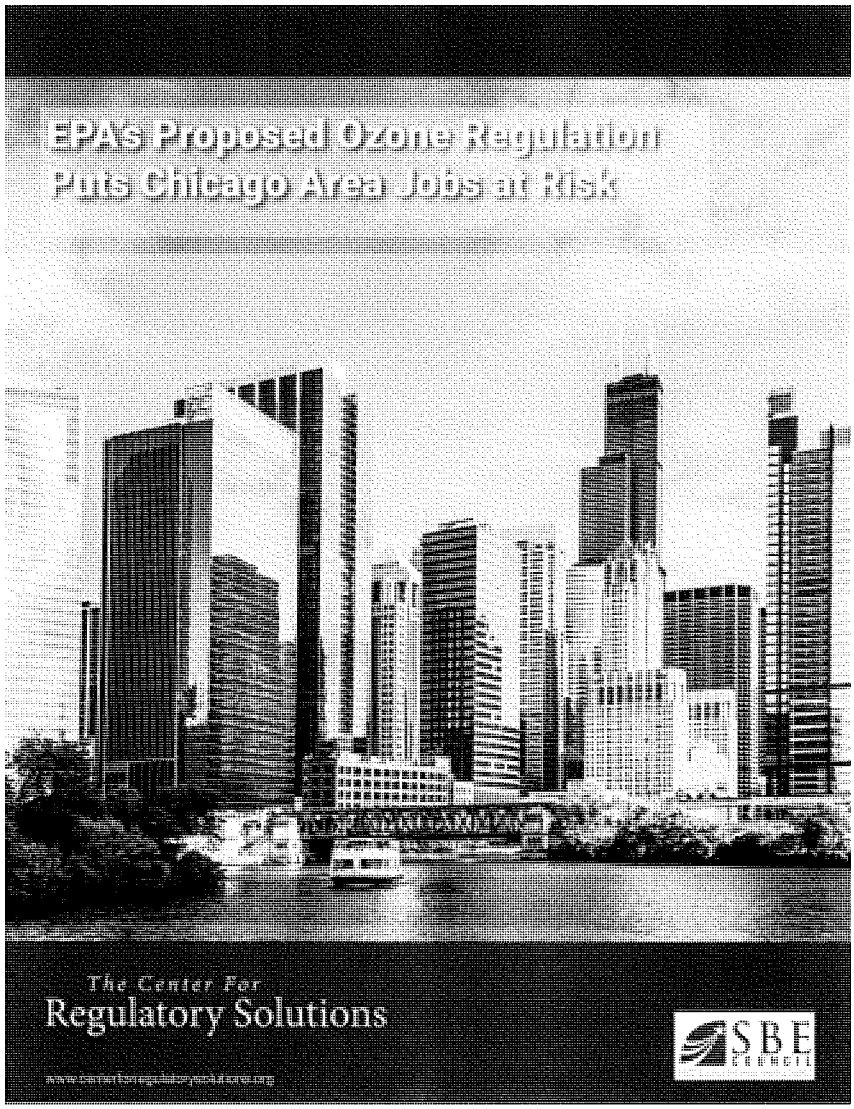
Dennis Pauley
Mayor, City of Rock Island

Larry Minard
Chair, Scott County Board

Phil Banaszek
Chair, Rock Island County Board

DB/rv
environ\Air Quality\Ltr\Ozone Ltr Final 2014

cc: Senator Richard Durbin, Senator Charles Grassley, Senator Tom Harkin, Senator Mark Kirk, Representative David Loebsack, Representative Cheri Bustos


EPA's Proposed Ozone Regulation
Puts Chicago Area Jobs at Risk
The Center For
Regulatory Solutions
SBE
COUNCIL

Executive Summary

A new economic analysis conducted by the Center for Regulatory Solutions found that the U.S. Environmental Protection Agency's (EPA) proposed new regulation to tighten ozone standards could hamstring economic growth in areas of Illinois that support 80 percent of the state's jobs.

The report details how the EPA's ozone rule, which would be the most expensive regulation in history, could cause significant economic harm in Illinois – triggering substantial job cuts, reduced business spending, and economic uncertainty as manufacturing companies scramble to comply.

According to EPA data, 21 counties in Illinois would be out of compliance or in "non-attainment" if EPA lowers ground level ozone standards from 75 parts per billion (ppb) to 65 ppb. These 21 counties represent 79 percent, or $613.4 billion, of the state's gross domestic product (GDP) and 80 percent of its jobs. Costs to comply with this rule and retrofit plants and equipment in order to drastically cut ozone emissions to this level could measure into the billions of dollars.

Specifically, the six counties surrounding Chicago – Cook, DuPage, Kane, Lake, McHenry and Will – would be ground zero for the most onerous reduction obligations. These six counties are home to 65 percent of the state's population, 73 percent of the state's GDP and almost 70 percent of the state's employment. At 65 ppb, five of the six counties would be in non-attainment, which significantly encumbers 65 percent of the state's jobs.

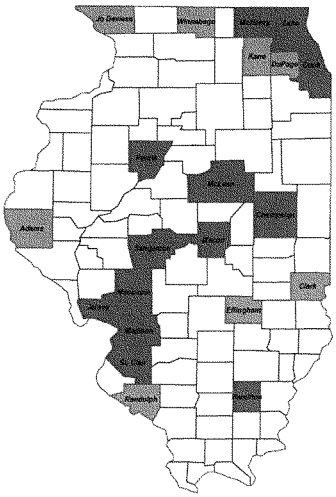
The EPA ozone rule presents potential economic hardships for the diverse county economies surrounding Chicago. Service-driven counties like Cook County and DuPage County will struggle to find ways to reduce their emissions, and manufacturing-intensive counties like Lake County, McHenry County, and Kane County will be in jeopardy of losing high paying manufacturing jobs due to expensive "known and unknown" compliance costs. For example:

- In Lake County, the manufacturing sector is the largest employer and provides an average annual compensation of $126,850 per employee. These good-paying jobs could be on the chopping block if the EPA rule is implemented.
- In Kane County, 94 percent of its power generating capacity comes from fossil fuels. The EPA's rule would force families and small businesses to pay higher energy costs.

Several of these counties already face double-digit poverty rates and can ill-afford the job cuts, energy price spikes, and uncertainty that will result from the EPA's rule. Furthermore, both Moody's and Fitch Investors Service consider Illinois the most financially troubled state in the country. The rule would be an extra hit to an already fragile state economy. Today, even before these rules are put into effect, Illinois had the Midwest's worst job creation rate in 2014, leading to twenty-two percent of households in the state to be dependent on food stamps, more than 2 million Illinoisans. In fact, new food stamp enrollees outnumbered new jobs by a 2-1 margin in 2014. Accordingly, an increasingly viable option for people who are willing and able to work is to simply leave the state, which significantly decreases the tax base. In 2014, Illinois lost 95,000 people.

Simply put, EPA's proposed ozone regulation would impose a severe penalty on manufacturers in the state, which would in turn hobble an already fragile state economy, making it harder for Illinois residents to find quality job opportunities and for those living in poverty to climb out of it.

According to EPA data, 21 counties in Illinois would be in non-attainment if EPA lowers Ozone NAAQS to 65ppb. Together, these counties represent 79% of the state's GDP.



Counties that violate 65 ppb
Counties that violate 70 ppb
Counties that do not violate proposed range

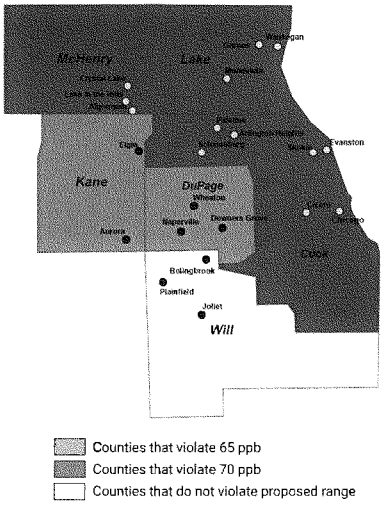
The 21 counties represent the following:

- $613.4 billion or 79% of the state's GDP
- 6.0 million or 80% of the state's employment
- $347.9 billion or 85% of total employment compensation in the state
- Approximately 75% of the state's population

Non-Attainment Counties*	2014 GDP Estimate (Bn $)	2013 Employment Estimate
Adams	3.4	43,166
Champaign	9.3	124,403
Clark	0.4	7,670
Cook	336.6	3,332,105
Du Page	89.5	742,072
Effingham	1.9	26,060
Hamilton	0.2	3,600
Jersey	0.4	8,130
Jo Daviess	0.7	12,536
Kane	33.8	270,028
Lake	45.2	446,048
Macon	6	63,262
Macoupin	1	16,057
Madison	10.6	127,105
McHenry	19.7	122,981
Mclean	10.7	111,669
Peoria	10.4	124,483
Randolph	1.1	14,696
Sangamon	9.2	122,964
St Clair	11.4	127,215
Winnebago	11.9	160,258
Total	**613.4**	**6,006,508**
Illinois	**774.8**	**7,507,203**

* Based on EPA analysis of 2011-2013 ozone data, accessed at http://www.epa.gov/groundlevelozone/pdfs/20141126-20112013datatable.pdf

The six Chicago collar counties – Cook, DuPage, Kane, Lake, McHenry, and Will represent 73% of the state's GDP. 5 out of the 6 counties would be in non-attainment at 65ppb, imposing a hefty financial burden on Illinois' economic engine.



The 6 counties surrounding Chicago represent the following:

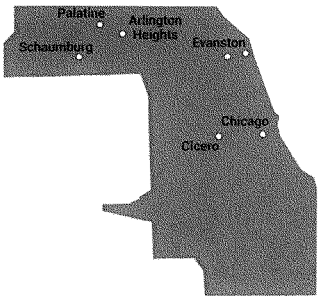
- $568.8 billion or 73% of the state's GDP
- 5.2 million or almost 70% of the state's employment
- $308.9 billion or 75% of total employment compensation in the state
- Approximately 65% of the state's population

Chicago Collar Counties	2014 GDP Estimate (Bn $)	2013 Employment Estimate
Du Page	89.5	742,072
Kane	33.8	270,028
Lake	45.2	446,048
McHenry	19.7	122,981
Will*	44	277,541
Total	**568.8**	**5,190,775**
Illinois	**774.8**	**7,507,203**

* Will County would be near nonattainment at 64 ppb based on its 2011 to 2013 average.

Currently with ozone levels of 80 ppb, Cook County would need to reduce its ozone levels substantially to comply; its service-driven economy will be challenged to find low-cost reduction opportunities.

County Map



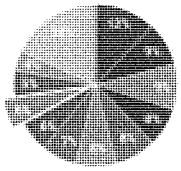
Summary Statistics

Population (2014)[1]	5,246,456
Households (2009-2013)[2]	1,933,335
Total Employment (2013)[3]	3,332,105
Manufacturing Employment (2013)[3]	197,530
Unemployment Rate (2014)[4]	7.40%
Employee Compensation (2014$)[5]	$199.3 Bn
GDP estimate (2014$)[6]	$336.6 Bn
Median Household Income (2014$)[7]	$56,664
Poverty Rate[8]	17.80%
2011-2013 Average Ozone[9]	80

Employment Highlights

Top 15 Employers
- The U.S. Government
- Chicago Public Schools
- City of Chicago
- Cook County
- UPS
- Advocate Health Care
- SBC Communications
- Walmart
- J.P. Morgan Chase & Co.
- University of Chicago
- State of Illinois
- AT&T
- United Continental Holdings, Inc.
- Walgreens
- Abbott

Employment by Sector



Health care
Professional services
State and local
Retail trade
Admin. services
Finance and insurance
Lodging and food
Other services
Manufacturing
Transport and storage
Real estate
Remaining

Industries Challenged

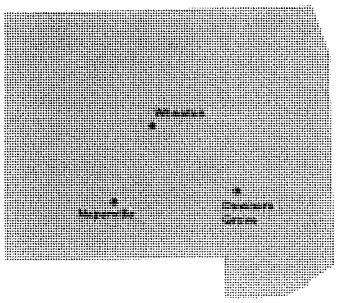
Transport Infrastructure: The Chicago area is the largest rail hub in the country; freight traffic is expected to increase by 80% by 2020.

Manufacturing: Average estimated annual compensation per employee in 2014 was $77,600.

Power Generation: Six fossil plants totaling 955 MW represent 92% of the county's generating capacity – Calumet, Fisk Street, Ingredion Illinois, Southeast Chicago Energy Project, University of Illinois Cogen Facility, and Winnetka

DuPage County also has a service driven economy and will be challenged to find low-cost emission reductions.

County Map



Summary Statistics

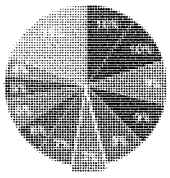
Population (2014)[1]	932,708
Households (2009-2013)[2]	336,028
Total Employment (2013)[3]	742,072
Manufacturing Employment (2013)[3]	54,716
Unemployment Rate (2014)[4]	7.40%
Employee Compensation (2014$)[5]	$47.5 Bn
GDP estimate (2014$)[6]	$89.5 Bn
Median Household Income (2014$)[7]	$81,532
Poverty Rate[8]	7.0%
2011-2013 Average Ozone[9]	68

Employment Highlights

Top 15 Employers

- Dover Corporation
- Arthur J. Gallagher & Co.
- DeVry Education Group
- AAR Corp.
- Treehouse Foods, Inc.
- Federal Signal Corp.
- Molex Incorporated
- Navistar International Corporation
- HUB Group, Inc.
- Fellowes Incorporated
- First Midwest Bancorp
- A.M. Castle & Co.
- Alcatel-Lucent
- Great Lakes Dredge and Dock
- Suncoke Energy, Inc

Employment by Sector



Industries Challenged

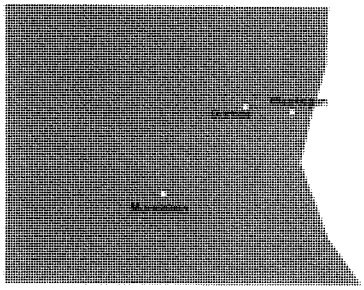
Manufacturing: largest manufacturing sub-sectors include fabricated metals, food, machinery, computer & electronics, electrical equipment & appliance, and chemicals. Average estimated annual compensation per employee in 2014 was $87,300.

Power Generation: The Aurora power plant is an 832 MW natural-gas fired generating facility that represents 95% of the county's generating capacity. Additional NOx controls for Aurora would be costly and relatively ineffective as the plant is used for peaking purposes.

The Center For
Regulatory Solutions
www.centerforregulatorysolutions.org

Lake County is at economic risk as manufacturing is the largest employment sector with average annual compensation of $126,850 per employee.

County Map



Summary Statistics

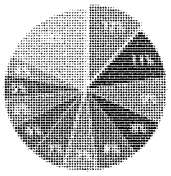
Population (2014)[1]	705,186
Households (2009-2013)[2]	241,072
Total Employment (2013)[3]	446,048
Manufacturing Employment (2013)[3]	51,753
Unemployment Rate (2014)[4]	6.5%
Employee Compensation (2014$)[5]	$30.6 Bn
GDP estimate (2014$)[6]	$45.2 Bn
Median Household Income (2014$)[7]	$80,475
Poverty Rate[8]	9.5%
2011-2013 Average Ozone[9]	80

Employment Highlights

Top 15 Employers

- Abbott Laboratories and Affiliates
- Walgreens and Affiliates
- W. W. Grainger and Affiliates
- Baxter International and Affiliates
- Medline
- Advocate Condell
- Baxter Healthcare Corp.
- CDW
- Northwest Lake Forest Hospital
- Highland Park Hospital
- Lovell Federal Health Care Center
- NorthShore University Health System
- Eastek International
- Takeda
- Vista Health System

Employment by Sector



Industries Challenged

Manufacturing:

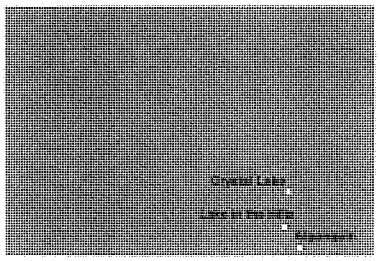
- Largest sub-sectors include chemicals, plastic & rubber products, fabricated metal product, and computer & electronics manufacturing.
- Average estimated annual compensation per employee in 2014 was $126,850.

Power Generation: Three fossil fuel plants – North Chicago Energy Center, Waukegan, and Zion Energy Center – total 1,265 MW and represent 99% of the county's generating capacity.

The Center For
Regulatory Solutions
www.centerforregulatorysolutions.org

Mc Henry County faces significant economic risk as manufacturing is the largest sector at 13% of total employment and 20% of total employment compensation.

County Map



Summary Statistics

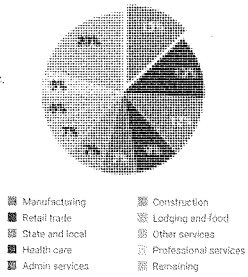
Population (2014)[1]	307,283
Households (2009-2013)[2]	108,852
Total Employment (2013)[3]	122,981
Manufacturing Employment (2013)[3]	15,659
Unemployment Rate (2014)[4]	6.4%
Employee Compensation (2014$)[5]	$5.6 Bn
GDP estimate (2014$)[6]	$19.7Bn
Median Household Income (2014$)[7]	$79,099
Poverty Rate[8]	7.1%
2011-2013 Average Ozone[9]	71

Employment Highlights

Top 15 Employers

- Centegra Health System
- Walmart
- Jewel-Osco
- McHenry County
- Follett Library Resources, Inc.
- McHenry County College
- Catalent Pharma Solutions
- Mercy Health System
- Brown Printing
- Snap-On, Inc.
- Medela, Inc.
- Intren, Inc.
- Sage Products, Inc.
- Aptargroup, Inc
- Covidien

Employment by Sector



Industries Challenged

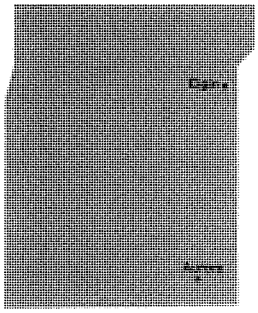
Manufacturing:

- Largest sub-sectors include fabricated metals, plastics & rubber products, and printing.
- 20% of total employment compensation in the county.
- Average estimated annual compensation per employee for the entire sector was $69,000 in 2014.

The Center For
Regulatory Solutions
www.centerforregulatorysolutions.org

Kane County's economy would be at risk with manufacturing representing the largest employment sector and 94% of its power generating capacity relying on fossil fuels.

County Map



Summary Statistics

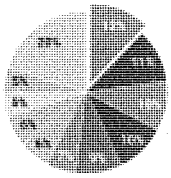
Population (2014)[1]	527,306
Households (2009-2013)[2]	170,358
Total Employment (2013)[3]	270,028
Manufacturing Employment (2013)[3]	32,037
Unemployment Rate (2014)[4]	7.0%
Employee Compensation (2014$)[5]	$12.6 Bn
GDP estimate (2014$)[6]	$33.8 Bn
Median Household Income (2014$)[7]	$72,228
Poverty Rate[8]	10.9%
2011-2013 Average Ozone[9]	69

Employment Highlights

Top 15 Employers

- Universities Res Association, Inc
- Illinois Dept. of Human Resources
- Bank One National Association
- Delnor Community Hospital
- Dryer Cancer Center
- Grand Victoria Casino
- Hollywood Casino – Aurora, Inc
- Delnor Community Health Systems
- Provena Hospitals
- Dreyer Clinic, Inc.
- Dukane Corporation
- Kane County
- Provena Health
- SKF USA, Inc
- US Can Corporation

Employment by Sector



Industries Challenged

Manufacturing:

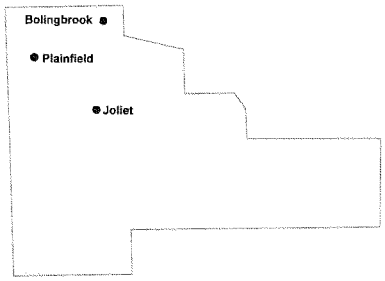
- Largest sub-sectors include chemicals, computer & electronics, electrical equipment & appliance, fabricated metals, food, and machinery.
- Average estimated annual compensation per employee in 2014 was $69,200.

Power Generation: The Elgin Energy Center and the Rocky Road Power facilities constitute 787 MW of gas-fired capacity and represents 94% of the county's generating capacity.

The Center For
Regulatory Solutions
www.centerforregulatorysolutions.org

Will County has more fossil fuel power generating and refining capacity than any of the other five collar counties, yet has the lowest average ozone level.

County Map



Summary Statistics

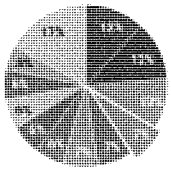
Population (2014)[1]	685,419
Households (2009-2013)[2]	222,652
Total Employment (2013)[3]	277,541
Manufacturing Employment (2013)[2]	20,574
Unemployment Rate (2014)[4]	7.40%
Employee Compensation (2014$)[5]	$13.4 Bn
GDP estimate (2014$)[6]	$44 Bn
Median Household Income (2014$)[7]	$79,102
Poverty Rate[8]	8.5%
2011-2013 Average Ozone[9]	64

Employment Highlights

Top 15 Employers

- Presence St. Joseph Medical Center
- Silver Cross Hospital
- Will County Government
- Walmart Supercenter
- Valley View School District
- Peacock Engineering
- Trinity Services
- Harrah's Casino Joliet
- WeatherTech
- Promenade Bolingbrook
- NRG Energy
- Corrections Dept.
- Southern Wine & Spirits of Illinois
- Stateville Correctional Center
- Exelon Braidwood Gen. Station

Employment by Sector



Industries Challenged

Manufacturing (non-refining): approximately 19,200 high-paying jobs averaging $80,640 annually.

Refining: Two refineries – ExxonMobil Joliet and PDV Midwest Refining – represent ~415,000 barrels per day in capacity and employ more than 1,400 employees in high-paying jobs averaging almost $100,000 a year.

Power Generation: Six fossil plants totaling 5,188 MW represent 68% of the county's generating capacity – Crete Energy Venture, Elwood Energy, Joliet, Lincoln Generating Facility, University Park North, and University Park South.

End Notes

1 U.S. Census Population estimates, July 1, 2014, accessed at http://www.census.gov/quickfacts/

2 U.S. Census Household 5-Year estimates 2009 - 2013, American Community Survey, accessed at http://www.census.gov/quickfacts/

3 BEA 2013 Employment estimates, accessed at http://bea.gov/index.htm.

4 U.S. Department of Labor, Bureau of Labor Statistics, 2014 unemployment rate, accessed at http://data.bls.gov/map/

5 U.S. Bureau of Economic Analysis 2013 Compensation of Employees by NAICS Industry adjusted to 2014 dollars, accessed at http://bea.gov/itable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1

6 BEA 2013 GDP by State and MSA adjusted to 2014 dollars; U. S. Bureau of Economic Analysis 2013 Compensation of Employees by NAICS Industry adjusted to 2014 dollars and applied a GDP multiplier, accessed at http://bea.gov/itable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1

7 U.S. Census Median Household Income estimates 2009-2013 in adjusted to 2014 dollars, accessed at http://www.census.gov/quickfacts/

8 U.S. Census Persons in poverty, percent, accessed at http://www.census.gov/quickfacts/

9 U.S. EPA Counties Violating the Primary Ground-level Ozone Standard, accessed at http://www.epa.gov/groundlevelozone/pdfs/20141126-20112013datatable.pdf

DOCUMENTS SUBMITTED BY REPRESENTATIVE WEBER

RANDY WEBER
MEMBER OF CONGRESS
FOURTEENTH DISTRICT, TEXAS

March 17, 2015

The Honorable Gina McCarthy
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Dear Administrator McCarthy:

I write in strong opposition to the Environmental Protection Agency's (EPA) proposed rule (Docket ID No. EPA-HQ-OAR-2008-0699), which would reduce the current ozone standard to within a range of 65 parts per billion (ppb) to 70 ppb. Your agency is soliciting comments in support of a standard as low as 60 ppb. Such heavy-handed regulations will cripple economic development throughout our nation.

When EPA first proposed and later withdrew an ozone rule in 2011, it was widely considered to be the most expensive regulation in American history. This proposal is not much different. A recent study released by the National Association of Manufacturers revealed that an ozone standard set at 65 ppb could reduce America's Gross Domestic Product by $140 billion per year.[1] Any standard below 75 ppb – the current standard which the EPA only just began implementing – would negatively impact economic growth and job creation at a time when many Americans are still struggling to make ends meet. A standard below 75 ppb will have vast implications for our nation's economy by reducing employment and increasing energy prices. It will make it more difficult for businesses to invest and for states like mine to meet the demands of a growing population.

EPA claims its main justification in support of this lower ozone standard is the health benefits from improved lung functions. However, this conclusion is debatable among the academic and health care communities. According to EPA's own data, ozone levels have fallen by 33 percent since 1980 and by 18 percent since 2000. Yet, despite improvements in air quality, the prevalence of asthma is increasing according to Dr. Paul Garbe, head of the Air Pollution and Respiratory Health Branch at the Center for Disease Control and Prevention.[2] Furthermore, a recent study of asthmatic children published in the Journal of Allergy and Clinical Immunology concluded that "residence in urban areas...was not found to be a significant risk factor for prevalent asthma or asthma morbidity in this US population–based

[1] NERA Economic Consulting. (2015). Economic Impacts of a 65 ppb National Ambient Air Quality Standard for Ozone. Retrieved from http://www.nam.org/Issues/Energy-and-Environment/Ozone/Economic-Impacts-of-a-65-ppb-NAAQS-for-Ozone-(NERA).pdf
[2] Centers for Disease Control and Prevention. (2011). U.S. Asthma Rates Continue to Rise. Retrieved from http://www.cdc.gov/media/releases/2011/p0503_vitalsigns.html

510 CANNON BUILDING
WASHINGTON, DC 20515

505 ORLEANS STREET, SUITE 103
BEAUMONT, TX 77701

122 WEST WAY, SUITE 301
LAKE JACKSON, TX 77566

174 CALDER ROAD, SUITE 150
LEAGUE CITY, TEXAS 77573

analysis."[3] This finding alone puts into doubt whether today's urban ozone levels play a significant role in determining asthma risk. The EPA should not be pursuing economically-damaging regulations, when reputable health studies question its main justifications.

Under your agency's proposal, vast rural areas of the United States with little or no man-made ozone production would now be out of compliance. For example, Yosemite National Park and other parks in the western United States would be in non-compliance of a standard set at 70 ppb, according to publically-available data. Ozone can be naturally-occurring and can originate from high polluting countries like China and Mexico, so many communities will never be able to comply. According to research from the Geophysical Fluid Dynamics Laboratory at Princeton University, pollution from Asia contributes as much as 20 percent to total springtime ozone in the western United States.[4] However, the EPA fails to account for foreign or naturally-occurring ozone when it proposed this new standard, thereby ensuring that the agency will continue to penalize communities for ozone outside their control.

According to the Chairman of the Texas Commission on Environmental Quality, Bryan W. Shaw, Ph.D., P.E, "Environmental regulations should be based on good science, common sense, and the certainty that they will achieve the stated health benefits. The EPA proposal fails miserably at meeting any of those metrics."[5] I wholeheartedly agree, and I urge you to withdraw this economically damaging regulation.

Sincerely,

Randy K. Weber
Member of Congress

---

[3] Keet, Corinne A., Pollack, Craig E., Peng, Roger D., McGowan, Emily, Matsui, Elizabeth C. (2015). Neighborhood poverty, urban residence, race/ethnicity, and asthma: Rethinking the inner-city asthma epidemic. *Journal of Allergy and Clinical Immunology, Volume 135, Issue 3,* 655-662. http://www.jacionline.org/article/S0091-6749(14)01676-5/fulltext

[4] Meiyun Lin, A. M. Fiore, L. W. Horowitz, O. R. Cooper, V. Naik, J. Holloway, B. J. Johnson, A. M. Middlebrook, S. J. Oltmans, I. B. Pollack, T. B. Ryerson, J. X. Warner, C. Wiedinmyer, J. Wilson, B. Wyman. (2012). Transport of Asian ozone pollution into surface air over the western United States in spring. *Journal of Geophysical Research, 117, D00V07.* http://www.gfdl.noaa.gov/news-app/story.53/title.transport-of-asian-ozone-pollution-into-surface-air-over-the-western-united-states-in-spring/

[5] Texas Commission on Environmental Quality. (2014). TCEQ Opposes New EPA Ozone Standards Proposal. Retrieved from: https://www.tceq.texas.gov/news/releases/11-26opposeozone

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NEW OZONE RULES COULD BE MOST EXPENSIVE REGULATIONS EVER

What Could New Ozone Regulations Cost Texas?[1]

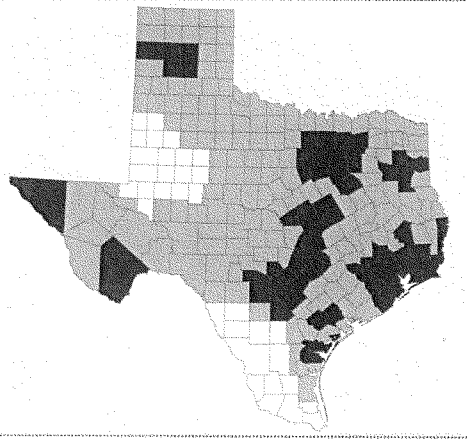
$286 Billion Gross State Product Loss from 2017 to 2040
347,000 Lost Jobs or Job Equivalents per year

TEXAS | Texas would be in mostly out of attainment*

* It Gets Worse for Counties in the Red and Orange

1. Manufacturers won't be able to expand unless other businesses in the area shut down.
2. Federal highway funds could freeze.
3. Economic growth will halt.

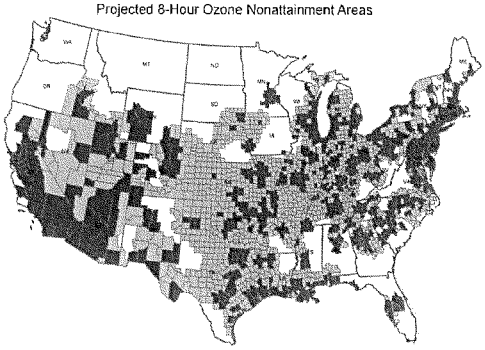
Source: URS, July 7, 2014. Assumes all counties in a metropolitan, micropolitan or combined statistical area will be included in any potential nonattainment area. Some counties could be excluded and other included at the time of designation. Based on a 3-year period, 2011–2013.



Monitored CBSAs and rural counties that would be violating a 65 ppb standard

Unmonitored areas that are anticipated to violate a 65 ppb standard based on spatial interpolation

Projected 8-Hour Ozone Nonattainment Areas



The recent study by NERA Economic Consulting found that a stricter ozone regulation at 65 ppb could cost the U.S.:[1]

- **$140 billion** in lost GDP per year and **$1.7 trillion** from 2017 to 2040; and
- **1.4 million** fewer jobs or job equivalents per year on average through 2040.

Based on 2011–2013 data accessed from http://www.epa.gov/airtrends/ and http://www.epa.gov/airdata/

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OZONE STATE MAP SERIES- 65 PPB STANDARD

EPA SHOULD NOT CHANGE THE CURRENT OZONE STANDARDS ✓

DON'T IMPOSE UNNECESSARY REGULATION

The U.S. government has a responsibility to keep federal regulations sensible and not change standards on businesses and consumers needlessly.

GIVE STATE AND LOCAL GOVERNMENTS A CHANCE TO MEET THE MOST RECENT STANDARDS BEFORE CHANGING THEM AGAIN

Despite having spent billions of dollars on reducing air pollution, several metropolitan areas are having a very tough time meeting the current standards. The EPA should focus on helping these communities meet the old standards before placing new standards.

DON'T SET STANDARDS THAT CAN'T BE ACHIEVED BECAUSE OF BACKGROUND LEVELS

There are many areas of the country where the naturally occurring level of ozone is above what the EPA is considering, so it is not right to hold a county or state to a standard that is impossible to reach.

DON'T SET STANDARDS THAT THREATEN AMERICA'S COMPETITIVENESS AND AMERICAN JOBS

Tightening ozone standards could increase costs to the American public, reduce America's ability to compete internationally, and threaten American jobs.

Costs could be even higher if EPA finalizes a 60ppb standard, which is included in the proposal. These standards could reduce U.S. GDP by **$270 billion** per year and **$3.4 trillion** from 2017 to 2040 and result in **2.9 million** fewer jobs or job equivalents, according to a previous study by NERA Economic Consulting.

AIR QUALITY PROGRESS WILL CONTINUE

The nation's air quality has improved over the past several years, and ozone emissions will continue to decline without new regulations.

HEALTH DATA SHOW THE CURRENT STANDARDS ARE PROTECTIVE

These new standards are not justified from a health perspective because the science is simply not showing a need to reduce ozone levels.

GET INVOLVED: See what actions you can take at: http://www.energytomorrow.com/

LEARN MORE: Find the new study by NERA Economic Consulting at: http://www.nam.org/ozone

U.S. EPA Should Retain the Current 75 PPB Ozone Air Quality Standard*

The U.S. Environmental Protection Agency (EPA) has proposed to revise the 2008 primary National Ambient Air Quality Standard for ozone from 75 parts per billion (ppb) to a range of 65 ppb to 70 ppb, while taking comment on retaining the existing standard and an alternative standard of 60 ppb (79 Fed.Reg. 79234, December 17, 2014). Most states would need to meet the new standard by 2022. Emission reductions would be required three years in advance of the deadline. The comment period for the proposed standards closed on March 17, 2015, and a final standard is expected in late September 2015. This paper outlines the reasons why U.S. EPA should retain the current standard.

Ground level ozone, or urban smog, is caused by the photochemical reaction of emissions of nitrogen oxides (NOx) and volatile organic compounds (VOCs) in the presence of sunlight. Emissions contributing to ozone come from a variety of natural and manmade sources. Manmade sources include motor vehicles, power plants, refineries, manufacturing and industrial facilities, oil and natural gas production, and commercial establishments such as restaurants, dry cleaners, and auto repair shops.

EPA air quality trends data show that ozone concentrations have decreased significantly in both urban and rural areas over the past two decades in response to state and federal emission control programs. Most states are on-track to be fully in attainment with the current standards, but some have not yet reached full attainment according to recent air quality modeling data (see Chart 1). Twenty-three states recommended in their comments on the proposed standard that EPA should retain the current standard (see Chart 2).

Lower Standard = Increased Nonattainment = Fewer Jobs & Greater Reliability Risks

A revised ozone standard of 65 or 70 ppb could lead to widespread nonattainment designations in states that already meet the current ozone standards. Increased nonattainment designations would stifle industrial and business expansion by imposing expensive new emission "offset" requirements and requiring that new or modified emission sources of NOx and VOCs utilize "Lowest Achievable Emission Rate" control technologies. The prices of emission offsets in nonattainment areas of Texas and California are more than $100,000 per ton.

The industries most impacted by new nonattainment area designations include chemicals, refineries, paper, cement, steel, aluminum and fossil-fueled power plants. Major construction projects, such as new commercial or residential developments as well as highway construction can be impacted by transportation "conformity" requirements that limit emissions from associated vehicle activity.

EPA's Regulatory Impact Analysis (RIA) estimates that the annual cost of compliance with a revised standard of 70 ppb would be $3.9 billion, rising to $15 billion annually for 65 ppb, and to $39 billion for the alternative standard of 60 ppb. EPA's RIA also reports that **358 counties in the nation would violate a standard of 70 ppb (based on 2011-2013 data), and that an additional 200 counties would violate a standard of 65 ppb**.

Recent EPA data from state ozone monitors show much more of the country will be in non-attainment than EPA predicts. Charts 3 and 4 depict the percentage of ozone monitors in each state exceeding 3-year average ozone values of 70 ppb and 65 ppb in 2012-14. Even at 70 ppb, many states would face major emission reduction requirements due to their nonattainment status. Virtually all states would have pervasive nonattainment areas if the standard were set at 60 ppb (Chart 5).

In an independent study of a 65 ppb standard conducted by National Economic Research Associates, NERA found that nonattainment area designations would limit economic and job growth by restricting new and expanded industrial and manufacturing facilities, imposing emission offset requirements on new and expanded sources of NOx and VOC emissions, requiring the retirement of electric generating capacity, and raising electricity prices for industries and consumers. NERA estimates that these increased costs could lead to the loss of 1.4 million job-equivalents relative to the current ozone standard (see Table 1).

Retaining the current ozone standard would provide for continued air quality improvement throughout the nation, as emission reduction programs under existing EPA regulations are implemented. EPA documented this progress in its March 2014 air quality modeling for the new low-sulfur gasoline rule. More fuel-efficient vehicles will be added to the nation's truck and auto fleets due to new emissions and fuel economy standards. Additional controls are being added to electric utility generators in response to other EPA rules.

The National Electric Reliability Corporation and Regional Transmission Organizations are raising cautions about the reliability of the nation's electric grid in light of the projected retirement of more than 60 Gigawatts (GW) of generating capacity prior to 2020 due to economic considerations and compliance with more stringent environmental requirements. EPA's proposed Clean Power Plan risks the retirement of an *additional* 46-49 GW of coal-based electric generating capacity by 2020 (EPA, CPP Regulatory Impact Analysis, 2014). A revised ozone standard would compound these reliability risks: EPA's analysis of a 65 ppb ozone standard predicts that nearly 150 coal-fired electric generating units in 20 states would be required to install Selective Catalytic Reduction (SCR) technology to reduce NOx emissions. The high capital costs of SCR retrofits could result in many older units being retired rather than retrofitted with controls.

A revised ozone standard would require the application of tens of thousands of controls on existing industrial, commercial, agricultural, construction, and energy facilities. EPA's projections of "known" controls needed to meet a 65 ppb standard include 79,000 individual control actions across the nation, with individual source reductions measured to levels as little as one pound of NOx on individual diesel engines.[1]

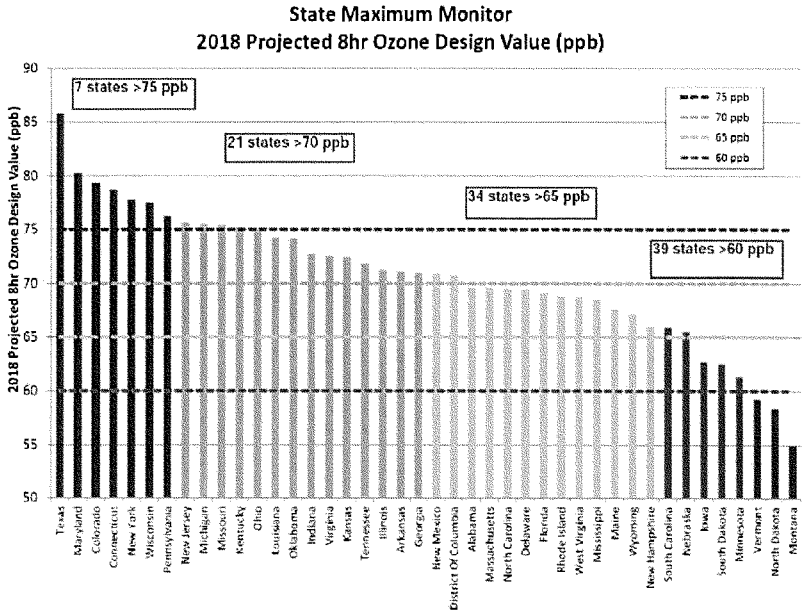
The adverse economic impacts of a revised ozone standard will be determined largely by the extent of new ozone nonattainment areas created by the EPA nonattainment designation process. With nearly 600 counties at risk of nonattainment designations under a 65 ppb standard, the potential impacts on industrial expansion and economic growth are substantial. The current National Association of Manufacturers' Outlook Survey (2Q 2015) reveals serious concerns about the impacts of a revised standard: "(T)he newly proposed ozone regulations hamper new construction and modifications as manufacturers sit back and wait to see if they will face additional compliance costs. More than half of the survey respondents answered they would likely not proceed with new construction or major modifications if they learned that the area did not comply with federal ozone standards."

In sum: States should continue to call upon U.S. EPA to reaffirm the current ozone standard.

*This white paper was prepared by Eugene M. Trisko, an attorney and energy economist. Mr. Trisko has appeared before state public utility commissions as an expert witness on utility cost of capital and rate of return, and has represented labor and stationary source interests before the Northeast Ozone Transport Commission for more than 20 years. He may be contacted at emtrisko@earthlink.net or at (301) 639-5238.

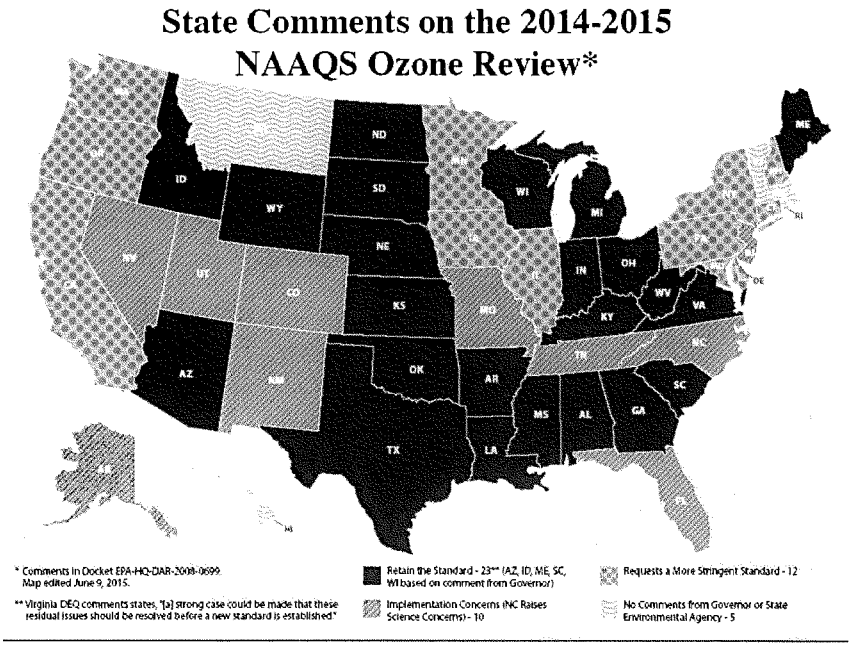
[1] See http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2013-0169-0025.

Chart 1: 2018 Modeling Projections for 42 States



Source: CAMx modeling of 42 states by Lake Michigan Air Directors Consortium.
Note: Assumes CSAPR and MATS power plant controls, w/o Clean Power Plan.

Chart 2: State Comments on Proposed Ozone Standard Revision



* Comments in Docket EPA-HQ-OAR-2008-0699. Map edited June 9, 2015.

** Virginia DEQ comments states, "[a] strong case could be made that these residual issues should be resolved before a new standard is established"

Retain the Standard - 23** (AZ, ID, ME, SC, WI based on comment from Governor)

Implementation Concerns (NC Raises Science Concerns) - 10

Requests a More Stringent Standard - 12

No Comments from Governor or State Environmental Agency - 5

Chart 3: Percent of State Ozone Monitors >70 ppb, 2012-14

(Only states shown in green met a 70 ppb standard at all monitors)

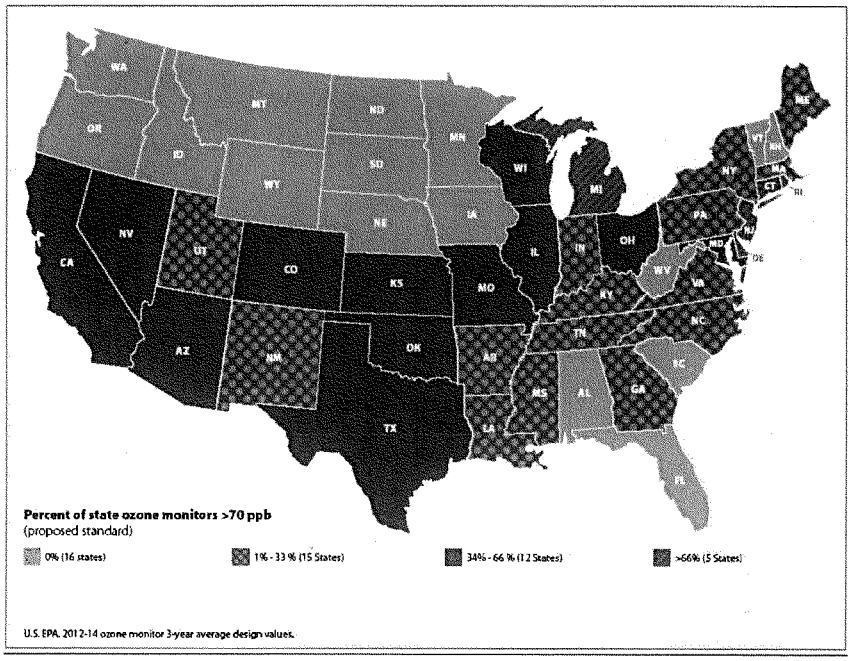


Chart 4: Percent of State Ozone Monitors >65 ppb, 2012-14

(Only states shown in green met a 65 ppb standard at all monitors)

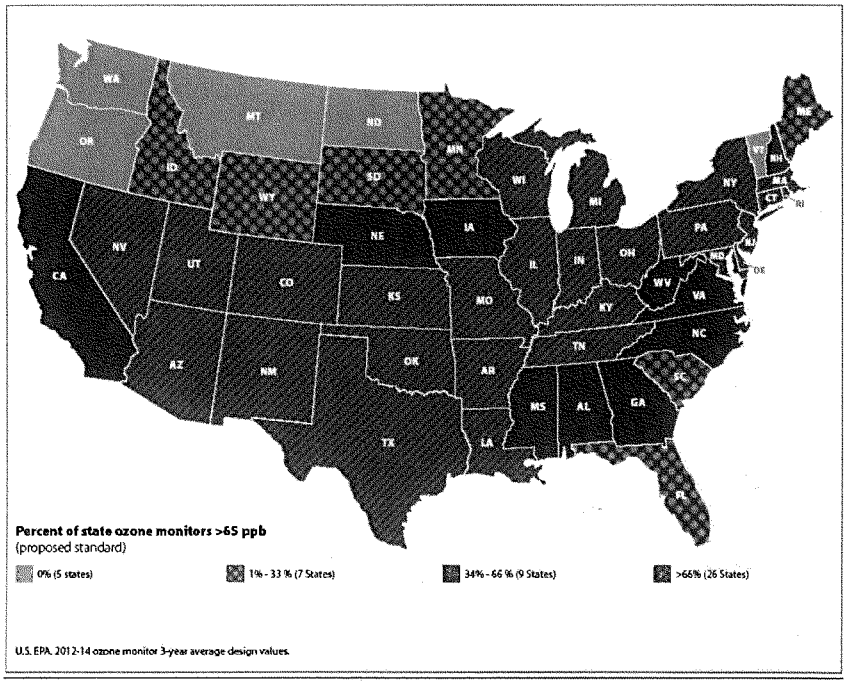


Chart 5: Percent of state ozone monitors >60 ppb, 2012-14

(Only states shown in green met a 60 ppb standard at all monitors)

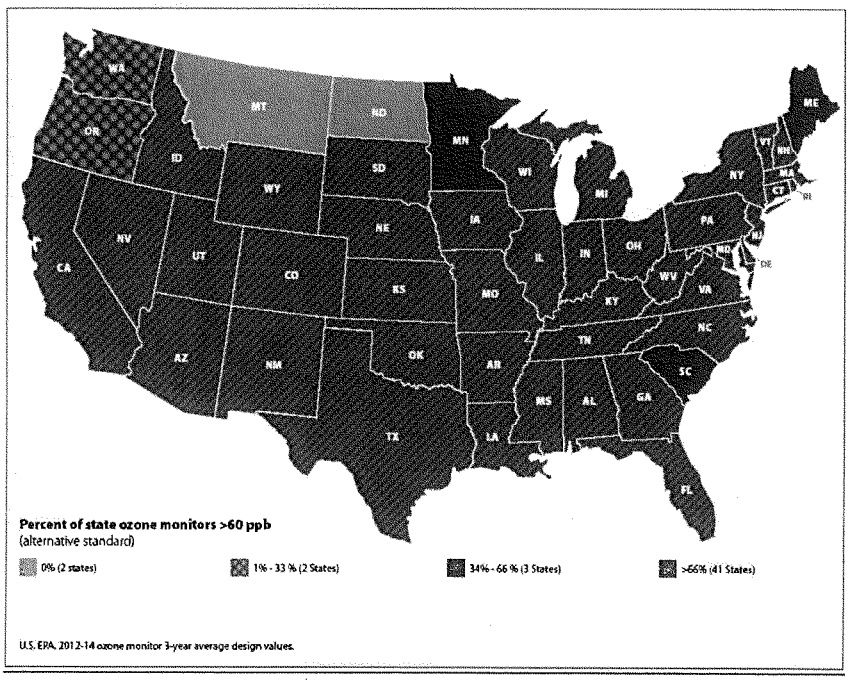


Table 1

NERA Estimated Economic Impacts of 65 ppb Ozone Standard			
State	Gross State Product Lost 2017-2040	Lost Jobs or Job Equivalents per year	Total Compliance Cost
Alabama	$17 Billion	7,580	NA
Arizona	$7 Billion	NA	$5 Billion
Arkansas	$9 Billion	23,414	$17 Billion
California	$233 Billion	149,554	$106 Billion
Colorado	$16 Billion	10,525	$815 Million
Connecticut	$37 Billion	21,666	$22 Billion
Delaware	$13 Billion	7,928	$9 Billion
Florida	$25 Billion	22,838	NA
Georgia	$22 Billion	11,647	NA
Idaho	$4 Billion	3,436	NA
Illinois	$51 Billion	34,873	$9 Billion
Indiana	$24 Billion	17,070	$1 Billion
Iowa	$9 Billion	7,741	NA
Kansas	$32 Billion	45,501	$16 Billion
Kentucky	$21 Billion	13,605	$347 Million
Lousiana	$3 Billion	33,829	$43 Billion
Maine	$10 Billion	6,192	$5 Billion
Maryland	$62 Billion	42,306	$37 Billion
Massachusetts	$93 Billion	40,260	$37 Billion
Michigan	$17 Billion	20,052	$1 Billion
Minnesota	$18 Billion	10,959	NA
Mississippi	NA	13,076	$19 Billion
Missouri	$18 Billion	29,532	$9 Billion
Montana	$7 Billion	2,968	NA
Nebraska	$5 Billion	4,456	NA
Nevada	$19 Billion	5,846	$2 Billion
New Hampshire	$4 Billion	6,667	$3 Billion
New Jersey	$86 Billion	51,020	$52 Billion
New Mexico	$8 Billion	9,875	$5 Billion
New York	$160 Billion	95,040	$92 Billion
North Carolina	$42 Billion	13,457	NA
North Dakota	$3 Billion	1,779	NA
Ohio	$22 Billion	22,914	$840 Million
Oklahoma	$18 Billion	35,503	$35 Billion
Oregon	$8 Billion	5,863	NA
Pennsylvania	$78 Billion	88,604	$89 Billion
Rhode Island	$9 Billion	6,581	$5 Billion
South Carolina	$12 Billion	6,617	NA
South Dakota	NA	2,792	NA
Tennessee	$32 Billion	13,575	$6 Billion
Texas	$286 Billion	347,322	$376 Billion
Utah	$7 Billion	5,809	$86 Million
Vermont	$5 Billion	2,871	$2 Billion
Virginia	$69 Billion	39,087	$35 Billion
Washington	$16 Billion	9,753	NA
West Virginia	$17 Billion	10,658	$2 Billion
Wisconsin	$30 Billion	24,421	$10 Billion
Wyoming	$48 Billion	3,062	$213 Million
Source: http://www.nam.org/ozone/			

Is it Time to Consider a New Approach for Reviewing the National Ambient Air Quality Standards (NAAQS)?

William B. Faulkner[a]*, Julie E. Goodman[b], Sonja N. Sax[b], Sabine S. Lange[c], Michael Honeycutt[c], Annette Sharp[d]

*Corresponding author, Faulkner@tamu.edu
[a]Texas A&M University, 2117 TAMU, College Station, TX, USA
[b]Gradient, 20 University Rd., Cambridge, MA, USA
[c]Texas Commission on Environmental Quality, Park 35 Circle, Austin, TX, USA
[d]Louisiana Department of Environmental Quality, 602 N. 5th Street, Baton Rouge, LA, USA

Abstract

Significant advances in the scientific understanding of air pollution and toxicology have been made since the Clean Air Act was last amended in 1990. These advances, coupled with the difficulty and cost of attaining ever-tightening standards, raise the question: is it time to consider a new approach for reviewing the National Ambient Air Quality Standards (NAAQS)? There are several aspects of the NAAQS process that should be reconsidered, including the causal framework, exposure and risk assessments, and regulatory impact analyses. In particular, causal evaluations should be more thorough, transparent, scientifically sound, and should consider study quality. They would be greatly enhanced by use of new evidence integration frameworks and causality tests. Risk assessments would benefit from inclusion of thresholds based on pollutant modes of action, reconsideration of assumptions used in exposure assessments, and consideration of multi-pollutant models in concentration-response functions. Additionally, uncertainties and limitations of risk assessments should be better communicated to inform policy decisions. Regulatory impact analyses should accurately reflect total costs and benefits of a rule. Economic impacts of proposed standards should include greater clarity and comprehensiveness, a more appropriate consideration of uncertainties in expected costs and benefits, and an assessment of the impacts of the pollutant in question, rather than "co-benefits" from reduction of $PM_{2.5}$. Overall, improvements to the NAAQS review process would yield standards based on the best available scientific analysis.

Keywords: air pollution, risk assessment, causality, particulate matter, ozone

1. Introduction

The federal Clean Air Act (CAA) instructs the Environmental Protection Agency (EPA) to set air pollution standards "the attainment and maintenance of which...are requisite to protect the public health" with "an adequate margin of safety" (42 US Code §7409). Section 109(a) of the CAA requires EPA to set National Ambient Air Quality Standards (NAAQS) for six "criteria" pollutants (*i.e.*, ozone, particulate matter [PM], lead, carbon monoxide, nitrogen dioxide, and sulfur dioxide [SO_2]) and review those standards every five years.

Significant advances in the scientific understanding of air pollution and toxicology have been made since the CAA was promulgated in 1970 and the last major amendments were adopted in 1990. These

advances, coupled with the difficulty and cost of attaining ever-tightening standards, raise the question: Is it time to consider a new approach for reviewing the NAAQS? The following discussion uses examples primarily drawn from reviews of PM and ozone NAAQS, but most issues raised apply to review of other criteria pollutants.

2. NAAQS Framework for Causation Assessment

EPA uses a weight-of-evidence (WoE) framework for causal determination (hereafter, the "NAAQS causal framework") that includes methods for literature searches; study selection, evaluation and integration; and causal judgments. The NAAQS causal framework has many valuable features but could be more explicit in some cases, and some features are missing. This has led to inconsistent application and sometimes led to conclusions that are unsupported by the overall WoE. Goodman *et al.* (2013) identified additions to the NAAQS causal framework that would help align it with best practices for systematic reviews and evidence integration, including guidelines for evaluating all evidence in a consistent manner using well-specified criteria and determining whether such evidence constitutes support for causation or an alternative hypothesis. Additions identified by Goodman *et al.* (2013) should be adopted by EPA so that causal evaluations are more thorough, transparent, scientifically sound, and do not yield unwarranted causal determinations. This is particularly important because associations considered "causal" or "likely causal" are included in EPA's risk assessments and Regulatory Impact Analyses (RIAs), which examine benefits, costs, and other economic impacts of regulations.

2.1 Epidemiology Studies

Epidemiology evidence figures prominently in EPA's evaluation of causality for most criteria pollutants. Despite significant advances in epidemiology methods made in the past 25 years, these studies still have major limitations that often preclude conclusions regarding causality. In general, EPA has focused on epidemiology studies reporting very small, but statistically significant, associations between increasingly low pollutant concentrations and health effects, but it has not given the same weight to studies of similar quality reporting no associations (*e.g.*, see USEPA, 2013a, 2015). Although EPA discusses some limitations associated with these studies, it is unclear how the agency considers them when judging evidence. These limitations include exposure measurement error, confounding by co-pollutants and other factors, and uncertainty with statistical models.

2.1.1 Exposure Measurement Error

Most epidemiology studies rely on data from central ambient monitoring sites to provide community average ambient pollutant exposure concentrations (*e.g.*, Neas *et al.*, 1999; Naeher *et al.*, 1999; Mortimer *et al.*, 2002; Gent *et al.*, 2003; Katsouyanni *et al.*, 2009; Stieb *et al.*, 2009), and interpretation of statistical associations is predicated on the assumption that these measurements reflect actual personal exposures. That is, individuals are assumed to be exposed to the concentration of each pollutant measured outdoors at the ambient monitor nearest to their home, 24 hours a day, seven days a week. However, ambient monitors may be miles from where individuals work and live, and therefore do not necessarily reflect local concentrations. Additionally, since many individuals spend a majority of the day indoors, their exposure to ambient outdoor air pollutants is limited. In the case of PM, many indoor sources account for much higher individual exposures (*e.g.*, Long *et al.*, 2000). Exposure measurement error results when there is poor correlation between measured exposures used in an epidemiology study and actual individual exposures of the study population.

In recent reviews, CASAC highlighted exposure measurement error as a key uncertainty affecting ozone epidemiology literature, concluding that central-site community monitors are generally poor measures of individual exposures (Henderson, 2006). Personal ozone exposures are typically much lower than ambient levels and often show little or no correlation with concentrations measured at central ambient sites (Henderson, 2006). For a Baltimore-based cohort of 56 subjects, Sarnat *et al.* (2001) reported no correlation between ambient and personal ozone measurements for either winter or summertime sampling periods. In a similar study in Boston, Sarnat *et al.* (2005) reported comparable results, finding no correlation between ambient and personal ozone concentrations in winter and only a moderate correlation in summer.

EPA and others have asserted that exposure measurement error is likely to underestimate risk from air pollutant exposures. For example, in the REA for PM, EPA cited the intra-urban analysis by Krewski *et al.* (2009) as support for this assertion. However, exposure measurement error generally leads to an underestimation of risks at high exposures but an overestimation of risks at low exposures (Rhomberg *et al.*, 2011a); the latter being particularly relevant for the NAAQS. This should be considered when assessing whether epidemiology studies support causal associations.

2.1.2 Confounding

Co-pollutants can significantly impact risk estimates, which is why multi-pollutant models are so important. In the most recent analysis of the American Cancer Society (ACS) cohort, Krewski *et al.* (2009) reported associations between several pollutants and mortality in single-pollutant models, but they did not present results from multi-pollutant models. In this study, mortality risks reported for several pollutants (*e.g.*, SO_2 and summertime ozone) were of similar magnitude and statistical significance as fine $PM_{2.5}$ (Krewski *et al.*, 2009). In their earlier re-analysis of the ACS study, Krewski *et al.* (2000) found that adjustment for co-pollutants generally decreased $PM_{2.5}$ risk estimates. For example, the relative risk for all-cause mortality from $PM_{2.5}$ in the ACS cohort was reduced from a statistically significant risk to risks that were not significant when adjusted for SO_2 or all four gaseous co-pollutants.

Temperature and other environmental factors can also confound relationships between pollutants and health effects. The longitudinal study of ozone and children with asthma by Gent *et al.* (2003) only considered same-day maximum temperature, but meteorological variables such as relative humidity may have confounded associations with respiratory symptoms. Air conditioning use and exposure to tobacco smoke are also important potential confounders of causal associations with respiratory effects, yet they were not accounted for in some key studies (*e.g.*, Mortimer *et al.*, 2002; Stieb *et al.*, 2009).

Although EPA evaluated confounders to an extent, the agency should interpret epidemiology study results with full consideration of how co-pollutants or other environmental confounders (*e.g.*, temperature) impact statistical associations, as well as how results are used in developing air quality standards. Furthermore, a multi-pollutant approach is essential in risk assessments based on epidemiology studies to identify true risks of pollutant exposure.

2.1.3 Statistical Models and Model Specification

Results from air pollution epidemiology studies have been shown to vary depending on statistical methods or model specifications. For example, EPA has interpreted findings of the two prominent cohort studies underlying concentration-response (C-R) functions for $PM_{2.5}$ (*i.e.*, the ACS cohort evaluation by Krewski *et al.* (2009)) and the National Mortality and Morbidity Air Pollution Study [NMMAPS] cohort evaluated by Dominici *et al.* (2007) as supportive of a causal relationship. However, Cox (2012a) described an analysis of the NMMAPS dataset, which includes census data, daily mortality rates, daily

$PM_{2.5}$ estimates, and meteorological measurements in more than 100 US cities. He showed that regression models yielded both positive and null associations between $PM_{2.5}$ exposure and mortality, depending on treatment of daily temperature, which is a strong confounder in $PM_{2.5}$-mortality associations. In addition, he applied Granger causality tests and found that less than 4% of associations between daily $PM_{2.5}$ exposure and all-cause, cardiovascular, and respiratory mortality were significant. He concluded that the results do not suggest a causal relationship.

While the need for causal interpretation of statistical associations is acknowledged in pollution health effects research and tests for assessing potential causation have been developed, these methods have not been generally applied to $PM_{2.5}$ or ozone and mortality data (Cox, 2012b). Cox *et al.* (2013) suggested three general methodological steps to test for causality:

- Generate, test, and, if possible, refute plausible alternative (non-causal) explanations for positive associations;
- Show that associations cannot be explained by using alternative statistical models or other information; and
- If possible, test whether changes in responses follow (and can be successfully predicted from) changes in individual exposures.

Statistical tests that could be applied to assess causality include conditional independence tests, Granger causality tests, change point analysis, causal network models of change propagation, and tests with negative controls for exposures or for effects (see Cox *et al.* (2013) for relevant references). Such causal tests, rather than simple correlation analyses, should be applied to analyses of epidemiological studies in support of future NAAQS reviews.

2.2 Experimental Studies

Traditional toxicology studies evaluate clinically relevant toxicity or disease, often at high exposure levels (and thus with questionable relevance to humans; see Goodman *et al.*, 2010). Evidence based on mechanistic whole-animal toxicology studies, as well as *in vitro* studies of tissues, cells, and molecules can help identify a mode of action. These studies build on our understanding of chemical toxicology and molecular biology and allow exploration of the plausibility of various causal pathways. Relationships of simple cellular or enzymatic results to the whole organism may be complex, given they are, by nature, simplifications that may not reflect actual exposure conditions (*e.g.*, inhalation, reaction with extracellular lining fluid, *etc.*) or account for complex processes that could mitigate or amplify responses in isolated cells (*e.g.*, immune responses). Also, in some cases, a particular biological change may be part of a homeostatic process and so may not be indicative of adverse effects. Despite these limitations, these types of studies can be very informative for understanding risks of criteria pollutants (Goodman *et al.*, 2014a).

Mode-of-action studies have shown that antioxidants present within airway lining fluid can prevent ozone-mediated cellular and tissue oxidation (Avissar *et al.*, 2000; Ballinger *et al.*, 2005; Cross *et al.*, 1994; Mudway *et al.*, 1996; Samet *et al.*, 2001), and only ozone exposure of a sufficient duration and concentration can overwhelm antioxidant defenses, allowing oxidative damage to occur in airway epithelial cells (Schelegle *et al.*, 2007). Similarly, as reviewed by Cox (2012b), low levels of PM exposure increase antioxidant generation in the lung, but higher levels induce generation of reactive oxygen species that overwhelm the lung's homeostatic mechanisms. Together, these studies show a threshold exists below which antioxidant defenses are sufficient to protect against adverse effects of ozone and $PM_{2.5}$. It is

notable that a mode of action has not emerged that predicts adverse health impacts at ozone and $PM_{2.5}$ exposure levels typical of present-day ambient environments.

It is encouraging that EPA has cited more of this type of experimental evidence in recent policy reviews. However, moving forward, it is critical such experimental studies be given the same weight as those showing a correlation with adverse health effects because these types of studies may support a threshold below which more stringent pollutant regulations will not lead to improvements in public health or welfare.

2.3 Evidence Integration

The NAAQS causal framework indicates one should look separately at epidemiology, controlled exposure, and animal toxicology evidence, first coming to a synthesized judgment for each and then integrating these separate judgments into an overall qualitative statement about causality (USEPA, 2013a,2015). Data evaluation should be integrated across all lines of evidence *before* coming to judgments based on each realm independently such that interpretation of each line of evidence informs interpretation of the others (Goodman *et al.*, 2013).

As an example of how a flawed approach to evidence integration can impact causality determinations, EPA (2013a) stated that recent animal studies of ozone exposures provide stronger evidence for cardiovascular effects than epidemiology studies, concluding that evidence was indicative of a "likely causal" relationship. Key animal studies on which EPA relied were conducted at very high exposure levels and have little relevance to ambient human exposures (*e.g.*, Chuang *et al.,* 2009; Perepu *et al.*, 2010). Also, EPA considered an increase in heartrate variability as the key indicator of effect in animal studies, but inconsistent epidemiology evidence regarding heartrate variability does not corroborate animal data. In this instance, a more effective approach would be to consider the lack of consistency and coherence of evidence across different realms in making a causal determination (*e.g.*, Goodman *et al.*, 2014b).

Another example can be found in the PM Final Rule, in which EPA stated, "findings of new toxicological and controlled human exposure studies greatly expand and provide stronger support for a number of potential biological mechanisms or pathways for cardiovascular and respiratory effects associated with long- and short-term PM exposures" (USEPA, 2013d). A review of the PM ISA, however, suggests experimental evidence is inconsistent and incoherent with findings in epidemiology studies (USEPA, 2009). For example, findings of mild and reversible effects in experimental studies conducted at elevated exposures are incoherent with more serious associations described in epidemiology studies (*e.g.*, hospitalization and mortality). Also, both animal and controlled human exposure studies have identified no-effect levels for acute and chronic exposure to PM and PM constituents at concentrations considerably above ambient levels (*e.g.*, Gong *et al.*, 2003; Holgate *et al.*, 2003; Schlesinger and Cassee, 2003). A better approach would be to consider such experimental findings in light of the high exposure levels and what the relevance may be for ambient exposures.

The current approach of evaluating each realm of evidence separately before integrating judgments at the end of the process disallows data from one realm to influence conclusions from another. Instead, evidence integration involving an evaluation of how results of particular studies can inform similar causal processes in other studies, including studies in other realms of investigation, should be applied. It is the potential for such commonality of causal processes that makes animal data useful evidence for potential effects in humans.

3. Risk and Exposure Assessment

EPA includes health effects it finds to have "likely causal" or "causal" relationships with the pollutant in its quantitative risk assessment (REA). In assessing a "causal" relationship, EPA concludes that evidence is sufficient at relevant pollutant exposures, whereas for a "likely causal" relationship, EPA concludes evidence is sufficient, but important uncertainties remain (USEPA, 2013a, 2015). EPA conducts REAs to assess risks associated with criteria pollutants by estimating exposures using air quality or personal exposure models and estimating health risks based on literature-derived C-R functions. For ozone, EPA conducted two separate risk evaluations: one for lung function decrements based on controlled exposure studies, and one for mortality and morbidity endpoints based on epidemiology data (USEPA, 2014a). For PM, risk estimates for mortality and morbidity endpoints are based only on epidemiology studies (USEPA, 2010a). All risk evaluations are based multiple critical assumptions that can significantly impact results, yet uncertainties associated with these assumptions are not fully considered by EPA. Issues associated with methods used by EPA are described below.

3.1 Exposure Assessment

For the ozone lung function risk evaluation, EPA used the Air Pollution Exposure (APEX) model to estimate ozone exposure for simulated individuals (USEPA, 2014a). APEX is designed to estimate movement of simulated individuals through time and in various microenvironments (*e.g.*, outdoors, indoors, residence) and cumulate their total ozone exposure. Exposures include estimates based on recent ozone measurements combined with estimated exposures that would result from lowering ambient ozone levels to meet lower alternative ozone concentrations. In the ozone REA, APEX results were used in exposure evaluations, and EPA calculated the number of simulated individuals whose exposures exceeded benchmark ozone levels.

There are multiple sources of error associated with APEX model inputs, including measured ambient ozone concentrations; adjustments of ambient concentrations to simulate meeting various standards; individuals' activity patterns, meteorology, and census data; micro-environmental concentration estimates; activity profiles; and physiological processes. These sources of error were not quantified in the REA, so it is unknown how they impact exposure estimates.

EPA's APEX exposure analysis is also limited by assumptions that likely result in overestimated exposures and risks. For example, the agency's analysis focused on what EPA considered "higher-risk" populations (*e.g.*, children and asthmatics) and highlighted results for simulated children who spend the greatest amount of time outdoors engaged in moderate to heavy exercise, although these children comprise only a small proportion of the population. In addition, EPA reported exposures above various benchmarks selected based on controlled exposure studies. However, as acknowledged by the agency (USEPA, 2014b), there is uncertainty regarding whether adverse effects occur at lower benchmark levels used. Finally, EPA reported the percentage of individuals who experience a single day of exposure above these benchmarks in a year or ozone season; however, a single day of exposure above these levels is unlikely to be harmful (Pellegrino *et al.*, 2005 USEPA, 2014b). All these conservative assumptions resulted in unrealistic exposure estimates. A better approach would be to consider assumptions more closely aligned with scenarios expected in the general population and use benchmark levels of exposure consistent with adverse effects observed in the literature (*e.g.*, Goodman *et al.*, 2014c).

A different type of assessment is used to estimate exposures associated with mortality and morbidity outcomes evaluated in epidemiology studies. EPA estimates exposures based on measured ambient air concentrations from central-site monitors adjusted to concentrations that would meet current or alternative

NAAQS. A standard approach (applied in previous ozone and PM REAs) is to adjust concentrations by applying a "rollback procedure," typically the quadratic rollback, which is a mathematical approach to estimate pollutant concentrations to meet various standard levels. For ozone, this procedure is problematic because it does not account for complexities in ozone chemistry. Therefore, EPA employed a different approach in the most recent ozone REA, based on the Higher-Order Decoupled Direct Method (HDDM) model, which incorporates atmospheric processes and meteorology to provide more realistic estimates of ozone levels in response to lowering emissions of precursor pollutants. Although an improvement on the quadratic rollback, the HDDM model includes significant, yet-unquantified uncertainties to assess impacts on risk results. These uncertainties relate to inputs that determine how ozone concentrations will be reduced. For example, EPA assumed only nitrous oxide reductions would be applied and that these reductions would occur uniformly in time and space. Such simplistic reduction strategies are rarely reflective of air quality management approaches. An improvement to this process would include more rigorous uncertainty analyses to quantify how model assumptions impact exposure and risk estimates.

3.2 Risk Assessment

EPA applies C-R functions based on controlled exposure and epidemiology studies to predict mortality and morbidity associated with various ambient air pollution levels, In the ozone REA, C-R functions from controlled exposure studies used to predict lung function deficits were the basis of the McDonnell-Stewart-Smith (MSS) model. This C-R function, along with APEX-generated exposures and corresponding ventilation rates for simulated individuals, were used to estimate individual lung function reductions (McDonnell *et al.*, 2007, 2010, 2012). The MSS model presents significant improvement over previous models, but it includes a high degree of uncertainty not captured in estimated risks. For example, although studies reflect effects observed in adults, the model was applied to estimate effects in children, assuming they were as responsive as the most responsive adults despite studies suggesting children and adults have similar responses to ozone (McDonnell *et al.*, 1985). EPA's lung function risk assessment would be more scientifically supported if it were based on the APEX model with realistic inputs and assumptions and if EPA quantitatively characterized uncertainty associated with the model.

Risks based on C-R functions derived from epidemiology studies are much less certain than those based on controlled exposure studies (USEPA, 2014b). Epidemiology studies are generally based on single-pollutant models from only one or two cohorts, and they rely on the assumption that there is a 100% certain, causal relationship between short- and long-term exposure to ambient air pollutants and health impacts, which is not the case. Furthermore, EPA assumes there is no exposure threshold below which pollutants cannot impact health. As previously discussed, several studies support thresholds for $PM_{2.5}$ and ozone (*e.g.*, Gamble and Nicolich, 2006; Abrahamowicz *et al.*, 2003; Pope *et al.*, 2002; Abbey *et al.*, 1999), and both theoretical and experimental studies show that exposure measurement error can result in false linear or log-linear relationships or mask the threshold for effects (*e.g.*, Brauer *et al.*, 2002; Cakmak *et al.*, 1999; Crump, 2005; Küchenoff and Carroll, 1997; Rhomberg *et al.*, 2011b). The "no threshold" assumption presents difficulties when choosing an appropriate standard as it necessarily results in identification of risk at **any** level of $PM_{2.5}$ or ozone; and, therefore, at any level of a potential NAAQS. This leads to arbitrary selection of an appropriate NAAQS level. Additionally, only a small fraction of total uncertainty in epidemiology studies is captured in confidence intervals around risk estimates (Cox, 2012a; USEPA, 2014a), making reported estimates appear more certain than they really are. To improve the risk assessment process, thresholds should be included in evaluation of risks, and C-R functions that account for confounders should be selected. Also, EPA should more fully consider impacts of these issues on policy decisions.

4. Regulatory Impact Analyses

Executive Orders 12866 (Clinton, 1993) and 13563 (Obama, 2011) require agencies of the executive branch to conduct RIAs to provide decision-relevant information in a transparent format to policymakers and the public. Although EPA is not permitted to consider costs in setting the NAAQS, the CAA mandates these analyses to demonstrate each intended regulation is necessary and the potential benefits of implementation justify its costs (USEPA, 1999). Although the courts have ruled that EPA cannot consider economic effects when setting NAAQS (most notably in *Whitman v. American Trucking Association, Inc.*), CASAC has an obligation to advise EPA on negative impacts of implementing proposed standards (US Congress, 2011; USEPA, 2013c). To date, CASAC has largely abdicated this responsibility (Holmstead, 2012; US Chamber of Commerce, 2014), likely because EPA has historically separated standard implementation from establishment of the form and level of standards. If NAAQS are set with an adequate margin of safety, as required by the CAA, they *should* fail cost-benefit analyses (*i.e.*, purely economic costs should supersede benefits); if conducted properly, they should indicate the *true* costs paid for the societal protection desired (Smith, 2011). However, there are several issues with the manner in which EPA conducts RIAs for air quality standards.

4.1 Implementation Costs

Lower NAAQS will put many areas out of attainment, resulting in costly measures to meet standards. Increased costs are associated with many potential disbenefits, including:

- Diversion of resources from business expansion and capital investment to emissions compliance and reporting;
- Diversion of resources from other public health programs that could be associated with greater benefits;
- Restrictions on transportation (e.g. no-drive days, elimination of drive-through, etc.) in non-attainment areas that hamper economic development; and
- Increases in electricity prices through increased production costs.

Some of these can lead to increased underemployment or unemployment, which can have negative impacts on health, such as increased risk of stroke, heart attack, heart disease, arthritis, and depression (Claxton and Damico, 2010; BLS, 2012; RWJF, 2013). Under the CAA, EPA is not permitted to consider these or other costs when setting standards.

Recent changes to NAAQS are placing strain on state and regional air pollution regulatory agency (SAPRA) budgets. When new standards are enacted, SAPRAs incur significant costs to interpret and implement new rules through increased staff, permitting, and monitoring requirements. These changes include the new lower annual $PM_{2.5}$ standard (USEPA, 2013d), the requirement that both modeled and monitored one-hour SO_2 be in attainment of the standard (USEPA, 2010b), and associated rules such as the Cross State Air Pollution Rule. Many of these changes are based on inadequate evaluations of the science, resulting in relatively limited (and highly uncertain) additional protection of public health and welfare. Development of state implementation plans and impacts to permitting in increased numbers of non-attainment areas are further taxing SAPRA resources. Although these costs are significant, they are not included in RIAs.

An event outside the control of the state that leads to an increased formation or emission of a pollutant (*e.g.*, dust blowing in from other countries, wildfires) is classified as an exceptional event. Until recently,

there has been little guidance regarding what constitutes an exceptional event or what details should be included when applying for a ruling under EPA's Exceptional Events Rule (EER); thus leading to drastic differences in requirements between regions. EPA recently issued draft guidance regarding high-wind event applications under the EER (USEPA, 2013b), but guidance regarding NAAQS exceedances due to wildfires are still pending. Even with guidance for high-wind events, requirements for preparing an application are well beyond in-house capabilities of most SAPRAs, and data requirements (*e.g.*, 1-5 minute average wind data or continuous monitoring data in rural locations) are beyond what most agencies collect. Costs for preparing such an application have been estimated at over $500,000, and there is little assurance that EPA would accept any particular application.

Regulated entities also incur many compliance costs that may not be foreseen when new standards are promulgated. For example, EPA does not consider costs associated with New Source Review (NSR) when setting new NAAQS. However, when new NAAQS are promulgated, regulatory agencies must consider implications in the NSR permitting process for new sources or modification of existing sources of pollution. Economic outlays required to comply with changing NSR requirements are significant and should be estimated and included by EPA in RIAs.

Section 109(a) of the CAA, which requires EPA to set standards to protect public health with an adequate margin of safety, is implicitly subjective. There have been clear benefits from the NAAQS, with significant decreases in pollution since promulgation of the CAA. But air quality standards have been reduced to a point where, in certain regions, the law of diminishing returns applies to positive effects on health. In some areas, proposed standards are close to and sometimes below measured background levels, making attainment impossible.

4.2 C-R Model Uncertainties

Cox (2012b) offered a thorough critique of EPA's costs and benefits estimates of the 1990 CAA Amendments through 2020. He reported the agency's estimate of benefits was unrealistically high by several orders of magnitude such that costs of these amendments could exceed benefits by as much as 50-fold. Central to the discrepancy between EPA's estimated benefits and those estimated by Cox (2012b) is the assumed distribution of the C-R function slope, which EPA assumed to always be positive, but which Cox (2012b) allowed to assume zero or negative values in some cases, consistent with findings of multiple health effects studies. EPA's process masked major uncertainties in the C-R model, and the incorrect assumption of a positive C-R function for all non-zero $PM_{2.5}$ concentrations underlies the vast majority of estimated benefits.

4.3 Co-benefits of Reduced $PM_{2.5}$ Emissions

Smith (2011) evaluated $PM_{2.5}$ health benefits estimates used by EPA in the agency's RIAs from 1997, when a NAAQS for $PM_{2.5}$ was adopted, until 2011. Of the 57 RIAs analyzed for non-PM-related rules, EPA relied on $PM_{2.5}$ co-benefits estimates to support the benefits of almost all of them. Smith (2011) shows 26 examples of non-PM-related RIAs in which PM co-benefits comprise greater than half the total estimated benefits, including 10 in which PM co-benefits are the *only* benefits quantified. All cost-benefit analyses conducted by EPA regarding lowering the ozone NAAQS demonstrated that the costs of such changes exceed public health benefits, but EPA justified lowering the standards on a cost-benefit basis because it would reduce $PM_{2.5}$ – not ozone – concentrations (Holmstead, 2012). Use of such co-benefits to justify passage of air quality standards unrelated to PM is inappropriate, particularly given that $PM_{2.5}$ is itself a regulated pollutant for which a standard is established to protect public health and welfare with an adequate margin of safety.

4.4 Economic Benefits Metrics

When assessing benefits of new regulations, EPA often quantifies their monetary value by estimating the number of deaths avoided as a result of the new regulation and multiplying that by the value of a statistical life (VSL). The VSL used by EPA is $4.8 million (1990$), based on hedonic wage studies and is adjusted for inflation. The extension in life expected as a result of CAA regulations averages less than one year (Table 5-8 of USEPA, 2011), but benefits of cleaner air do not benefit all people similarly. The economic value of additional life-years varies with age so considering "life-years gained" and the VSL-year (VSLY) together is a more appropriate measure of the efficacy of air quality standards (Cox, 2012b). Although the impact of such a change would depend on both the value of VSLY chosen and the rate at which such a value decreases with age, the median age of people benefiting from cleaner air is estimated to be 80 (USEPA, 2011), so this change would likely reduce the expected monetary benefits of many proposed regulations.

EPA should assess economic impacts of proposed air quality standards by including greater clarity and comprehensiveness, more appropriate consideration of uncertainties in expected costs and benefits, and assessment of the impacts of the pollutant in question separate from $PM_{2.5}$ co-benefits.

5. Conclusions

Although uncertainties still exist, advances in our understanding of air pollutants coupled with new developments in risk assessment warrant changes in methods used to evaluate NAAQS. The relevance and usefulness of forthcoming policy assessments would be enhanced by adoption of a few key practices:

- Update the EPA framework for assessing causality and evaluating individual epidemiology and experimental studies, paying particular attention to exposure misclassification, confounders, and statistical model choices in epidemiology studies.
- Generate more studies and data to characterize C-R functions and toxicities of individual pollutants within a multi-pollutant framework. Where C-R functions are particularly uncertain, uncertainties should be appropriately acknowledged and extrapolation of C-R functions avoided. Additionally, when toxicological and human clinical data have established the existence and mechanisms of health effect thresholds (as is the case for PM and ozone), then thresholds should be incorporated into risk and benefits models.
- The full socioeconomic costs and benefits of NAAQS to regulated entities and regulatory agencies should be evaluated with greater transparency. More appropriate metrics than those currently used should be adopted, and uncertainties in factors affecting cost-benefit calculations should be recognized. Furthermore, benefits of proposed regulations should be based on risk reductions for the regulated pollutant rather than "co-benefits" associated with reducing $PM_{2.5}$ concentrations. Such practices would more clearly inform policymakers and the public regarding true costs and benefits of regulatory actions.

Adopting these practices into the NAAQS process may require modifying the CAA, but most can be implemented within the current law. These changes would bring increased transparency and accountability to the regulatory process while commensurately improving public health protection by targeting pollutants that most affect health and welfare, and clearly directing resources to those areas where they can be utilized most effectively.

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Highlights

- Several core elements of the NAAQS review process should be updated
- The framework for evaluating causal relationships can be greatly improved
- Risk assessments should consider pollutant mode of action and multipollutant effects
- Regulatory economic impact analyses should be more clear and comprehensive
- Improvements to the NAAQS review process would yield better science-based standards

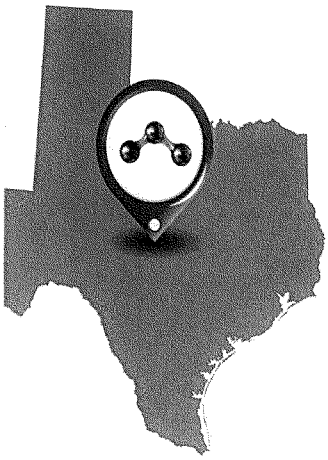
Lowering the Ozone Standard Will Not Measurably Improve PUBLIC HEALTH

by Bryan W. Shaw, Sabine Lange, and Michael Honeycutt

Bryan W. Shaw, Ph.D., P.E., is chairman; **Sabine S. Lange, Ph.D.,** is a toxicologist in the Toxicology Division; and **Michael E. Honeycutt, Ph.D.,** is the director of the Toxicology Division of the Texas Commission on Environmental Quality (TCEQ), Austin, TX. E-mail: Michael.Honeycutt@tceq.texas.gov.

The Texas Commission on Environmental Quality argues that the thoughtful integration of scientific data does not support the assumption that tightening the ozone standard will result in measurable health benefits.

The Texas Commission on Environmental Quality (TCEQ) strives to protect our state's public health and natural resources consistent with sustainable economic development. In accordance with this mission, the State of Texas alone has spent >$1 billion since 2001 striving to achieve the 1997 0.08 parts per million (ppm) ozone standard. Most of Texas' air quality areas recorded their lowest ozone values ever in 2014. The Houston and Dallas/Fort Worth areas, for example, have seen ozone levels reduced 29% and 21%, respectively, during the past 15 years, while the population has increased 34% and 29%, respectively. We will continue to expend resources to achieve the 2008 75 parts per billion (ppb) ozone standard, which has yet to be fully implemented by the U.S. Environmental Protection Agency (EPA). However, as the concentration of ambient ozone decreases, it becomes exponentially more difficult, and expensive, to attain further reductions. EPA is poised to lower the standard further. While cost cannot be considered in setting the standard, the high cost of further lowering the standard necessitates that this be a sound policy decision and will result in measurable health benefits.



EPA bases its proposal to lower the ozone standard on three key health-related endpoints: premature mortality, respiratory morbidity (i.e., asthma exacerbation, emergency department visits, and hospital admissions), and lung function (i.e., primarily FEV_1 [Forced Expiratory Volume in 1 second, a measure of lung function] decrements). We agree that respiratory effects can occur at the high ozone concentrations that were measured in the 1980s and 1990s. The pertinent question is whether lowering the ozone standard from 75 ppb to 70 or 65 ppb will result in a measurable reduction in these effects. In this short review, we consider some important concerns with EPA's conclusions about the health effects of ambient ozone concentrations. We conclude that EPA has not demonstrated that public health will measurably improve by decreasing the level of the ozone standard.

Ecological Epidemiology Studies, Not Adequate for Setting Standard

EPA relies heavily on ecological epidemiology studies for its assessment of premature mortality and respiratory morbidity. These studies have been very inconsistent in its findings, and flaws, biases, and unusual characteristics of the data have made them difficult to interpret. One unusual and as-yet unexplained characteristic of the epidemiological associations between short-term ozone exposure and mortality is regional heterogeneity. This heterogeneity means that different cities have different associations between short-term exposure to ozone and mortality, and very few of those associations are positive.[1-4]

For example, Smith et al.[1] found only 7 of the 98 cities investigated showed a statistically significant positive association between 8-hr ozone concentrations and mortality (this is very close to the 5% that would be expected purely by chance). Additionally, there was no association between the estimated effect of ozone on mortality for a city and the concentration of ozone in that city (see Figure 1 on page 28). EPA[5] estimates short-term mortality impacts based on Zanobetti and Schwartz[4] and the Smith et al. study.[1] However, the concentration response functions (CRFs) vary from negative to positive for the same city, depending on study selection, ozone averaging time, model specifications, and ozone season. In fact, most of these estimates are indistinguishable from zero. EPA uses a pooled nationwide estimate for their risk calculations, but the substantial heterogeneity between cities that ranges from positive to null or even negative (i.e., higher ozone concentrations correlated with reduced mortality) makes this nationwide estimate misleading and overestimates ozone risk.

The relationship between long-term ozone exposure and mortality has been investigated in at least 12 epidemiology studies.[6-17] When considering other potential causes of mortality, such as other air pollutants, only one of those studies[15] showed a statistically significant (but very small) effect of ozone on respiratory mortality. Interestingly, the effect only occurred at temperatures above 82 °F. It is known that very warm or very cold temperatures are associated with increased mortality.[18] Paradoxically, the increased mortality was not observed in U.S. regions with the highest ozone concentrations (e.g., Southern California) nor in areas with the highest number of respiratory deaths (e.g., the Northeast and industrial Midwest). Therefore, long-term mortality studies also demonstrate unexplained regional heterogeneity and mostly don't show associations between ozone and long-term mortality.

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Ecological epidemiology studies suffer from severe exposure measurement error.

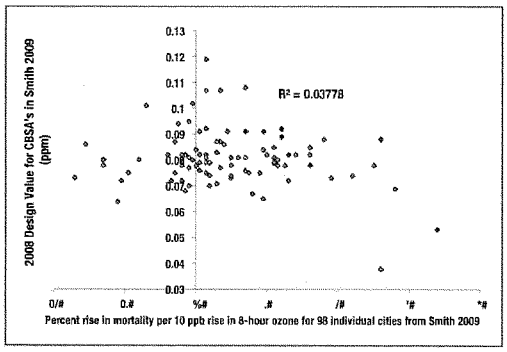

Figure 1. Association between 2008 Ozone Design Values and 8-hr Effect Estimates of Cities.[1]

Notes: Approximate mortality effect estimates (in percent rise per 10-ppb increase in 8-hr ozone) from different cities in Smith et al. (2009)[1] are plotted against the 2008 ozone design values (the 4th highest ambient ozone concentration, averaged over the years 2006–2008) for the matched core-based statistical area (CBSA). Purple points represent cities where mortality was not statistically associated with ambient ozone concentration and red points represent cities where mortality was statistically associated with ambient ozone concentration. The correlation coefficient for the relationship between the mortality effect estimates and the ozone design values (R^2) is given. If ozone and mortality were associated, one would expect an increase in mortality as ozone concentrations (design values) increase.

Ecological epidemiology studies suffer from severe exposure measurement error, because they assume that people are continuously exposed (i.e., 24 hours a day, 7 days a week) to the pollutant concentrations measured at the ambient monitors. In the case of ozone, this error is even more egregious because of the nature of ozone as a pollutant. Ozone is primarily an outdoor pollutant, with ventilation and indoor structures scavenging it and removing it from indoor air. The average American adult, senior citizen, and child will spend only 5.3%, 5.8%, and 7.9% of their time outdoors, respectively,[19] and so they will often not be exposed to ozone.

Studies[20,21] that have investigated ozone personal exposure and compared it to ambient concentrations have found that personal exposure is much lower than ambient exposure (i.e., approximately 10% of the measured ambient level), and that there may not even be a correlation between personal and ambient concentrations.[22,23] Even outdoor workers—whom EPA considers to be an at-risk population—experienced personal ozone concentrations that were only 60% of ambient concentrations.[24] Because of this personal exposure issue, the use of ambient ozone concentrations as a proxy for ozone exposure concentrations grossly overestimates their exposure, and therefore risk. This is particularly true of the short-term mortality data, where the subjects of the study (who are mostly elderly) are within days of death when the ambient concentrations are measured, and so are even less likely to be outdoors.

Altogether, this means that it is highly unlikely that the measured associations between ozone and respiratory mortality/morbidity are plausible, because the ozone exposures of the people in the population are so low. Were *all* of the hundreds of thousands of people in the epidemiology studies outside for 8 hours the day immediately before their deaths? In fact, this concern was raised by the Clean Air Scientific Advisory Committee (CASAC) ozone review panel, EPA's scientific advisors, in a June 5, 2006 letter[25] to EPA: "The Ozone Staff Paper should consider the problem of exposure measurement error in ozone mortality time-series studies. It is known that personal exposure to ozone is not reflected adequately, and sometimes not at all, by ozone concentrations measured at central monitoring sites...Therefore, it seems unlikely that the observed associations between short-term ozone concentrations and daily mortality are due solely to ozone itself." This difference between ambient ozone concentrations and personal exposures is critical for interpreting both epidemiological studies as well as clinical exposure studies.

Lung Function Decrements Unlikely to Be Adverse Below Current Standard

The TCEQ agrees with EPA that the ozone clinical data are best for setting the ozone standard. The American Thoracic Society (ATS) defines adversity as a significant decrease in FEV_1 with a significant increase in symptoms.[26] The ATS notes that FEV_1 decrements can vary by as much as 5% in healthy adults within a single day and by 15% or more from year to year. EPA defines a 10% FEV_1 decrement in a sensitive population as an appropriate adverse effect to protect against because it is mild and reversible. EPA asserts that two clinical studies, by Kim et al.[27] and Schelegle et al.,[28] justify lowering the current 75-ppb standard.

The Kim study reported statistically significant FEV_1 decrements (1.71%) in healthy young adults after 6.6 hours of 60-ppb ozone exposure while exercising heavily for 50 minutes out of every hour. However, these decrements are within normal variation and are not adverse by either the ATS criteria (i.e., because they were not statistically

associated with symptoms), or by EPA's criteria (i.e., because they were less than 10%).

The Schelegle study reported statistically significant FEV_1 decrements—5.34%, 7.23%, and 11.42%, respectively—associated with symptoms in healthy young adults after 6.6 hours exposure to 72-, 81-, and 88-ppb ozone, but not 63-ppb ozone, while exercising heavily for 50 minutes out of every hour. For 72-, 81-, and 88-ppb ozone, this exposure meets the ATS criteria for adversity, but at 72- and 81-ppb, it does not meet EPA's criteria of adversity until 88-ppb, which is above the current standard.

To claim that the lung effects at 60- and 72-ppb from the Kim study and the Schelegle study are adverse, even though the group mean FEV_1 decrements were not adverse, EPA notes that at 60-ppb, 3 of 59 study subjects had FEV_1 decrements greater than 10%, and at 72-ppb 5 of 31 individual participants had FEV_1 decrements greater than 10%. EPA is essentially basing its assertion of adverse effects occurring at concentrations lower than the current standard on these eight individual measurements.

On the other hand, 5 of 31 individual participants had *increases* in FEV_1 after 72-ppb exposure. The remaining participants showed little, if any, change in FEV_1, altogether confirming the known large inter-individual variability in lung function responses. Lung function returned to baseline for all of the participants within 1–4 hours after cessation of exposure.[28] As noted by Folinsbee et al.[29] and McDonnell et al,[30] the exposure regimens used in the Kim and Schelegle studies simulate work performed during a day of heavy manual labor in outdoor workers. This is an unrealistic exposure scenario for sensitive subpopulations, such as asthmatic children and elderly chronic obstructive pulmonary disease patients. In addition, these lung function decrements would be transient, reversible, would not interfere with normal activity, and would not result in permanent injury or respiratory dysfunction.[31]

Further, EPA evaluated these effects based on exposure concentration, not *dose* (i.e., a function of exposure concentration, time, and ventilation rate). The healthy young study participants exercised vigorously for the majority of their 6.6 hour

EPA has not demonstrated that lowering the ozone standard from 75-ppb to 70–65-ppb will result in a decrease in adverse lung function effects in the population.

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exposure, dramatically increasing their dose, and therefore response, as compared to a resting or moderate exercise ventilation rate for the same exposure concentration. Given these facts, EPA has not demonstrated that lowering the ozone standard from 75-ppb to 70–65-ppb will result in a decrease in *adverse* lung function effects in the population.

Evidence for Ozone Exacerbation of Asthma Is Insufficient

EPA investigated the epidemiology studies that show effects of ambient ozone concentrations on asthma health outcomes. Keeping in mind that these studies suffer from the same exposure measurement errors as the mortality studies, EPA showed that 21 of the 33 reported associations between ozone and asthma symptoms were not statistically significant, and those that were significant were not consistent with one another.[19] This result is quantified in the regulatory impact analysis,[32] where EPA shows that there is no statistically significant decrease in asthma exacerbations with a decreasing level of the ozone standard. EPA also states that emergency department visits and hospital admissions are robust to co-pollutant confounders, but does not mention investigation of confounding by pollen, which is a known, strong inducer of asthma.[33,34] Also, confounding by race, ethnicity, and household poverty are important considerations, as was shown in a recent study demonstrating that asthma incidence and morbidity is not more associated with urban (more polluted) areas, but rather with ethnicity and poverty.[35] Therefore, EPA should not have drawn the conclusion that ozone enhances asthma morbidity at ambient concentrations based on these data.

In conclusion, the TCEQ thinks the thoughtful integration of the scientific data does not support the assumption that lowering the ozone standard from 75 ppb to 70–65 ppb will result in measurable health benefits. The ecological epidemiology studies are critically flawed due to severe exposure misclassification because personal exposure to ozone is approximately 10% of ambient levels, dramatically reducing the ozone dose people actually receive. The clinical studies do not indicate anything beyond mild, reversible effects below 75 ppb. It is biologically implausible that 8-hr ambient ozone concentrations below 75 ppb would cause mortality when they do not cause mild effects. em

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A&WMA Contact:

Lisa Bucher
Managing Editor
Air & Waste Management Association
One Gateway Center, Third Floor
Pittsburgh, PA 15222
www.awma.org

P: +1-412-904-6023
F: +1-412-232-3450
E-mail: *lbucher@awma.org*

Texas Environmental Regulators Refute EPA's Ozone Claims

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by Simon Lomax
simon@energyindepth.org, Denver, Colo.

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A team of researchers at the Texas Commission on Environmental Quality (TCEQ) published an analysis showing alarmist claims about current ozone levels and public health simply do not add up. The TCEQ analysis challenges the U.S. Environmental Protection Agency (EPA) for using similar claims to support a drastic reduction in the federal ozone standard, which the manufacturing industry warns could be "the most expensive regulation ever issued by the U.S. government."

The TCEQ's analysis, published in the May 2015 edition of *EM Magazine*, responds to the EPA's proposal to lower the National Ambient Air Quality Standard (NAAQS) for ozone from 75 parts per billion (ppb) to

somewhere between 65 ppb and 70 ppb. The EPA claimed the proposal is "in line with the latest science" on air quality and public health. But according to the TCEQ's analysis, the EPA is relying on sources, methods and assumptions that are "very inconsistent," "misleading," "unrealistic," "critically flawed," and "implausible." An Energy In Depth analysis from earlier this year also showed how EPA inflated the health benefits of the rule to help justify its imposition.

The TCEQ analysis concludes that "the thoughtful integration of the scientific data does not support the assumption that lowering the ozone standard from 75 ppb to 70–65 ppb will result in measurable health benefits."

Meanwhile, activist groups such as the Natural Resources Defense Council and American Lung Association have been actively misrepresenting air quality trends as they campaign to drive the ozone standard even lower to 60 ppb. According to E&E News, these misrepresentations have been called out by state air quality regulators in at least four states, including Texas. At the same time, the NRDC and ALA are trying to justify their campaign by arguing further reductions in ozone will result in fewer asthma cases. But this argument ignores more than a decade of data showing asthma cases continuing to rise while ozone levels have fallen.

The EPA itself concedes "there is no statistically significant decrease in asthma exacerbations with a decreasing level of the ozone standard" in one of the supporting documents for the ozone proposal, the TCEQ says. Lost in the debate, according to the TCEQ analysis, is the fact that America's air is dramatically cleaner than it was decades ago:

> "We agree that respiratory effects can occur at the high ozone concentrations that were measured in the 1980s and 1990s. The pertinent question is whether lowering the ozone standard from 75 ppb to 70 or 65 ppb will result in a measurable reduction in these effects. In this short review, we consider some important concerns with EPA's conclusions about the health effects of ambient ozone concentrations. We conclude that EPA has not demonstrated that public health will measurably improve by decreasing the level of the ozone standard."

The TCEQ also notes that most areas of Texas "recorded their lowest ozone values ever in 2014," part of a trend that has seen ozone levels fall 29 percent in the Houston area and 21 percent in the Dallas/Fort Worth area during the past 15 years. These reductions have followed more than $1 billion in state spending since 2001, and "as the concentration of ambient ozone decreases, it becomes exponentially more difficult, and expensive, to attain further reductions," the TCEQ warns.

TCEQ Toxicology Division Director Michael Honeycutt, Ph.D. co-authored the analysis published in *EM Magazine*. In a follow-up interview with Energy In Depth, Honeycutt explained the TCEQ's critique of the EPA's proposal and the ozone-related claims of activist groups.

EID: The EPA says it's bringing the national ozone standard "in line with the latest science" and there will be significant health benefits, such as preventing 320,000 to 960,000 asthma attacks. What's your view?

Honeycutt: I don't think the EPA can really back those claims up with science, if you really look at the data.

There are epidemiology studies, there are toxicology studies and there are clinical studies. The EPA is basing a lot of their claims on epidemiology studies. The most common kind of epidemiology study regarding ozone is a retrospective study where a researcher will go into an area and find out how many hospital admissions there were on a certain day, and what the ozone concentration was on that day. Then, sometime later, the

researcher will measure hospital admissions and ozone concentrations again. If hospital admissions and ozone are both higher the second time, the researcher will say ozone was responsible for the increase.

But that assumes ozone was the only factor that changed. A number of studies have done that, and what you find is they're very inconsistent. Most studies that look at multiple factors like pollen or other pollutants, and controlled for those other factors, do not find an effect from ozone.

There are much bigger factors than ozone, so if you don't control for those factors, then you can't make the claim that ozone is causing increased asthma attacks. For example, the condition inside someone's house is a big factor. If there are pets inside, or cockroaches, those are very potent inducers of asthma attacks. Smoking is another example. Second-hand smoke is a big factor when it comes to asthma.

EID: In terms of health benefits, your paper says there's a big difference between reducing ozone from the levels experienced in the 1980s and 1990s and from the levels seen today. Why is that?

Honeycutt: Most of the studies cited by the EPA on outdoor ozone concentrations and health effects were conducted in the 1980s and 1990s, when peak ozone levels were much higher than they are now. Those peak levels were easily 50 percent to 100 percent higher than today's levels. The country has made huge strides in terms of reducing ozone since then. We've made such huge strides that there's not much ozone left to reduce, because we're approaching background levels in a lot of areas.

We are not starting at 100 parts per billion and going down to 90, like we were doing decades ago. That ten ppb decrease would be easy to attain. The EPA is talking about lowering the standard from 75 parts per billion down to 70 or 65. That five to 10 part per billion reduction would be extremely difficult to attain.

We recently submitted some work for publication that shows the actual doses of ozone your body gets from those three concentrations – 75, 70 and 65 parts per billion – aren't different from each other. So your body can't tell the difference between 75, 70 or 65 parts per billion.

However, lowering the standard down from 75 to 65 is huge in terms of what it takes to get there. In terms of implementation, the things we would have to do to get those ozone reductions are monstrous. Yet your body can't tell the difference between those concentrations. So it's not going to have an effect on human health.

EID: What does the data since the 1990s say about ozone and health conditions, such as asthma?

Honeycutt: Asthma cases and asthma attacks have increased while ozone concentrations have gone down. If they were linked, you would expect asthma incidences to go down, too. But they're not. They are continuing to rise, and that's just a huge clue that one does not have an impact on the other.

EID: So what's the basis for the EPA's conclusion that there will be health benefits from further reducing ozone levels?

Honeycutt: To answer that question, you have to wade through a couple thousand pages of text and hundreds of figures and I don't think most people actually do that. I think most people just rely on other people for their information. But we've actually read those documents and the studies they cited.

EPA's justification for the lower standard lies in the clinical data. In a study, 59 people were clinically exposed to 60 parts per billion while exercising. Only three of them were affected, which is not statistically significant. So EPA is going away from statistical methods and saying those three of 59 could represent sensitive people out in the public, and calling that an adverse effect. But using the statistics my son was

taught in high school, that's not statistically significant. Statistics is the hallmark of science.

Those three of the 59 who had the effect, it's an effect that goes away within an hour or so. So it's not an adverse effect. Even by the EPA's own definition, it's not an adverse effect. Yet, they are saying it is.

As for health benefits, to come up with a dollar figure, they look at mortality. That data is even worse in terms of reproducibility. In other words, one researcher will go into an area and find mortality associated with ozone concentrations, and another will go into the same area and won't. Interestingly, in areas of the country with the highest ozone concentrations – like Southern California – the majority of the studies don't find an association between ozone and mortality. If there were an association, you would expect it to be worse there, where there are higher ozone concentrations.

What we are really dealing with here is statistical noise. Effectively, there is no relationship between these low-level ozone concentrations and mortality. Almost every time, when you factor in other variables, the supposed effect of ozone goes away.

EID: Outside groups, such as the American Lung Association and the Natural Resources Defense Council, have made their own claims about air quality. As a public health official and environmental regulator, what do you think of those claims?

Honeycutt: They rely on old data and ignore the new data. For example, 2014 was a great year not only for Texas but across the country for ozone.

You have to look at this issue in context and as a whole. Our country is obese and getting more obese. We need kids to get out and play. In Texas, we have a program to get kids out from their TVs and computers and into the fresh air and sunshine and actually play. Because indoor air quality, as a general rule, is going to be worse than outdoor air quality.

On a typical summer day, even when we are issuing ozone alerts based on an 8-hour averaging time, overall the air quality outside is still better in general than air quality indoors. So, are we going to tell kids to stay indoors and breathe worse air instead of getting outside and playing during recess at school?

When these groups look at only one pollutant, they are missing the point. If they're concerned about health, they need to look at air quality in total, not just one pollutant. And that one pollutant, ozone, at the current health standard is not going to cause the health effects they claim.

EID: If the ozone standard is tightened, what kind of regulatory actions will it take to meet the standard, and how much control will the EPA have over what states do?

Honeycutt: Good question. A lot of states are going to have to ramp up and start doing State Implementation Plans to reduce ozone. And what they are going to find is industrial activity isn't the biggest contributor. It's the cars.

If it's at 65 parts per billion, it's going to take dramatic lifestyle differences, because we are going to have to get cars off the road. Even if you are talking about electric cars, that electricity has to come from somewhere, as in power plants, which have emissions of their own.

It's going to take no drive days, closing down drive-thru lanes and things like that. People think this is hyperbole, but if we are going to meet the deadline of a few years to meet the new standard, it's going to take dramatic lifestyle changes to reduce vehicle miles traveled. We're also going to have to regulate construction

activity. People aren't thinking about the ripple effect, and it's going to be dramatic.

On the level of control the EPA will have, if you ask the EPA, they will say "none, it's up to the states." The states are really in a horrible position. Individual states have to come up with a State Implementation Plan, but the EPA gets to approve the plan. And there are things EPA will approve and won't approve. They make us do what they want us to do with their approval or disapproval. That's how they control it – not directly, but indirectly.

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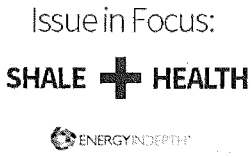

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Original article

Has reducing fine particulate matter and ozone caused reduced mortality rates in the United States?

Louis Anthony (Tony) Cox Jr. PhD [a,b,*], Douglas A. Popken PhD [a,b]

[a] Cox Associates and University of Colorado, Denver, CO
[b] NextHealth Technologies, Englewood, CO

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ABSTRACT

Purpose: Between 2000 and 2010, air pollutant levels in counties throughout the United States changed significantly, with fine particulate matter (PM2.5) declining over 30% in some counties and ozone (O_3) exhibiting large variations from year to year. This history provides an opportunity to compare county-level changes in average annual ambient pollutant levels to corresponding changes in all-cause (AC) and cardiovascular disease (CVD) mortality rates over the course of a decade. Past studies have demonstrated associations and subsequently either interpreted associations causally or relied on subjective judgments to infer causation. This article applies more quantitative methods to assess causality.
Methods: This article examines data from these "natural experiments" of changing pollutant levels for 483 counties in the 15 most populated US states using quantitative methods for causal hypothesis testing, such as conditional independence and Granger causality tests. We assessed whether changes in historical pollution levels helped to predict and explain changes in CVD and AC mortality rates.
Results: A causal relation between pollutant concentrations and AC or CVD mortality rates cannot be inferred from these historical data, although a statistical association between them is well supported. There were no significant positive associations between changes in PM2.5 or O_3 levels and corresponding changes in disease mortality rates between 2000 and 2010, nor for shorter time intervals of 1 to 3 years.
Conclusions: These findings suggest that predicted substantial human longevity benefits resulting from reducing PM2.5 and O_3 may not occur or may be smaller than previously estimated. Our results highlight the potential for heterogeneity in air pollution health effects across regions, and the high potential value of accountability research comparing model-based predictions of health benefits from reducing air pollutants to historical records of what actually occurred.

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Introduction: using data from natural experiments to understand causality

An aim of applied science in general and of epidemiology in particular is to draw sound causal inferences from observations. Students are taught to develop hypotheses about causal relations, devise testable implications of these causal hypotheses, carry out the tests, and objectively report and learn from the results to refute or refine the initial hypotheses. For at least the past two decades, however, epidemiologists and commentators on scientific methods and results have raised concerns that current practices too often lead to false-positive findings and to mistaken attributions of causality to mere statistical associations [1–4]. Formal training in epidemiology may be a mixed blessing in addressing these concerns, as concepts such as "attributable risk," "population attributable fraction," "burden of disease," "etiologic fraction," and even "probability of causation" are based on relative risks and related measures of statistical association and do not necessarily reveal anything about causation [5,6]. Limitations of human judgment and inference, such as confirmation bias (finding what we expect to find), motivated reasoning (concluding what it pays us to conclude), and overconfidence (mistakenly believing that our own beliefs are more accurate than they really are), do not spare health effects investigators. Experts in the health effects of particular compounds are not always experts in causal analysis, and published causal conclusions are often unwarranted, with a pronounced bias toward finding "significant" effects where none actually exists (false positives) [1,2,7,8]. This article considers ways to do better, borrowing ideas from econometrics and causal analysis. It illustrates them in the important practical domain of assessing public health risks from air pollution and estimating public health benefits from reducing it.

* Corresponding author. Cox Associates, 503 Franklin Street, Denver, CO 80218.
E-mail address: tcoxdenver@aol.com (L.A.(Tony) Cox).

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Dominici et al. [9] recently noted that "[A]nalyses of observational data have had a large impact on air-quality regulations and on the supporting analyses of their accompanying benefits, [but] associational approaches to inferring causal relations can be highly sensitive to the choice of the statistical model and set of available covariates that are used to adjust for confounding. … There is a growing consensus … that the associational or regression approach to inferring causal relations—on the basis of adjustment with observable confounders—is unreliable in many settings." The authors demonstrate via example that the choice of regression model can result in either statistically significant positive or statistically significant negative associations between air pollutant levels and mortality rates. This implies that implicit modeling choices can greatly affect—or even determine—the results presented to decision makers and the public. Table 1 provides some examples of important policy-relevant conclusions and doubts about their validity from the recent air pollution health effects literature.

To overcome this difficulty, Dominici et al. [9] proposed the use of quasi-experiments (QEs), or natural experiments, in which outcomes are compared between a treatment and control group, but without random assignment or other determination of the treatment status by the researcher. As an example, they cite a study reporting significantly lower mortality rates in the 6 years after a ban on coal burning in Dublin County, Ireland compared with the 6 years before the ban [22]. Their proposal to use QEs to better assess causal relations between pollution levels and health effects has been hailed by some [27] as "a paradigm-shifting solution." Yet, ever since QEs were first introduced in social statistics over half a century ago, expert practitioners [28] have recognized that "in many QEs, one is most often left with the question: 'Are there alternative explanations for the apparent causal association?' Such alternative explanations constitute threats to the internal validity of causal inferences for the studied populations that must be refuted before valid causal inferences can be drawn from QEs [29]. A long tradition of refutationist approaches to causal inference in epidemiologic methodology makes a similar point [30,31].

For example, to be valid, the conclusion that a ban on coal burning caused an immediate reduction in all-cause (AC) and cardiovascular mortality [23] would have had to refute alternative explanations. A study design including a relevant historical or contemporaneous control group (using a pretest–posttest design or a nonequivalent control group design, respectively, in QE terminology) would have allowed the elimination of noncausal explanations, such as that (a) mortality rates were already declining before the ban and continued to do so without significant change during and afterward for reasons unrelated to the ban (the "History" threat to internal validity, in QE terminology); or (b) mortality rates declined at the same rate in areas not affected by the ban as in areas affected by it. For the Dublin study, both possibilities (a) and (b) proved to be true, so that no valid conclusions about the impact of the ban on AC or cardiovascular mortality rates can be drawn [24,25]. Indeed, on reanalysis using relevant control groups, no effect of the ban on these outcomes could be detected [26]. Yet, as Dominici et al., rightly note, natural experiments occur frequently and, if properly analyzed, they can provide crucial policy-relevant insights into causality (or lack thereof) in observed exposure-response relations. In the United States, for example, geographic heterogeneity in the rates at which pollutant levels have declined in different regions has created many natural experiments for assessing the effects of these changes on public health over time.

To take advantage of these natural experiments, this article compares changes in PM2.5 and O_3 levels from 2000 to 2010 to corresponding changes in AC and cardiovascular disease (CVD) age-specific mortality rates over the same interval, for hundreds of counties in the 15 largest states in the United States. Treating county as the unit of observation, as in the Dublin study and many

Table 1
Some conflicting claims about health effects known to be caused by air pollution

Pro (causal interpretation or claim)	Con (counter interpretation or claim)
"Epidemiological evidence is used to quantitatively relate PM2.5 exposure to risk of early death. We find that UK combustion emissions cause ~13,000 premature deaths in the UK per year, while an additional ~6000 deaths in the UK are caused by non-UK European Union (EU) combustion emissions" [10].	"[A]lthough this sort of study can provide useful projections, its results are only estimates. In particular, although particulate matter has been associated with premature mortality in other studies, a definitive cause-and-effect link has not yet been demonstrated" [11].
"[A]bout 80,000 premature mortalities [per year] would be avoided by lowering PM2.5 levels to 5 μg/m^3 nationwide" in the U.S. 2005 levels of PM2.5 caused about 130,000 premature mortalities per year among people over age 29, with a simulation-based 95% CI of 51,000 to 200,000 [12].	"Analysis assumes a causal relationship between PM exposure and premature mortality based on strong epidemiological evidence… However, epidemiological evidence alone cannot establish this causal link." [13] Significant negative associations have also been reported between PM2.5 and short-term mortality and morbidity rates [14], as well as between levels of some other pollutants [15,16] (e.g., NO_2 and ozone) and short-term mortality and morbidity rates.
"Some of the data on the impact of improved air quality on children's health are provided, including … the reduction in the rates of childhood asthma events during the 1996 Summer Olympics in Atlanta, Georgia, due to a reduction in local motor vehicle traffic" [17]. "During the Olympic Games, the number of asthma acute care events decreased 41.6% (4.23 vs. 2.47 daily events) in the Georgia Medicaid claims file," coincident with significant reductions in ozone and other pollutants [18].	"In their primary analyses, which were adjusted for seasonal trends in air pollutant concentrations and health outcomes during the years before and after the Olympic Games, the investigators did not find significant reductions in the number of emergency department visits for respiratory or cardiovascular health outcomes in adults or children." In fact, "relative risk estimates for the longer time series were actually suggestive of increased ER [emergency department] visits during the Olympic Games" [19].
"An association between elevated PM10 levels and hospital admissions for pneumonia, pleurisy, bronchitis, and asthma was observed. During months when 24-hour PM10 levels exceeded 150 micrograms/m3, average admissions for children nearly tripled; in adults, the increase in admissions was 44 per cent." [20].	"Respiratory syncytial virus (RSV) activity was the single explanatory factor that consistently accounted for a statistically significant portion of the observed variations of pediatric respiratory hospitalizations. No coherent evidence of residual statistical associations between PM_{10} levels and hospitalizations was found for any age group or respiratory illness." [21].
"Reductions in respiratory and cardiovascular death rates in Dublin suggest that control of particulate air pollution could substantially diminish daily death … Our findings suggest that control of particulate air pollution in Dublin led to an immediate reduction in cardiovascular and respiratory deaths." [22].	Mortality rates were already declining long before the ban, and occurred in areas not affected by it. "Serious epidemics and pronounced trends feign excess mortality previously attributed to heavy black-smoke exposure" [24]. "Thus, a causal link between the decline in mortality and the ban of coal sales cannot be established" [25]. "In contrast to the earlier study, there appeared to be no reductions in total mortality or in mortality from other causes, including cardiovascular disease, that could be attributed to any of the bans. That is, after correcting for background trends, similar reductions were seen in ban and non-ban areas." [26].
"The results could not be more clear, reducing particulate air pollution reduces the number of respiratory and cardiovascular related deaths immediately" [23].	

Adapted from a study by Cox [5].

others where individual-level exposure data are not available, invites application of longitudinal designs and methods in which each county's history of pollution levels and mortality rates serves as its own control group for purposes of determining how subsequent changes in pollution are associated with subsequent changes in mortality rates [29]. Using repeated observations on the same counties over time also allows the effects of unmeasured (and possibly unknown) confounders to be largely controlled for as changes in pollutant levels and mortality rates are calculated—the basic strategy of panel data analysis [32]. The goal of our analysis is to understand the extent to which historical associations between pollutant levels and mortality rates reflect a clear causal relation, rather than merely coincident trends, or the effect of confounders, or modeling choices.

Table 2 lists several quantitative methods for causal hypothesis testing, modeling, and analysis that have been extensively developed and applied over the past six decades [5]. Various advantages of these techniques, compared with qualitative causal criteria [31] such as the traditional Hill considerations and other weight-of-evidence and associational methods, are well explained and illustrated [6] in the references for Table 2, along with their limitations [33]. Prominent among these advantages is the development of empirically testable implications of causal hypotheses, such as conditional independence implications, timing implications, information-theoretic implications, and exogeneity implications, with conditional probability distributions of some variables being determined by the values of others. These testable implications capture the asymmetry inherent in the notion of causation, unlike correlations or other symmetric measures of association. They can be tested statistically using publically available standard computer codes, such as those in R (www.r-project.org/) and Python/NumPy (www.numpy.org/). This enables different investigators, perhaps with very different prior beliefs, to reach the same conclusions from the same data. This points the way toward greater objectivity and definitiveness in determining via such tests the extent to which data do or do not support causal hypotheses, based on their testable implications.

Other reasons why modern methods of quantitative causal analysis should be (and increasingly are) included among current approaches in the epidemiologist's tool kit are discussed in modern epidemiology textbooks [31] and monographs [42] and in the references to Table 2. The purpose of this article is not to further review these methods but to apply those that are most useful to the air pollution and mortality rate records in the United States.

Data and methods

Cause-specific mortality rates, by county and age group, were downloaded from the Centers for Disease Control and Prevention Wonder "Compressed Mortality, 1999 to 2010" database [43]. To

Table 2
Some formal methods for modeling and testing causal hypotheses

Method and references	Basic idea	Appropriate study design
Quasi-experimental design and analysis [29]	Can control group comparisons refute alternative (noncausal) explanations for observed associations between hypothesized causes and effects, e.g., coincident trends and regression to the mean? If so, this strengthens causal interpretation.	Observational data on subjects exposed and not exposed to interventions that change the hypothesized cause(s) of effects.
Conditional independence tests [33,34]	Is hypothesized effect (e.g., CVD mortality rate) statistically independent of hypothesized cause (e.g., PM2.5 concentration), given (i.e., conditioned on) the values of other variables, such as education and income? If so, this undermines causal interpretation.	Cross-sectional data; can also be applied to multiperiod data (e.g., in dynamic Bayesian networks)
Panel data analysis [32,35]	Are changes in exposures followed by changes in the effects that they are hypothesized to help cause? If not, this undermines causal interpretation; if so, this strengthens causal interpretation. Example: are reductions in PM2.5 levels followed (but not preceded) by corresponding changes in CVD mortality rates?	Panel data study: collect a sequence of observations on same subjects or units of observation (e.g., counties) over time
Granger causality test [36]	Does the history of the hypothesized cause improve ability to predict the future of the hypothesized effect? If so, this strengthens causal interpretation; otherwise, it undermines causal interpretation. Example: can CVD mortality rates be predicted better from time series histories of PM2.5 levels and mortality rates than from the time series history of mortality rates alone?	Time series data on hypothesized causes and effects
Intervention analysis and change point analysis [37,38]	Does the best-fitting model of the observed data change significantly at or following the time of an intervention? If so, this strengthens causal interpretation. Do the quantitative changes in hypothesized causes predict and explain the subsequently observed quantitative changes in hypothesized effects? If so, this strengthens causal interpretation. Example: Do mortality rates fall faster in counties where pollutant levels fall faster than in other counties?	Time series observations on hypothesized effects, and knowledge of timing of intervention(s) Quantitative time series data for hypothesized causes and effects
Counterfactual and potential outcome models [39]	Do exposed individuals have significantly different response probabilities than they would have had if they had not been exposed? Example: do people have lower mortality risk after historical exposure reductions than they would have had otherwise?	Cross-sectional and/or longitudinal data, with selection biases and feedback among variables allowed
Causal network, path analysis and structural equations models of change propagation [40]	Do changes in exposures (or other causes) create a cascade of changes through a network of causal mechanisms (represented by equations), resulting in changes in the effect variables? Example: do relatively large variations in daily levels of fine particulate matter (PM2.5) air pollution create corresponding variations in markers of oxidative stress in the lungs?	Observations of variables in a dynamic system out of equilibrium
Negative controls (for exposures or for effects) [41]	Do exposures predict health effects better than they predict effects that cannot be caused by exposures? Example: do pollutant levels predict cardiovascular mortality rates better than they explain car accident mortality rates? If not, this weakens causal interpretation of the CVD associations.	Observational studies

Adapted from a study by Cox [5].

create a geographically diverse sample, mortality rates were extracted at the county level for the 15 largest states in the United States (California, Texas, New York, Florida, Illinois, Pennsylvania, Ohio, Georgia, Michigan, North Carolina, New Jersey, Virginia, Washington, Massachusetts, and Arizona) representing approximately 65% of the total US population. We extracted mortality rates (per 100,000 person-years) for all causes of death and then created three disease subcategories: (1) diseases of the circulatory system (*International Classification of Diseases, 10th revision codes* I00–I99), (2) all external causes of death (*International Classification of Diseases, 10th revision* codes V01–Y89), and (3) total disease-related mortalities (all causes of death excluding external causes). The dependent variables shown in subsequent tables thus included the following:

- CVRatePer100K—mortality rate (per 100,000 people per year) because of all heart and/or circulatory diseases
- ExtRatePer100K—mortality rate because of external causes (used as a negative control). (To investigate whether the methods used can detect causal known relationships, we also used a positive control in which a known causal effect was simulated, as discussed later.)
- ACRatePer100K—mortality rate because of all disease-related (nonexternal) causes.

Most of our analyses were restricted to ages 65+ years as they have the highest CVD mortality rates. Age was categorized as 65 to 74 years, 75 to 84 years, and 85+ years.

County-level air quality data for PM2.5 (daily 24-hour mean) and O_3 (daily maximum 8-hour moving average) were downloaded from the US Environmental Protection Agency Air Quality System (AQS) for all monitors located in each county ($n = 483$) of the 15 states listed previously [44]. Data were obtained for the years 2000 to 2010. The two pollutant measures were summarized as county-level annual averages in our analyses.

The mortality and air quality data were merged by state/county and year. The resulting merged data file contained data for 483 distinct counties from 2000 to 2010, although not all counties collected both ozone (O_3) and PM2.5 data for all years. These merged data files are freely available from the authors on request.

Statistical analysis methods

The methods in Table 2 that are most useful for the air pollution and mortality rate data sets just described include conditional independence tests, longitudinal comparisons of changes in death rates and changes in pollution levels, Granger causality tests, and negative controls comparing presumably noncausal associations between longitudinal changes in accident and other "external" (nondisease) death rates and changes in pollutant levels to associations between changes in disease mortality rates and changes in pollutant levels. These are described in the following paragraphs. All statistical computations were carried out using the Statistica 12.5 (https://support.software.dell.com/download-install-detail/5503316) statistical computing environment, with the exception of the Granger causality tests, described in the following paragraphs. Other methods in Table 2, such as change-point analysis and intervention analysis for an intervention that occurs at a single point in time (e.g., closing a steel mill or banning coal burning in Dublin) are less relevant for these data because both changes in PM2.5 and changes in mortality rates occurred gradually over a decade, rather than abruptly from before to after some intervention.

Association-based methods: correlation and regression

Although they are not methods of causal analysis, association-based methods such as correlation and regression analysis are widely used in air pollution health effects research [9]. We used these methods also to test whether applying them in this data set produced similar results to past studies. Intuitively, the absence of any association might be interpreted to suggest that causation is unlikely [45,46]. We used Pearson product-moment linear correlation coefficients and linear regression coefficients as measures of linear association because past research suggests an approximately linear association of PM2.5 and O_3 with mortality [47].

Conditional independence tests

If a statistically significant association between exposure and response variables is found, for example, based on linear correlation and regression tests, then an important screening test for potential causation is the conditional independence test: does a significant association remain even after conditioning on potential confounders, such as age or year? For example, if a significant association between PM2.5 and CVD mortality were hypothesized to be created by confounding by year (because both PM2.5 and CVD mortality rates declined with time, even if one did not cause the other), then one could condition on year (i.e., holding it fixed at a given value, such as 2010) and test whether the conditional association vanishes within the subset of records with that value (e.g., with year = 2010).

To avoid biasing results by manual selection of variables to condition on, we relied on automated backward stepwise variable selection in our multiple regression models. This is a standard—but deservedly controversial—technique. We do not advocate it for general use, as it over-fits models to data, producing excess false positives in simple settings. We therefore have used it only as a readily available automated approach that may be more familiar and easily available than alternatives such as Bayesian Model Averaging; but we have also verified the main conclusions using multiple disjoint random samples of the data (20% cross-validation) to guard against the defects of backward stepwise selection. The backward stepwise selection procedure uses successive F tests to determine whether dropping individual variables (e.g., O_3 concentration) from the set of potential explanatory variables significantly decreases the ability of the model to predict values of the dependent variable (e.g., CVD mortality risk). If not, that is, if the F test indicates that the dependent variable is conditionally independent of a potential explanatory variable (such as O_3), given the values of other variables in the model, then that variable is automatically dropped from the final set of explanatory variables. Despite its flaws, use of this technique reduces subjectivity in choosing explanatory variables. We used the default settings in *Statistica* (e.g., P values of .05 to define significant associations).

Correlations among changes over time

Perhaps the most important screening test we use for potential causality is examining whether changes in an exposure help to predict and explain changes in a response. A frequent confusion in epidemiology is to interpret the slope of a concentration-response relation as indicating the future change in response (e.g., mortality rates) that would be caused by a unit change in future exposure concentration. This is incorrect because many concentration-response associations are not entirely causal (e.g., because of confounders or modeling biases). Rather than using slopes of cross-sectional regression lines as proxies for causal impacts, we directly tested whether there were significant positive correlations and regression coefficients between longitudinal changes in county-specific PM2.5 and O_3 levels from 2000 to 2010 and corresponding longitudinal changes in county-specific and age-specific

mortality rates; and whether counties with more rapid declines in PM2.5 and O_3 had more rapid declines in mortality than those with slower declines, or where concentrations increased.

Granger causality and negative and positive controls

A more general approach than studying associations between changes in exposure concentrations and changes in mortality rates over a single time interval is to use time series analysis to test whether past values of exposure help to predict present and future mortality rates more accurately than they can be predicted from past mortality rates alone. This is the basic idea of the Granger causality test [36]. If the future of a mortality rate time series is conditionally independent of the past and present exposure time series, given the past and present mortality rate series, so that knowing exposure does not improve ability to predict future mortality rates, then exposure is not a Granger cause of mortality. The Granger causality test produces a *P* value for the null hypothesis that one time series does not improve prediction of another compared with using lagged values of the dependent variable itself.

We performed the Granger tests, using the *grangercausalitytests* function in the Python *statsmodels* module, for each county and age category combination described previously, with the restriction that the combination must have at least 10 consecutive annual values available for analysis. We tested lags of 1 to 3 years, as many previous studies suggest that reductions in PM2.5 and other pollutants lead to almost immediate reductions in mortality rates, for example, within as little as a few days, and certainly well within a year or two [18,22,47,48]. The Python Granger function *grangercausalitytests* provides *P* values for each of four separate test statistics (two based on the *F* distribution and two on the χ^2 distribution), all of which yield closely similar results. We evaluated the proportion of counties for which these tests produced a *P* value of 0.05 or less; random variation alone could explain this occurring in about 5% of counties. Significantly higher levels would be suggestive of a Granger causality effect.

In addition to formal test statistics, we also compared the statistical association between changes in exposures and changes in disease-related mortality rates, on the one hand, to the association between changes in exposures and changes in nondisease-related (external-cause) mortality rates, on the other. The external-cause mortality rates include deaths due to accidents and assaults, in which the observed temporal trends are presumably not caused by changes in pollution levels. Such negative controls test whether hypothesized causal associations are stronger than those presumed to be noncausal [41]. As discussed further later, we also simulated the effects of a positive causal relation between changes in pollution levels and changes in mortality rates. This simulation-based analysis served as a type of positive control to test whether sample sizes are large enough and whether the statistical methods we applied are powerful enough to detect such genuine causal effects if they are present. Finally, we briefly examined the geographic pattern of results to determine whether findings appeared to hold consistently in different parts of the United States.

Results

Descriptive statistics

Figure 1 shows trends in average pollution levels, population, and mortality rates for all counties from 2000 to 2010. For each time series, values are normalized by dividing by the value in 2000, so that all time series values in 2000 are defined as 1.0. PM2.5 and CVD mortality rates declined most steeply over this interval (two lowest curves), whereas population levels and external-cause mortality rates (e.g., from accidents) increased, perhaps reflecting a longer-lived aging population.

Figure 2 shows how the age-specific mortality curve, plotting annual deaths per capita versus age, has shifted downward over time. (The horizontal positions for the rates have been spread out to allow easy visualization of trends. Vertical bars indicate 95% confidence intervals (CIs) for the mean mortality rates but are very narrow because of the large sample sizes.) Clearly, age-specific mortality rates have declined for all age groups, but most for the older age groups.

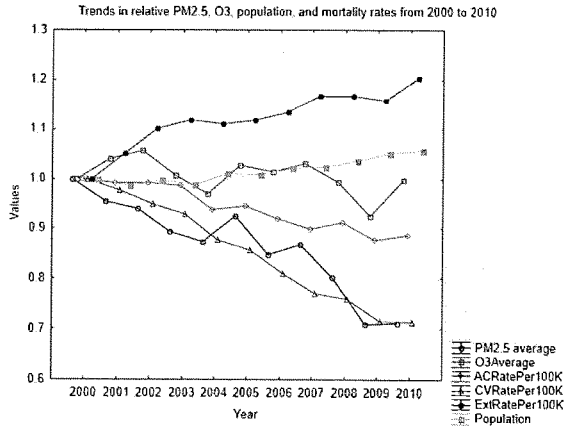

Fig. 1. Trends in relative values of pollutants, mortality rates, and population, 2000 to 2010.

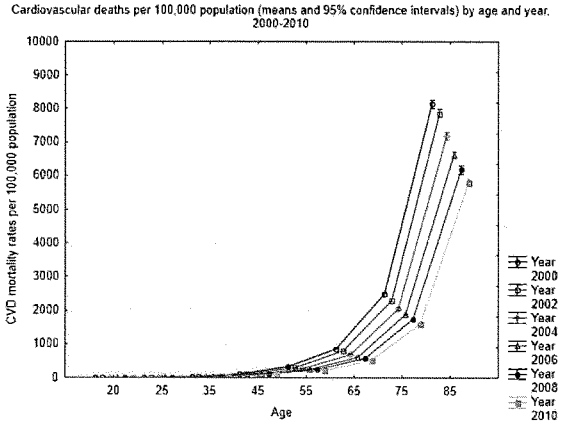

Fig. 2. Declines of age-specific CVD mortality rates over time (top curve is for year 2000, bottom curve is for year 2010).

Figure 3 shows analogous curves for age groups 55 to 64, 65 to 74, 75 to 84, and 85 years or older, abbreviated 55, 65, 75, and 85 years, respectively, for different average PM2.5 levels in 2000 (left) and 2010 (right). At all PM2.5 levels, age-specific mortality rates declined conspicuously from 2000 to 2010. In both years, mortality rates in the oldest age categories were higher at PM2.5 levels of 12 $\mu g/m^3$ than at 3 $\mu g/m^3$, suggesting a possible persistent positive association between PM2.5 concentrations and elderly mortality rates.

There was substantial geographic heterogeneity in both PM2.5 values and CVD mortality rates among the counties in this study, allowing the relation between them to be studied with considerable statistical power despite the smoothing effects of using county-level data [49]. PM2.5 average levels ranged from below 2 to above 20 $\mu g/m^3$, and cardiovascular deaths per 100,000 people per year ranged from close to zero (for younger age groups) to more than 10,000 deaths per 100,000 person-years (for the oldest age group in early years). Even for a single age group (e.g., 75–84-

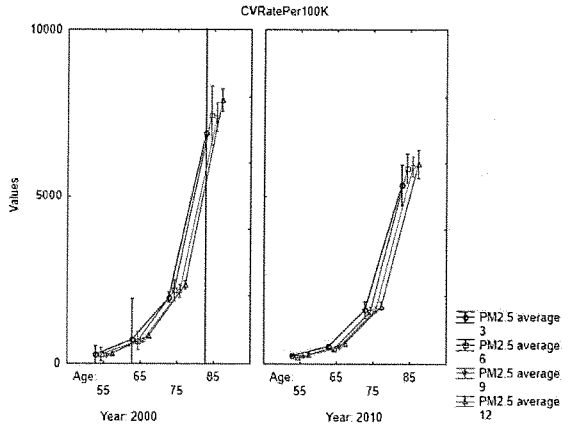

Fig. 3. Decline of older age-specific mortality rates over time (left panel is for year 2000, right panel is for year 2010) for counties with different average PM2.5 levels (microgram per cubic meter).

Bivariate histogram for CVD mortality rate (per 100,000 people per year) and PM2.5 (average micrograms per cubic meter) for people aged 75-84 in 2010

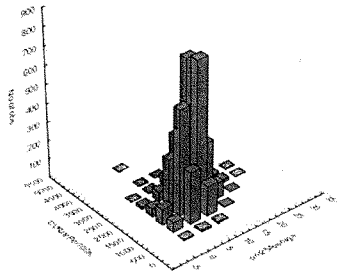

Fig. 4. There is substantial geographic heterogeneity in PM2.5 levels and CVD mortality rates even within a single age group and year (here, 75–84 year olds in 2010).

year-olds) and a single year (2010), there is a greater than fivefold variation in CVD mortality rates and a more than eightfold variation in average PM2.5 levels among counties as shown in Figure 4.

Results on statistical associations between pollutant levels and mortality rates

Table 3 shows the Pearson correlation coefficients between PM2.5 and O_3 levels, county population sizes, and AC, cardiovascular, and external-cause (nondisease) mortality rates, holding year and age fixed at 2010 and 75 to 84 years, respectively. Similar correlations hold for other years. All off-diagonal correlation coefficients in Table 3 are statistically significant from zero ($P < .05$) except for the −.09 correlation between PM2.5 levels and nondisease mortality rates (ExtRatePer100k). Specifically, Table 3 shows the following significant associations:

- PM2.5 and O_3 concentrations are positively associated with each other (correlation $r = 0.28$)
- Both PM2.5 and O_3 concentrations are positively associated with both AC and cardiovascular mortality rates.
- O_3 is also positively associated with nondisease mortality rates but PM2.5 is not. (All positive correlations in Table 3 are significant, but the −0.09 numbers are not.)
- Population size of a county is positively associated with PM2.5 and is negatively associated with O_3 and with all mortality rates.
- All mortality rates (disease related and nondisease related) are positively associated with each other, but negatively associated with population size.

The associations in Table 3 may or may not be causal, but they are not explained by coincident historical trends (since the year is held fixed at 2010) nor by confounding by age category because the age category is also held fixed at 75 to 84 years. Whether confounding by education, income, temperature, or other variables might account for some of these associations—for example, if mortality rates and PM2.5 are both elevated on cold days or in colder regions; or if lower-income families tend to live in more polluted areas and also to have higher age-specific mortality rates irrespective of location—cannot be determined from the exposure and mortality rate data alone.

In multiple linear regression modeling of the association between explanatory variables and elderly (75 to 84-years-old) CVD mortality rate using automated backward stepwise variable selection via F tests, only the regression coefficient between PM2.5 and CVD mortality rate, but not O_3 and CVD mortality rate, remains significant. Thus, there is a positive association between PM2.5 levels and CVD mortality rates among the elderly that is not explained by coincident historical trends nor by confounding by age or population or O_3; but the correlations between O_3 and CVD mortality rates and between O_3 and all-disease mortality rate, vanish after conditioning (via multiple linear regression) on PM2.5 and population size for all disease-related mortalities. In short, PM2.5, but not O3, passes this conditional independence test for

Table 3
Pearson correlations between pairs of exposure and response variables for elderly (aged 75–84 years) people in 2010

Variable	Correlations between county-specific average PM2.5 and O_3 concentrations and mortality rates for 75–84-year-olds in 2010						
	Means	PM2.5 average	O_3 average	Population	ACRatePer100K	CVRatePer100K	ExtRatePer100K
PM2.5 average	9.16	1.00	**0.28**	**0.14**	**0.17**	**0.22**	−0.09
O_3 average	0.04	**0.28**	1.00	**−0.20**	**0.30**	**0.014**	**0.20**
Population	15,783.16	**0.14**	**−0.20**	1.00	**−0.33**	**−0.15**	**−0.34**
ACRatePer100K	4855.06	**0.17**	**0.30**	**−0.33**	1.00	**0.72**	**0.38**
CVRatePer100K	1614.13	**0.22**	**0.14**	**−0.15**	**0.72**	1.00	**0.19**
ExtRatePer 100K	137.28	−0.09	**0.20**	**−0.34**	**0.38**	**0.19**	1.00

Off-diagonal correlations in bold differ from 0 at the conventional 5% significance level ($P < .05$).

Table 4
County-specific average PM2.5 concentration is significantly positively associated with county-specific CVD mortality rates across all age categories and years

$N = 21{,}613$	Regression summary for dependent variable: CVRatePer100K ($R = 0.78$, $R^2 = 0.605$, adjusted $R^2 = 0.605$)					
	b^*	Standard error of b^*	b	Standard error of b	$t(21{,}608)$	P value
Intercept	—	—	**114,927.7**	**7043.87**	**16.3160**	**.000000**
Year	**−0.08**	**0.0046**	**−60.3**	**3.51**	**−17.2049**	**.000000**
Age	**0.81**	**0.0048**	**120.0**	**0.70**	**170.4133**	**.000000**
PM2.5 average	**0.04**	**0.0047**	**33.6**	**3.54**	**9.4979**	**.000000**
Population	**0.08**	**0.0048**	**0.0**	**0.00**	**17.4577**	**.000000**

Lower and upper 95% confidence limits, −95% CL and +95 CL, approximated as $b \pm 1.96 \times$ standard error of b.
Off-diagonal correlations in bold differ from 0 at the conventional 5% significance level ($P < .05$).

being a potential causal driver of elderly mortality rates. Similarly, for all age categories and years, PM2.5 average levels, but not O_3 levels, help to predict CVD mortality rates.

Table 4 shows the results of a multiple linear regression with backward stepwise variable selection; results were also confirmed in multiple disjoint random samples (20% cross-validation samples). The b^* column contains standardized regression coefficients (scaling each variable in terms of standard deviations) and the b column contains the unstandardized regression coefficients. As expected, year is negatively associated with CVD mortality risk, and age is positively associated with CVD mortality risk. Age is quantitatively by far the most important predictor of risk. PM2.5 average concentration makes the smallest, but still highly statistically significant ($P < .000001$), contribution to predicting CVD values. Population (specific to each county and age group) is also a significant predictor of CVD risk. Results for all-disease–related mortality (AC) risks are similar, with the standardized regression coefficient for PM2.5 increasing to 0.06, with the exception that both O3 and population size are significantly negatively associated with AC mortality rates (standardized regression coefficients of −0.12 for population and −0.02 for O_3). Interpretively, the coefficient for PM2.5 in Table 4 ($b = 33.6$) indicates that CVD mortality risk increases by 33.6 deaths per 100,000 person-years for each microgram per cubic meter increase of PM2.5 in air, assuming other variables are held constant. The mean CVD mortality rate averaged over all age categories and years is 1931.6 deaths per 100,000 person-years, so a change in PM2.5 of 10 $\mu g/m^3$ corresponds to a change in CVD mortality rate of approximately (10 $\mu g/m^3$) × (33.6 deaths per 100,000 person-years per $\mu g/m^3$)/(1931.6 deaths per 100,000 person-years) = 336/1931.6 ≈ 17.4%. This slope factor could be described as a 17.4% increase in mortality per 10 $\mu g/m^3$increase in PM2.5 concentration.

Results on correlations between changes in variables over time

Tables 5 and 6 show correlations between changes in AC mortality, CVD mortality, and nondisease mortality, respectively (the columns), and different possible predictors (the rows), for all counties included in the study. Table 5 presents results for the 75- to 84-year-old group, and Table 6 repeats the analysis for all age groups.

For the 75- to 85-year-old age category, changes in AC and CVD mortality rates are significantly positively correlated with each other, as expected, and with changes in external-cause mortality rates. They are significantly negatively correlated with increases in population. Neither is significantly correlated with changes in PM2.5 or changes in O_3. For all age groups, changes in PM2.5 are significantly but weakly positively correlated with changes in

Table 5
Pearson correlations between changes in variables from 2000 to 2010 for elderly (aged 75–84 years) people

Variable	Correlates of changes in mortality rates from 2000 to 2010 for 75–84-year-olds		
	Delta AC mortality	Delta CVD mortality	Delta external rate
Delta PM2.5	−0.07	−0.08	0.04
Delta O_3	0.03	0.03	0.06
Delta population	**−0.59**	**−0.56**	**−0.44**
Delta AC mortality	1.00	**0.99**	**0.81**
Delta CVD mortality	**0.99**	1.00	**0.79**
Delta external rate	**0.81**	**0.79**	1.00
PM2.5 average	−0.10	−0.12	−0.10
O_3 average	−0.04	−0.04	**−0.18**
Population 2010	0.07	0.07	0.06
ACRatePer100K	−0.05	−0.07	−0.07
CVRatePer100K	0.06	0.06	−0.02
ExtRatePer100K	−0.16	**−0.17**	0.14

Off-diagonal correlations in bold differ from 0 at the conventional 5% significance level ($P < .05$).

external-cause mortality rates. Changes in O_3 are significantly positively correlated both with changes in AC mortality rates and with changes in CVD mortality rates. Increases in population are significantly correlated with reductions in all mortality rates.

In multivariate analysis using multiple linear regression, changes in both AC and CVD mortality rates are conditionally independent of changes in both PM2.5 and O_3, given changes in population size, changes in external-cause mortality rates, and age in 2010. These three explanatory variables are automatically selected by backward stepwise variable selection, whereas changes in PM2.5 and O_3 are dropped as they provide no additional information useful for predicting the AC or CVD mortality rates. Thus, by this criterion, changes in PM2.5 and O_3 levels do not help to predict or explain changes in CVD or AC mortality rates, undermining a causal interpretation of the positive associations between them in the cross-sectional analysis in Table 3.

Other, perhaps unexpected, correlations between changes in variables in Table 6 include a strong positive correlation (0.59) between changes in external-cause mortality rates and changes in CVD mortality rates; and positive correlations between baseline levels of mortality rates and changes in their levels. Thus, relatively high-risk areas in 2000 tended to become more risky by 2010. As expected, older age categories saw relatively large reductions in disease mortality rates (but increases in nondisease mortality rates).

Table 6
Pearson correlations between changes in variables from 2000 to 2010 for all age groups

Variable	Correlates of changes in mortality rates from 2000 to 2010		
	Delta AC mortality	Delta CVD mortality	Delta external rate
Delta PM2.5	−0.00	−0.01	**0.06**
Delta O_3	**0.06**	**0.08**	0.02
Delta population	**−0.15**	**−0.15**	**−0.17**
Delta AC mortality	1.00	**0.95**	**0.69**
Delta CVD mortality	**0.95**	1.00	**0.59**
Delta external rate	**0.69**	**0.59**	1.00
Age 2000	−0.03	**−0.14**	**0.24**
PM2.5 average 2000	−0.02	−0.04	−0.04
O_3 average 2000	**−0.05**	**−0.07**	−0.05
ACRatePer100K 2000	**0.147**	−0.01	**0.04**
CVRatePer100K 2000	**0.23**	0.02	**0.04**
ExtRatePer100K 2000	**0.21**	−0.03	**0.56**

Off-diagonal correlations in bold differ from 0 at the conventional 5% significance level ($P < .05$).

Granger causality test and control results

Granger tests using standard time series regression models with maximum lags of 1, 2, or 3 years show that, for all age categories tested (65–74, 75–84, and 85 years or older) and for all mortality outcomes considered (CVD, all-disease, and external-cause mortality rates), both PM2.5 and O_3 histories are not useful for predicting mortality rates in most (over 90%) of the counties. PM2.5 and O_3 have predictive coefficients for CVD and all-disease mortality rates that are significantly different from zero in only a small minority of counties (7% for AC mortality, 6% for CVD mortality, and 7% for external-cause mortality, which was used as a negative control), roughly consistent with, although slightly higher than, the 5% false-positive error rate that might occur by chance due to the 5% significance level used in the tests. (For 483 counties and a true false-positive rate of 5%, there is about a 26% probability that the sample proportion of false positives would exceed 6% or be less than 4% by chance.) Perhaps more importantly, the negative control (external-cause mortalities) also shows that O_3 and PM2.5 histories on time scales of several years are not Granger-causes of CVD or all disease-related deaths any more than they are of external-cause deaths. For example, the age group and lag with the highest fraction of Granger-positive associations between PM2.5 and CVD rate is the 85+ years age group with a lag of 1 year: this fraction is 11%. But the corresponding fraction for Granger-positive associations between PM2.5 and external-cause mortalities is greater, at 14%. Thus, the Granger tests do not support a conclusion of a genuine causal effect, that is, positive results clearly above what might occur by chance and what is found for the negative controls.

Given the well-known limitations of *P* values and significance testing, it may also be useful to consider that, if pollutant levels were detectable causal drivers of increased mortality rates at recent historical levels, then this causal relation should have been visible in a large majority of counties. The fractions in Table 7 might all be expected to exceed 50% in the presence of clear Granger causality, that is, most counties should have shown evidence of a Granger-positive association between PM2.5 and mortality rates caused by them. Intuitively, as suggested by Figure 1, although pollutant levels declined substantially in most counties from 2000 to 2010, declines in CVD and AC mortality rates did not appear to proceed more quickly when PM2.5 declined quickly than when it did not or than when it increased. The Granger test results confirm this suggestion at the level of individual counties and for time lags of 1 to 3 years.

Positive controls: does absence of evidence constitute evidence of absence?

Might the absence of a significant association between county-specific changes in PM2.5 levels and changes in mortality rates between 2000 and 2010, shown in Tables 5 and 6 and in corresponding multiple linear regression models, be due to limited statistical power to detect changes in the presence of substantial heterogeneity and variability in the data? To check the statistical power of these methods, we modified the observed data by adding a known "signal"—a 2.6% decrease in CVD mortality rate per microgram per cubic meter decrease in PM2.5 concentration based on the slope estimate of Lepeule [47]. We then tested whether this known signal is detectable through the noise in the data using the methods we have applied.

Table 8 shows the results of multiple linear regression applied to the artificial data set with a simulated known causal impact of exposure. The simulated effect of changes in PM2.5 on changes in CVD mortality rates based on the 2.6% slope coefficient for change in mortality rate per microgram per cubic meter change in PM2.5 was successfully detected. (All predictors remain significant using backward stepwise variable selection.) This suggests that an effect of this size would probably have been detected in the real data if it had been present. This type of positive control gives some reassurance that the substantial variability and heterogeneity in county-level time series data would not hide causal effects of the sizes that have sometimes been estimated from standard associational (regression-based) models by assuming that slope coefficients are causal, if such causal effects were actually present.

Finally, we briefly examined the geographic distribution of associations. Previous investigators have reported that chronic exposure to PM2.5 is associated with mortality in the eastern and central regions of the United States, but not in the Western region [50]. In our data set, for the main elderly population (75–84-year-olds) in 2010, PM2.5 was statistically significantly positively correlated with CVD mortality in Florida and overall in pooled data from counties in all states. It was statistically negatively correlated with all-disease (AC) mortality rate in Arizona and statistically positively correlated with AC mortality rate in Florida and overall. Otherwise, state-specific correlations in 2010 were not individually statistically significant at the conventional 0.05 significance level and were a mix of nonsignificant positive and negative correlations with no obvious geographic distribution.

Discussion and conclusions: caveats for causal interpretations of regression coefficients

The epidemiologic and risk assessment literature on human health effects of air pollution contains dozens of studies that attribute reductions in mortality risks to reductions in air pollution levels and that estimate the slope of the concentration-response association between exposures to pollutants and corresponding mortality rates [12,20,22,47,51,52]. The work reported here

Table 7
Fractions of counties with positive Granger causality tests for PM2.5 and AC, CVD, and external-cause mortality rates, for different age groups and lags (1–3 years)

Age/lag	AC mortality rate	CVD rate	External rate
65	**0.06**	**0.06**	**0.07**
1	0.09	0.08	0.10
2	0.04	0.05	0.10
3	0.05	0.05	0.02
75	**0.08**	**0.06**	**0.06**
1	0.10	0.08	0.05
2	0.08	0.06	0.08
3	0.04	0.05	0.06
85	**0.08**	**0.06**	**0.08**
1	0.15	0.11	0.14
2	0.06	0.03	0.09
3	0.04	0.03	0.01
Overall	0.07	0.06	0.07

Results averaged over all three lags are shown in bold.

Table 8
Multiple linear regression detects simulated PM2.5 effects on mortality rates of the sizes predicted from previously published regression slope coefficients [47]

$N = 1425$	Regression of CVD mortality rate with simulated effect of PM2.5 $R = 0.76465$, $R^2 = 0.58469$, adjusted $R^2 = 0.5838$ $F(3, 1421) = 06966.84$, $P < .0000$, standard error of estimate: 11/8.0					
	b^*	Standard error of b^*	b	Standard error of b	$t(1421)$	P value
Intercept	—	—	**541.5**	**74.8**	**7.2**	**.000**
Delta PM2.5	**0.04**	**0.017**	**37.9**	**16.5**	**2.3**	**.022**
CVRatePer199K 2000	**−0.75**	**0.017**	**−0.5**	**0.0**	**−43.9**	**.000**
Delta population	**−0.16**	**0.017**	**−0.0**	**0.0**	**−9.2**	**.000**

Lower and upper 95% confidence limits, −95% CL and +95 CL, approximated as $b \pm 1.96 \times$ standard error of b.

contributes a new data set to this literature. It supports previous findings of positive PM2.5-mortality associations based on PM2.5 (and O_3) and age-specific mortality data, in county-level data from the 15 largest US states over the years from 2000 to 2010. Confirming earlier studies such as Lepeule et al. [47], we found a statistically significant positive association between PM2.5 (and also O_3) concentrations and both all-disease related and CVD mortality rates, as well as a significant positive association between O_3 and external-cause mortalities, which we used as a negative control (Tables 3 and 4).

However, such associations between historical levels of exposure and response variables do not necessarily describe causal relations. In our examination of historical changes in pollutant levels and mortality rates (Tables 5 and 6 and multiple regression models and Granger causality tests), actual changes in PM2.5 and O_3 levels over time did not significantly help to predict or explain corresponding observed changes in all-disease or CVD mortality rates over time. This argues against facile causal interpretations of the significant statistical associations between pollution levels and mortality rates. Such causal interpretations of slope coefficients are commonly made in air pollution health effects (and other) epidemiology. For example, the study of Lepeule et al. [47], updating the influential Harvard Six Cities Study, offers the important causal interpretation that "These results [i.e., that each 10 $\mu g/m^3$ increase in PM2.5 was associated with a 26% increase in cardiovascular mortality risk] suggest that further public policy efforts that reduce fine particulate matter air pollution are likely to have continuing public health benefits." But such policy-relevant causal conclusions are unwarranted if the exposure-response association discussed is not a causal relation, and if the changes referred to are only the hypothetical ones implied by a slope coefficient, rather than actual changes in the levels of exposure and mortality time series.

Study limitations

Our study and conclusions have several limitations. Although our analysis of county-level data does not provide evidence that the roughly 30% reduction in PM2.5 levels from 2000 to 2010 (Fig. 1) caused any detectable effect on disease-related mortality rates, it remains possible that such an effect was present that is too small to detect. For example, if each 10 $\mu g/m^3$ change in PM2.5 concentration causes only a 1.03% change in CVD mortality rate, as estimated by Dai et al. [52], then the power of our data set would not be great enough to distinguish this from zero. In addition, like many other studies, our analysis lacked individual-level exposure data. Our basic units of observation are death counts, by cause, within age categories, years, and counties; finer resolution would require a different data set. Age and death are available at the individual level, making this a semi-individual design [53], rather than a purely ecological design; but other individual covariates are not available. On the other hand, the fact that we follow the same counties over multiple years contributes one of the strengths of a panel study design: the effects of fixed (or slowly changing) possible confounders or effect modifiers, such as differences in income or education or regional climate, cancel out when changes (deltas) in mortality rates are calculated for the same locations in successive years. In addition, our study substantially meets several criteria [49] for useful ecological studies: marked variation across geographic units (counties); unlikely confounding (due to the longitudinal panel design, in which counties serve as their own controls for purposes of subtracting out fixed effects of confounders when computing changes over time); opportunities to include negative controls (external-cause mortalities); and simulated positive controls (via simulation of postulated causal impacts).

A remaining question is, if the significant associations between PM2.5 and O_3 on the one hand and CVD and AC mortality on the other are not due to a causal relationship between pollutant exposure and disease, then what does explain them? Our analyses have ruled out coincident trends (because the associations hold even within single years) and chance (because the correlation and regression coefficients reported are statistically significant), as well as fixed confounders (because of the panel design) as plausible explanations. Possible confounders that might covary with exposure levels over time and thus offer explanations, range from copollutants to temperature (e.g., if very hot or very cold areas have higher levels of PM2.5, perhaps due in part to coal-fired power plants that power air conditioning or heating, and independently have higher mortality rates). Attaching more variables to the county-specific mortality rate and pollution level data, such as daily temperature (high and low), could potentially help to answer this question. But at present, the answer is unknown.

Finally, by focusing on changes in annual average pollutant levels and mortality rates at the individual county level, we have foregone opportunities to model or "adjust" for effects of seasonality, more granular spatial variations, and measured or latent confounders. Dominici et al. [9] suggest that it is not uncommon for different regression models based on different modeling choices and assumptions to produce very different answers. For example, regression coefficients that are significantly positive in one model may be significantly negative in another depending on which variables and interaction terms are included. By using several different approaches (conditional independence tests, Granger tests, positive and negative controls, and automated variable selection) and relatively simple measures of association (correlations and linear regression coefficients, fractions of counties with Granger-positive associations) computed using standard widely available software for all tests, we have sought conclusions that are more robust and objective, minimizing opportunities for manual intervention to shape the results.

Comparisons with conclusions from other studies

The coefficient for PM2.5 in Table 4 ($b = 33.6$), corresponding to a 17% increase in mortality per 10 $\mu g/m^3$ increase in PM2.5 concentration, is well within the range of other recent association-based estimates based on regression relations. For example Dai et al. [52], in a study of 75 US cities between 2000 and 2006, reported a 1.03% (95% CI: 0.65%–1.41%) increase in CVD mortality with each 10 $\mu g/m^3$ increase in PM2.5 averaged over a 2-day period. In their update of the Harvard Six Cities Study, Lepeule et al. [47] estimated a 26% (95% CI: 14%–40%) increase in CVD mortality for each 10 $\mu g/m^3$ increase in PM2.5, averaged over the three prior years. Thus, our value of 17.4% falls between these two estimates and is within the 95% CI of the Lepeule et al. [47] study. Some other recent studies have not detected clearly significant associations between PM2.5 levels and most CVD or AC mortality rates [54] or found no association between local trends in mortality and local trends in yearly average PM2.5 after adjusting for national trends and local differences [55]. For the US county data set we have analyzed, our main conclusions are that (a) there are statistically significant associations between PM2.5 and both all-disease and CVD mortality risks; but (b) there is no clear evidence of a causal relation between PM2.5 and O_3 concentration levels and mortality rates. These results differ both from studies that do not find clear associations and also from some authoritative opinions, including views in an Expert Elicitation Study [56], that statistically significant exposure-response associations between PM2.5 and CVD mortality are probably causal.

Although our results do not support some previous expert judgment-based assessments of causality, this is consistent with studies showing that firmly expressed opinions of key experts [23] about air pollution health effects associations being causal have later proved to be unwarranted [26]. The practice of applying human judgment using weight-of-evidence considerations to measures of association (such as relative risks, odds ratios, population attributable fractions, burden-of-disease estimates, and regression coefficients) to determine whether an inference of causality is supported has been widespread in epidemiology, although some methodologists [57] have argued that logically valid causal inferences cannot be derived from such associations in purely observational studies without interventions. This makes natural experiments, where interventions such as pollution reductions occur differently for different subpopulations, potentially valuable aids to understanding causation.

The calculations in this article illustrate that a significant positive association between historical levels of PM2.5 and historical mortality rates does not necessarily provide a sound basis for inferring a positive association between changes in levels of PM2.5 and changes in mortality rates. This methodological point confirms the importance of using QEs or other appropriate formal methods of causal study design and analysis (Table 2) to draw causal conclusions. Free publicly available data sets such as the U.S. Environmental Protection Agency and Centers for Disease Control and Prevention data sets used in this study and free publicly available software such as R and Python now make it relatively easy to test whether changes in PM2.5 and O_3 help to predict changes in disease mortality rates on time scales from days to over a decade. The data files and software scripts used in this study are freely available from the authors on request. We hope that this will encourage others to investigate further the relation between longitudinal changes in pollutant levels and changes in mortality rates and to clarify the crucial distinction between positive statistical associations and evidence of causality in air pollution health effects epidemiology.

Acknowledgments

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DOCUMENTS SUBMITTED BY REPRESENTATIVE KNIGHT

The Center For
Regulatory Solutions

New Report: State Regulators Push Back on EPA's Proposed Ozone Rules

06/11/2015

Washington D.C., – Karen Kerrigan, President of the Center for Regulatory Solutions (CRS), a project of the Small Business & Entrepreneurship Council, highlighted a new report released today by the Association of Air Pollution Control Agencies (AAPCA) that surveyed states views of the Environmental Protection Agency's (EPA) proposed revision to the National Ambient Air Quality Standards (NAAQS) for ground-level ozone. In November 2014, the EPA proposed new regulations to tighten the standards for ozone by up to 20 percent by October 1, 2015. As CRS has reported, state regulators have become more vocal in expressing significant concerns about EPA's proposal.

"The numerous concerns raised by state regulators in this report regarding EPA's proposed ozone standard shows once again that the Obama administration needs to listen more closely to state and local officials before tightening the standard," said Karen Kerrigan, President of the Small Business and Entrepreneurship Council. **"It is because of collaboration at the state level that we have made such tremendous progress over the past thirty years cleaning up our air. Small business is a proud partner in this effort. But when Washington steps in and takes drastic action that undercuts these efforts, it only undermines the goodwill and continued progress we have made. Hopefully, the Obama administration will take a good look at this report and see that the government may in fact be hurting, not helping, to achieve clean air progress by imposing a tighter ozone standard."**

For the past three decades, states have worked extremely hard to cut their ozone levels with great success. The low-hanging fruit has already been picked, so any further reductions will be extremely challenging to meet. Indeed, in some localities, especially in the western United States, the new standards are approaching background levels of ozone – in other words, the level that occurs due to factors beyond local control.

According to the AAPCA report, a majority of states have raised concerns about their ability to meet the new standards, due in large part to background levels of ozone. While EPA claims that their "exceptional events exclusion" is responsive to this concern, many states believe that EPA's tools to address these concerns are limited and inadequate. These concerns are spread throughout the U.S. and are not limited to a specific geographic region.

A sample of state's concerns are below:

- **Ohio:** Ohio EPA does not agree that the new ozone standard should be mostly comprised of background ozone itself. As a new standard becomes closer to background levels, states have the ability to develop practical control strategies to meet the standard.

- **West Virginia:** NAAQS should not be set at background levels at which there are no realistic compliance options.

- **Florida:** EPA should consider whether natural background concentrations would preclude compliance with EPA's proposed standards... For example, EPA estimates that 70 to 80 percent of the seasonal mean ozone levels in Florida are attributed to background contributions.

Regarding EPA's "exceptional events exclusion":

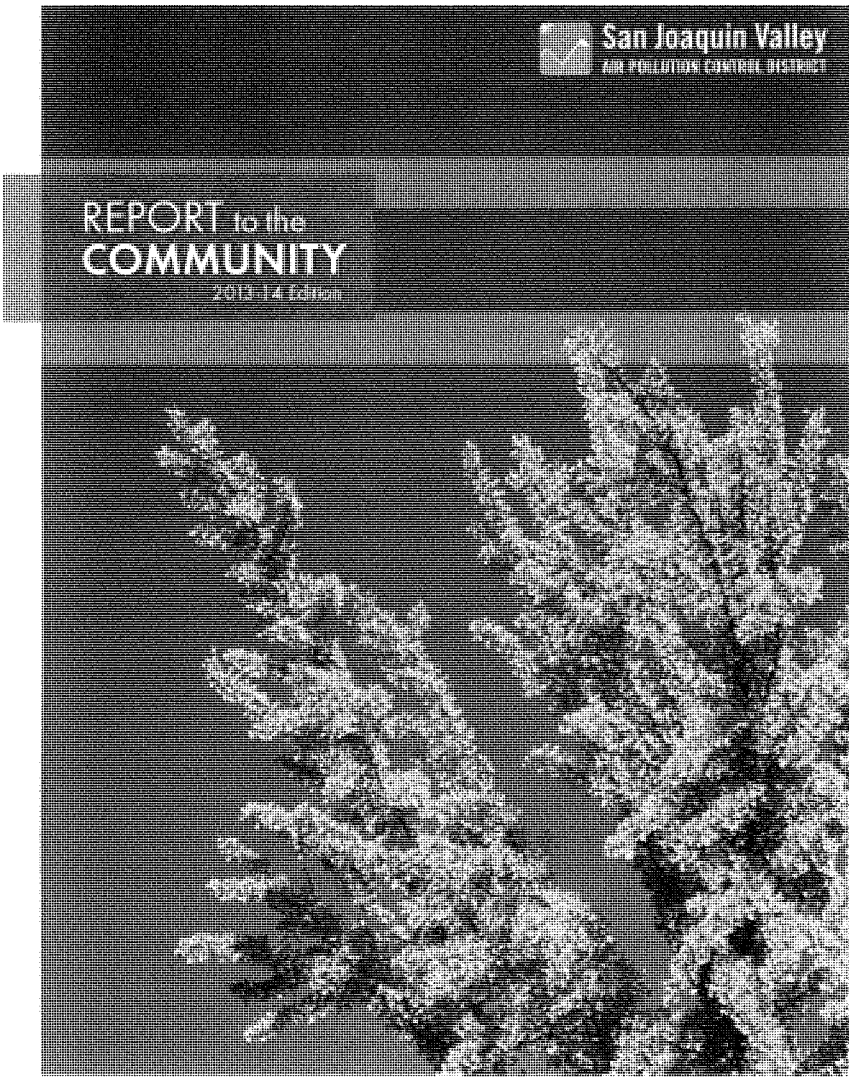
- **Texas:** It may be useful in rare instances, but demonstrating even a single instance is extremely burdensome.

- **Georgia:** GEPD strongly urges EPA to provide additional clarification and guidance for submittal of exceptional event documentation.

Regarding International Transport of Ozone:

- **North Dakota:** As with other states, the Department is concerned about background and transported ozone which may prevent compliance with a more stringent NAAQS. As Asian economies, like China and India, grow the problem is expected to only get worse.

- **Wyoming:** The AQD requests that EPA update its 1991 guidance to include technology and tools developed in the past 24 years and reflect current research on international transport...


San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT
REPORT to the
COMMUNITY
2013-14 Edition

Message from the Air Pollution Control Officer

Great work, San Joaquin Valley!

As the work of cleaning up the Valley's air continues, we are delighted to pause to savor a historic accomplishment.

In 2013, the Valley air basin became the first in the country to advance from a classification of extreme non-attainment for a pollutant to achieving a difficult health standard.

This is, indeed, a moment worth celebrating. Valley residents can take pride in our collective efforts to continuously improve air quality through groundbreaking strategies that are rooted in good science and common sense.

Since the 1-hour ozone standard was established by the federal Environmental Protection Agency, the Valley has been, dubiously, among the top several air basins throughout the nation in terms of exceedances. But in the past few years, all this changed.

Despite natural events including triple-digit temperatures and wildfires, 2013 was the cleanest year on record for ozone. The progress has been remarkable. In 1996, the air basin experienced 281 hours over the standard. In 2012, that number plummeted to seven hours over the standard. And last year, we had zero hours that exceeded the health standard.

How did this happen? Through nothing less than the concerted, relentless, unwavering efforts between and among all the businesses and residents of the Valley. This accomplishment, which dramatically improves the quality of life for everyone who lives and works here, required billions of dollars in clean-air investments, long-term behavior changes, and most of all, a fundamental understanding of the importance of attaining this health goal for both health and economic vitality.

The Valley is challenged by many forces out of anyone's control, such as our unique geography: a bowl shape surrounded by mountains, resulting in long, sunny days and temperate winters, which provides the best growing conditions in the nation but also, unfortunately, provides an ideal environment for trapping and retaining emissions. Added to the endemic economic challenges we have, these conditions can seem insurmountable in our quest to advance to clean air.

But as the Valley's people have demonstrated time and again, our greatest natural resource is our "can-do" attitude matched with determination, sacrifice, and hard work. This "can-do" attitude has produced a truly remarkable achievement that we can all be very proud of, and that will serve, once again, as an example to the rest of the country of what can be achieved when a region comes together for the common good.

As we chronicle the past year of air quality progress, we are heartened by this victory, and confident in our ability to meet our remaining challenges.

Seyed Sadredin

Executive Director/Air Pollution Control Officer

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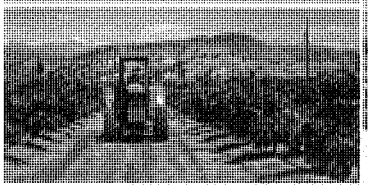

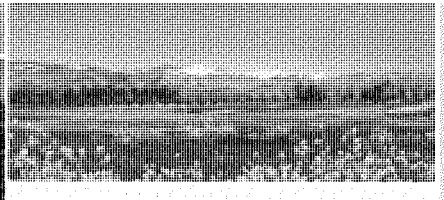

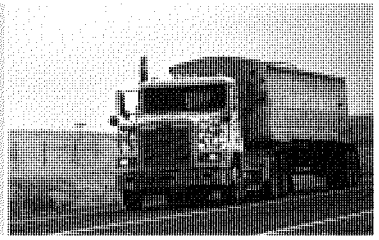

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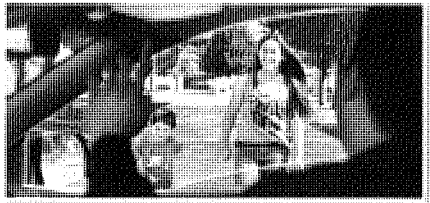
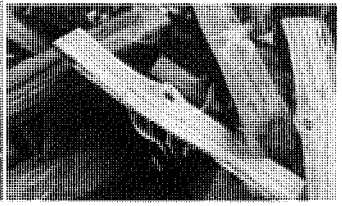
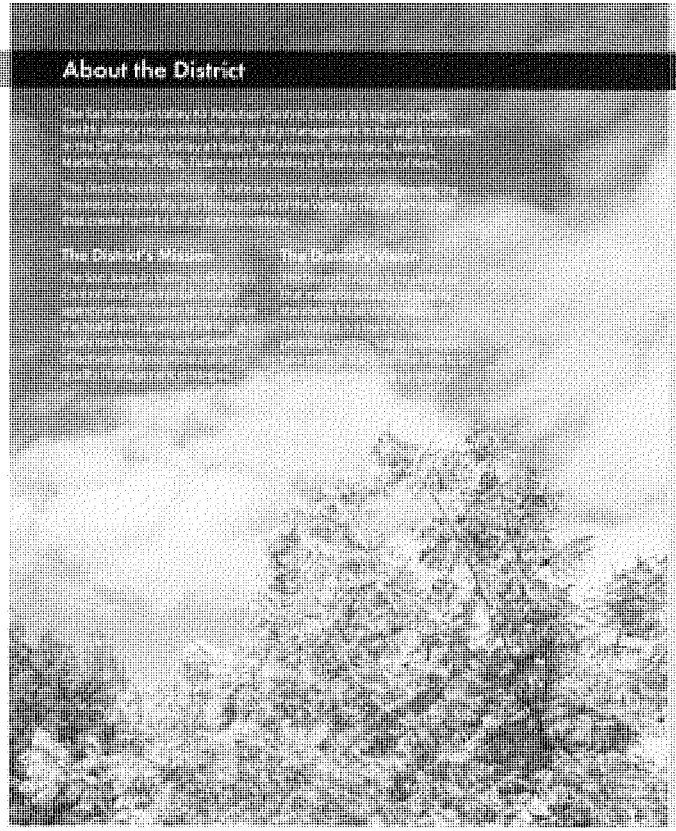




About the District



The District's Core Values

PROTECTION OF PUBLIC HEALTH
The District shall continue to strive to protect the health of all Valley residents through efforts to meet health-based, state and federal ambient air quality standards, based on science and prioritized where possible using health-risk reduction strategies.

ACTIVE AND EFFECTIVE AIR POLLUTION CONTROL EFFORTS WITH MINIMAL DISRUPTION TO THE VALLEY'S ECONOMIC PROSPERITY
District staff shall work diligently to adopt and fully implement air pollution control measures, provide meaningful incentives for reducing emissions, and develop creative alternatives for achieving emissions reductions.

OUTSTANDING CUSTOMER SERVICE
District staff shall work to provide excellent customer service for stakeholders in activities including rule and plan development; permitting and emissions inventory functions; compliance activities; financial and grant funding transactions; and responses to public complaints and inquiries.

INGENUITY AND INNOVATION
The District values ingenuity and innovation in meeting the challenges we face. Examples of this spirit of innovation include developing programs that provide new incentives for emissions reductions, and providing alternate compliance strategies that supplement traditional regulatory efforts and generate more emissions reductions than could otherwise be reasonably obtained.

ACCOUNTABILITY TO THE PUBLIC
The District serves, and is ultimately accountable to, the people of the Valley for the wise and appropriate use of public resources, and for accomplishing the District's mission with integrity and honesty.

OPEN AND TRANSPARENT PUBLIC PROCESSES
The District shall continue to provide meaningful opportunities for public input and be responsive to all public inquiries.

RECOGNITION OF THE UNIQUENESS OF THE SAN JOAQUIN VALLEY
The Valley's meteorology, topography and economy differ significantly from those in other jurisdictions. Although it is valuable to review and evaluate efforts of other agencies, we must consistently look for solutions that fully consider the Valley's unique needs.

CONTINUOUS IMPROVEMENT
The District works to continually improve its internal operations and processes, and strives to streamline District operations through optimally utilizing information technology and human resources.

EFFECTIVE AND EFFICIENT USE OF PUBLIC FUNDS
The District shall continually strive to efficiently use all resources and to minimize costs associated with District functions.

RESPECT FOR THE OPINIONS AND INTERESTS OF ALL VALLEY RESIDENTS
The District shall respect the interests and opinions of all Valley residents and fully consider these opinions, working collaboratively, in carrying out the District's mission.

Attaining Ozone Standard Marks a
HISTORIC ACHIEVEMENT FOR THE VALLEY

For the first time in the Valley, the San Joaquin Valley is 2011 had zero violations of the ozone air quality standard established under the federal Clean Air Act, down from 181 violations in 1990. In 1991, EPA classified the Valley as "Extreme" non-attainment for this standard, meaning that reaching the standard, in that time, was deemed impossible. San Joaquin Valley is the first and only region in the nation with "Extreme" classification to attain the standard.

Reaching this milestone has been a key focus of the Valley's air quality management strategies for more than two decades. Since 1991, the District has developed and implemented numerous rules, plans, and programs that rank amongst the most stringent rules in the nation to obtain the significant emission reductions needed to demonstrate attainment. Additionally, the District has supplemented its regulatory programs with a robust, voluntary incentive program, providing more than $300 million in incentive funds, resulting in a reduction of more than 100,000 tons of emissions.

Despite significant progress, in 2004 under federal law, Valley residents and businesses became subject to an annual $19 million penalty. At the time, the air District crafted an alternative approach that kept these penalties from going to federal coffers. Under the alternative approach that was approved by EPA, the Valley was able to reinvest those penalties back into the Valley, to be dedicated to fund cleaner air projects in the eight-county region.

WORKING TOGETHER

Attaining this key smog standard is a historic accomplishment that reflects the effectiveness of the District and recent strategies taken businesses and residents to reduce emissions and improve public health. The members of the District's Governing Board were unanimous in their appreciation of the recovery of this achievement, while expressing their gratitude to the stakeholders that made this achievement possible.

Rather businesses and farmers have been instrumental in helping to craft and implement strategies that reduce emissions. Although their support and will appears to from an office fire, small-scale and public-private partnerships with the District. Millions of dollars have been invested to reduce emissions through the installation of emission-reduction technology and the replacement of older, higher polluting equipment.

Valley residents continue to seek air quality improvements and have taken an active role in helping to pollutants. Public support and participation during air quality episodes in 2011 were critical in avoiding the four remaining 1-hour ozone violations.

Local, state and federal policy makers have provided necessary funding and support consistent with the region's air quality needs. This success is the result of diligent work by local elected officials and community leaders and support from the California Legislature in the last decade or two.

With more than 18 percent of the Valley's economy being from farming, and with the Valley producing 8 percent of the nation's food, the Valley's future is tied to the health of its agriculture. Farmers have worked with the District to reduce emissions from farm equipment, and have implemented practices that reduce emissions from farming operations, including crop burning, which have been phased out, and reduced use of pesticides that contribute to ozone formation.

The District's Governing Board has to be commended for their good judgment and skill in balancing the Valley's economic needs, environmental, and transportation challenges.

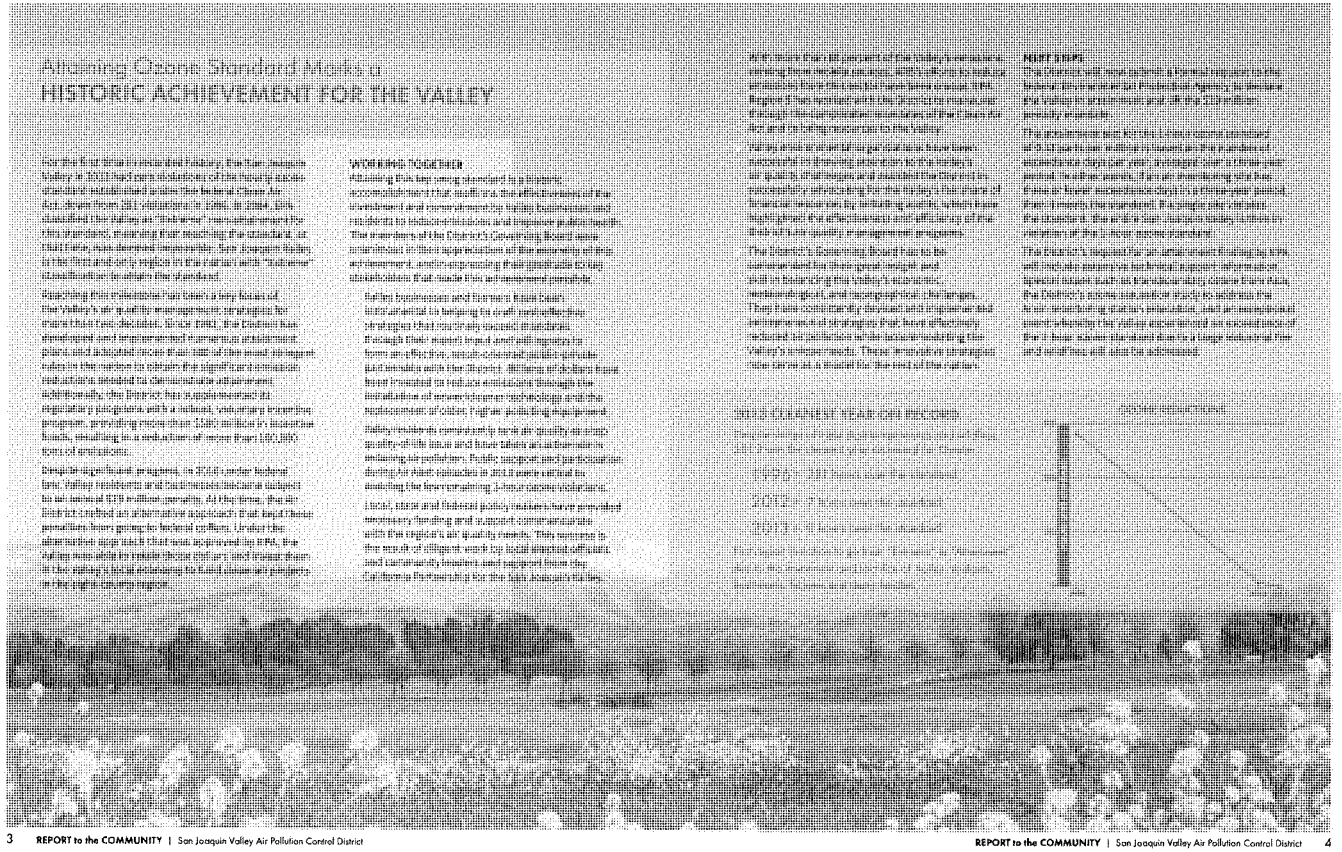
They have consistently developed and implemented strategies that have effectively achieved the reduction of the pollution affecting the Valley's unique needs. These innovative strategies have served as a model for the rest of the nation.

NEXT STEPS

The District will now submit a formal request to the federal Environmental Protection Agency to declare the Valley in attainment with the 1997 8-hour ozone policy standard.

The requirement has been met when a period of 3 years has elapsed without a violation of the 1997 8-hour ozone standard. The District is preparing for the Clean Air Act requirements for a 10-year period. The District has committed to continuing with the strategies that have been successful in reducing emissions of the Valley's ozone pollution.

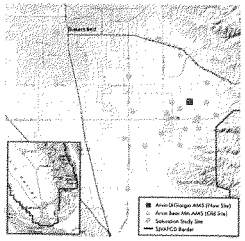
The District's request for an attainment finding will include measures to achieve support attainment, specific issues such as the accuracy, cause from data the District's ozone monitoring network, to address the air recording station's relocation, and an assessment of emissions reducing the Valley experienced as a consequence of the 1 hour ozone standard due to a large volcanic ash and smoke fire all data to addressed.



Arvin Ozone Saturation Study

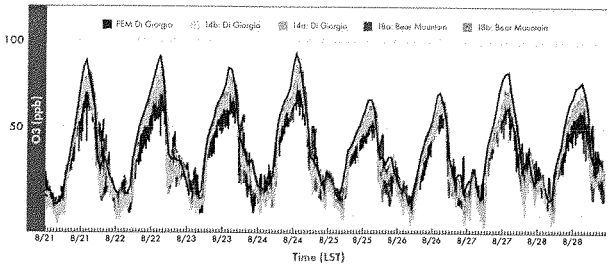
To enhance public outreach and education, the District is working to develop online resources that will provide Valley residents access to additional air quality information and statistics customized to their neighborhood. The Arvin Ozone Saturation Study was funded by the District to establish scientific correlations enabling the District to estimate and report neighborhood-level ozone concentrations. The study was also designed to answer outstanding questions regarding an old ozone monitor in Arvin that was relocated by the state Air Resources Board in December of 2010. A replacement station was located by ARB at the Di Giorgio Elementary School in Arvin. Some individuals affiliated with environmental groups have argued that the Valley should not be allowed to claim attainment with the 1-hour ozone standard without returning the monitor to the old Arvin Bear Mountain location.

In summer 2013, 23 new solar-powered ozone samplers were deployed to 21 locations, with three co-located at official monitoring sites to continually ensure and verify accuracy of the samplers. Two monitors were located across the street from the old Bear Mountain site in Arvin. Ozone concentrations were measured continuously (24 hours per day) for six weeks beginning in mid-August until the end of September. The majority of the monitoring locations for this special study were clustered in and around the community of Arvin with a scattering of samplers farther from the community to examine ozone in the surrounding area. The extensive



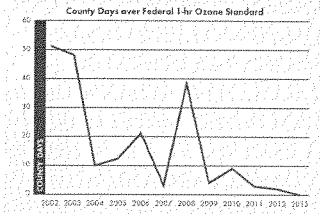
data collected here provides the scientific foundation for establishing ozone gradients for multiple locations in and around Arvin. This data indicates that ozone concentrations at the new Di Giorgio Elementary School site are actually higher than those measured at the old Bear Mountain site. Therefore, demonstrating attainment with existing monitors is actually more conservative and health-protective than the proposed alternative to reinstitute the old Arvin Bear Mountain site. Additionally, the new monitor measures ozone in close proximity to children at the elementary school, which provides for greater public health protection for this sensitive population.

Hourly and One Minute Ozone

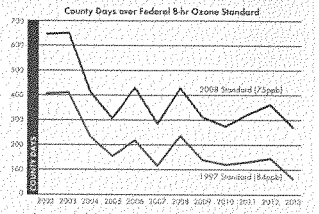


How much Ozone from Asia Travels into the Valley?

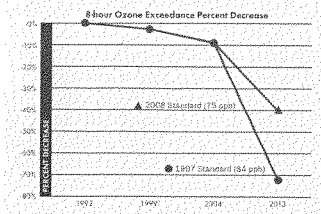
Ozone Trends



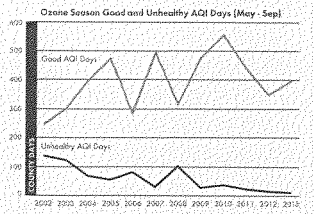
▸ The year 2013 made history by being the first year to ever record zero exceedances of the federal 1-hour ozone standard.



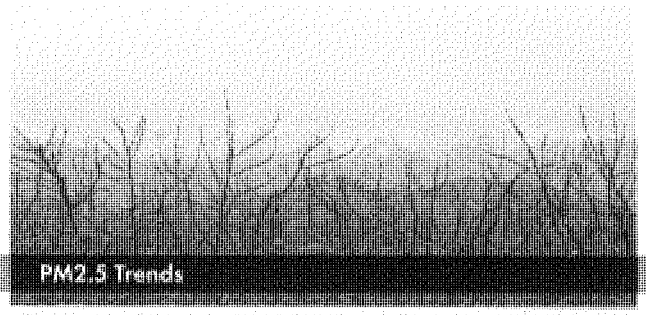
▸ Days over the federal 8-hour ozone standards continue to decline. 2013 had fewest exceedances of 1997 standard in Valley history.



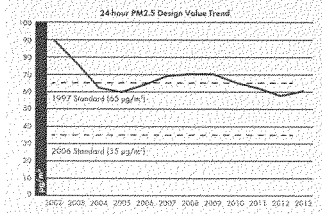
▸ 40% decrease in days over 2008 8-hr ozone standard since 1992, and 72% decrease in days over the 1997 standard over the same time period.



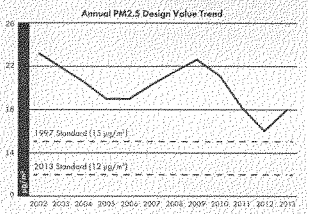
▸ Continued decrease in the number of Unhealthy AQI County Days during the ozone season of May to September.



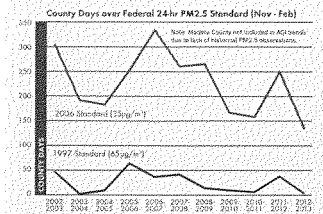
PM2.5 Trends



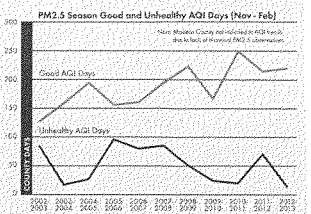
▸ The 24-hour Design Values remains below the 1997 federal standard.



▸ The increase in PM2.5 Design Values is due to the extreme meteorological conditions at the end of 2013.

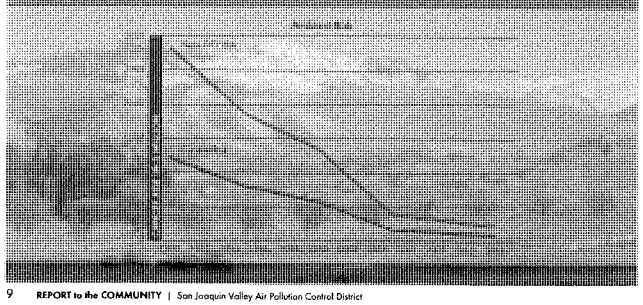


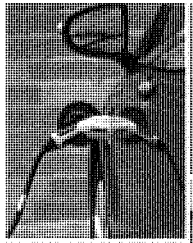
▸ The downward trend continued during the wood burning season of 2012/13.

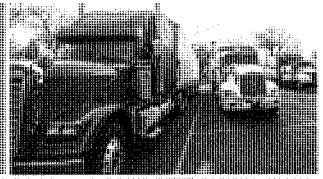


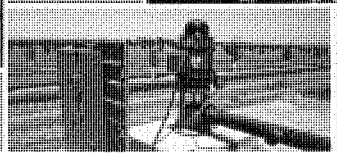
▸ The positive trends for both Good days and Unhealthy continued in the 2012/13 wood burning season.

District Prepares for New Risk Assessment Guidelines from Cal/EPA





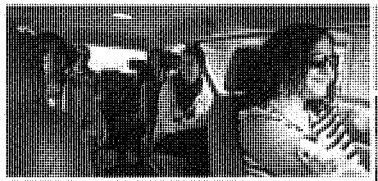


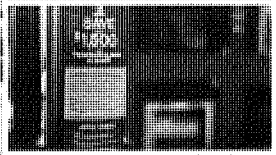


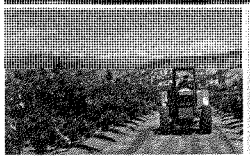
Continuing to Invest in our Valley

The largest area of growth at the Valley Air District is in its Grants and Incentives Program. In fewer than 10 years, awards through the District have increased more than tenfold, reflecting the ongoing commitment of the District, business and industry and Valley residents in making clean-air investments that will benefit all of us.

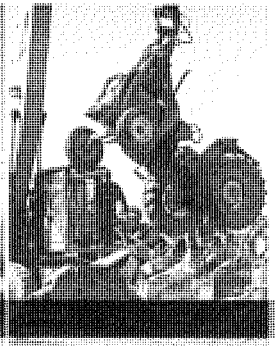
During 2013, more than **$103 MILLION** in District funding and private investment found its way to projects that reduced more than **9,000** tons of lifetime emissions in the Valley air basin.

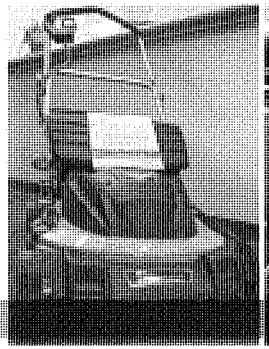


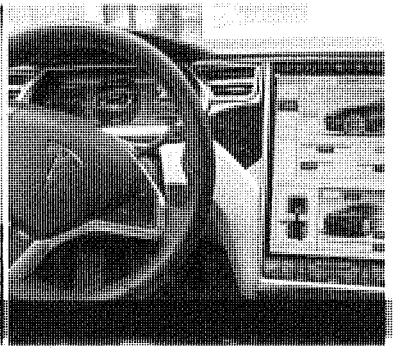




The District funded 1,937 **NEW CERTIFIED STOVES & INSERTS** with $563,650







Grants

TECHNOLOGY ADVANCEMENT PROGRAM

The Technology Advancement Program's primary goal is to advance technology and accelerate the use of innovative, clean-air technologies that can reduce emissions as rapidly as practicable. Despite major reductions in emissions and concomitant improvements in air quality, the San Joaquin Valley continues to face difficult challenges in meeting federal air-quality standards. It is virtually impossible for the Valley to attain the new standards for ozone and particulates without significant advancements in low-emission technologies for mobile and stationary sources.

The Technology Advancement Program has opened three rounds of funding and received over 100 proposals for clean-technology projects. The District has committed to funding 16 of these projects totaling $5 million. In 2013, two projects were completed and final reports are now available on the program web page.

Technology development focusing on Valley needs can be enhanced through partnerships and collaborations with other air districts and state agencies. Additionally, strategies for reducing emissions in the Valley can benefit regional and state air quality. To make the most of these co-benefits, the District is participating with EPA Region 9, the state Air Resources Board, South Coast Air Quality Management District and other agencies in the Clean Air Technology Initiative (CATI), where these partners aim to use available resources through research and technology demonstration efforts.

District staff will continue to search for opportunities to support projects that build the air-quality technology research and demonstration capacity of colleges and universities in the Valley, improving the ability of local institutions to engage in future clean-technology projects that are specifically suited to the Valley's needs.

AG TRACTOR REPLACEMENT PROGRAM

In 2013, the District's Agricultural Tractor Replacement Program successfully replaced 776 old, high-polluting Tier 0 and Tier 1 Agricultural Tractors with new, cleaner Agricultural Tractors. The goal of the program is to provide an incentive equal to approximately 50 percent of the cost of the new equipment with the remaining cost share contributed by the farmers. As expected, the interest in the program remained extremely strong during 2013, with the District contributing over $32 million and the farmers contributing over $32 million. The 776 projects resulted in 5,114 tons of emissions being reduced over the lifetime of the projects.

During the course of the Ag Tractor Replacement Program, the District recognized that many small, Valley farmers have the oldest, highest polluting agricultural tractors but are financially unable to meet the program cost-share requirements. To address this issue, the District created and successfully implemented the first Tractor Trade-Up Program in the State of California. Instead of crushing a Tier 1 tractor that was turned into the program a small farmer is given the opportunity to take possession of the Tier 1 tractor and turn in their old Tier 0 tractor to be recycled. This program has the potential to remove hundreds of old high polluting agricultural tractors that would not have otherwise been recycled with zero financial burden to the small farmer.

LAWN EQUIPMENT

The highly popular, consumer-oriented Clean Green Yard Machines program helps San Joaquin Valley residents clean the air through rebates by replacing gas-powered mowers with nonpolluting, electric mowers. In 2013, 170 old gas-powered lawn mowers were replaced with cleaner electric models through this successful public program.

The Cordless Zero-Emission Commercial Lawn and Garden Equipment Demonstration Program successfully ended in June 2013 with a total of 4 technology demonstrators, 60 participants and 445 pieces of equipment for in-use testing. The program demonstrated the performance and durability of electric equipment in non-residential applications to accelerate market acceptance and build upon the progress already made in the residential sector.

ELECTRIC VEHICLE WORKSHOPS AND GRANTS

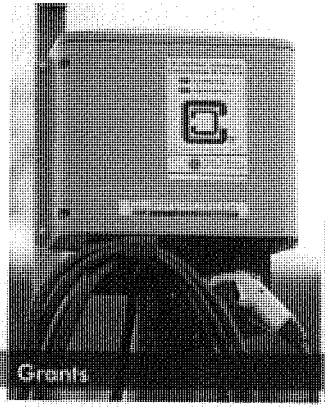
Reducing pollution from mobile sources will be challenging without the mass adoption of plug-in electric vehicles (PEV) throughout the region. Toward that end, the District is working to prepare the Valley for PEVs by developing plans for electric vehicle charging stations, as well as incentive programs to offset the costs of both vehicles and infrastructure.

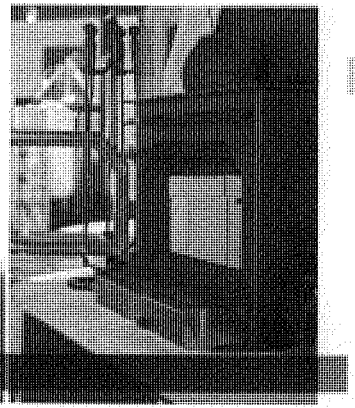
The Department of Energy awarded $75,000 to the District as part of the California PEV Readiness Project, a statewide, multi-agency collaboration. During this one-year project, the District worked with other agencies and created a statewide, community-based PEV readiness assessment. The Statewide and Regional San Joaquin Valley PEV Assessment was released in January 2013 and included an extensive assessment of the Valley region.

Based on recommendations in the PEV Assessment, and to help coordinate and address the concerns specific to our Valley, a regional PEV Coordinating Council (PEVCC) was established. This 28-member advisory group is comprised of local Metropolitan Planning Organizations, Cities, Counties, Energy Utilities, the local Clean Cities Coalition, Electric Vehicle Service Providers, as well as local consultants and Non-Profit Organizations. The Air District was also awarded $200,000 from the California Energy Commission to build upon the Statewide and Regional San Joaquin Valley PEV Assessment and develop a more comprehensive PEV Readiness Plan specifically for the Valley.

In addition, the District began to conduct PEV education and outreach, share recommendations and best practices with Valley stakeholders and residents, and help implement as many recommendations as possible.

The District also supported the growth of PEVs in the Valley via the Drive Clean rebate program. This program provided a rebate (up to $3,000) to assist 391 Valley residents in purchasing a PEV.





Grants

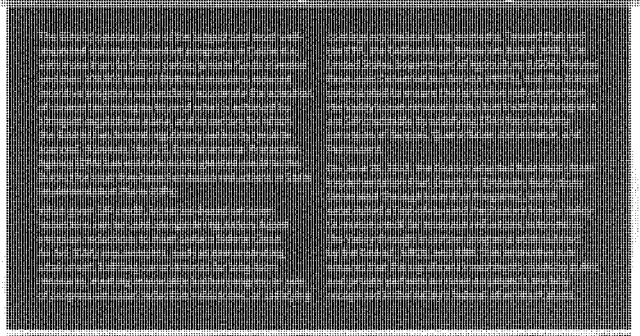
PUBLIC BENEFIT GRANTS PROGRAM

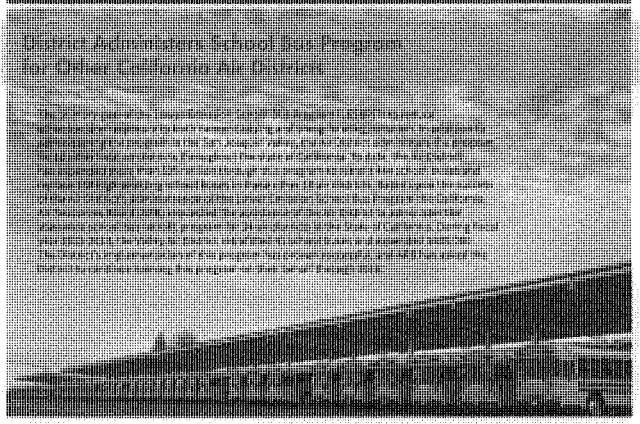
Approved by the Governing Board in 2011, the Public Benefit Grants Program funds a wide variety of clean-air, public benefit projects that will directly benefit Valley residents. Eligible applicants are public agencies and public educational institutions within the geographical boundaries of the San Joaquin Valley air basin. The program has three components: New Alternative-Fuel Vehicle Purchase, Advanced Transit and Transportation, and Alternative Fuel Infrastructure. To date, the District has received 166 applications for more than $10 million in requested funds for the New Alternative-Fuel Vehicle Purchase component. The Advanced Transit and Transportation component was released to competitive bids and 15 proposals were awarded more than $5 million in funding. The third component for Alternative Fuel Infrastructure received 17 project proposals with nearly $16.5 million in funding requested.

BURN CLEANER

The Burn Cleaner woodstove change-out program provides incentives to San Joaquin Valley residents to help reduce emissions by replacing older, more polluting wood burning devices with cleaner gas devices, clean-burning pellet devices or cleaner-burning EPA Phase II-certified wood burning devices. To date, the District has received more than 3,500 applications and provided more than $2.1 million in funding since the program began.

Federal Government Recognizes Incentive Programs





Assisting Valley Environmental Justice Communities

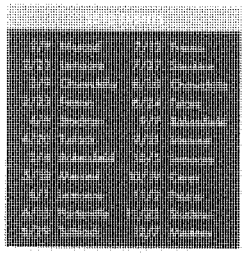
The District has a history of working to ensure that residents in every corner of the Valley have access to the cleanest air possible, innovative grant opportunities and targeted communication to keep informed of District action.

Tune In, Tune Up

In 2013, the District continued its award-winning Tune In, Tune Up program, providing an additional $4 million in funding and hosting 22 events throughout the San Joaquin Valley.

Tune In, Tune Up is designed to identify and repair high-emitting vehicles. The Tune In, Tune Up program is operated in partnership with Valley Clean Air Now, which has a long history of successfully implementing this program and excels at reaching residents in environmental justice communities who otherwise may not be able to afford costly vehicle repairs. Reaching this key demographic is essential as the emission reductions are most needed in low-income communities, which are historically home to the greatest percentage of high-emitting vehicles.

Through weekend events, participating residents have their vehicles screened to determine if they qualify for emissions-related repairs at little to no cost to them. In the Tune In, Tune Up program, vehicle owners bring their vehicles to one of the program's weekend events, where an emissions test is performed to determine the likelihood of that vehicle failing the required biennial smog test. Owners of vehicles that fail this initial screening are provided with vouchers that are redeemable at participating smog shops for up to $650 in emissions-related repairs plus the cost of smog checks and diagnostic time. Once the vehicle is repaired, confirmatory smog tests are conducted that can then be used for vehicle re-registration purposes. In 2013, more than 5,000 vouchers were issued to Valley residents through these weekend events.



Environmental Justice Advisory Group

In 2007, the District adopted the Environmental Justice Strategy. One of the new initiatives of the Strategy was the formation of an advisory group, Environmental Justice Advisory Group. Since its formation five years ago the members continue to work diligently with District staff to provide guidance and input on a variety of key issues. Notably, EJAG members have provided great input on the various District incentive programs, including the Burn Cleaner woodstove change-out and truck grant programs. The EJAG also serves as a forum to gather public input and enhance public participation.

Since its formation the group had been meeting monthly, but recently decided to meet every other month. On the month that they meet, it is on the fourth Thursday at 5:30 p.m. A complete list of the new meeting dates and more information on the District's Environmental Justice Strategy and EJAG can be found at: http://www.valleyair.org/Programs/Environmental_Justice/Environmental_Justice_idx.htm.

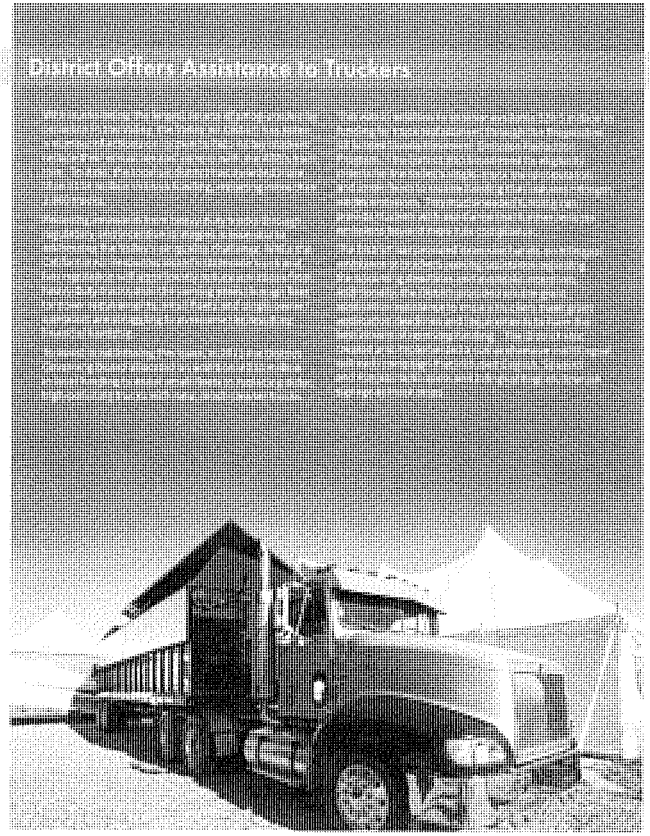
Enhanced Public Outreach for Permitting

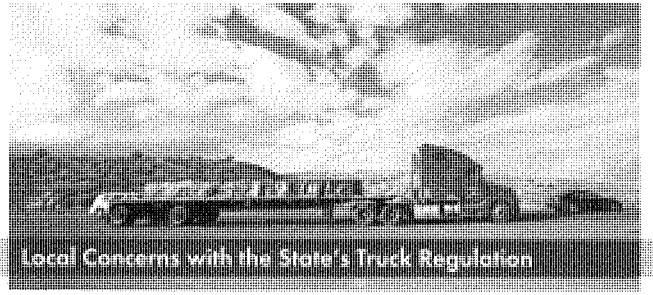
In 2013, to expand the public's opportunities to take part in and comment on proposed permits, the District implemented several enhancements to its public outreach processes for permitting projects. Federal, state and local regulations require the District to post public notices of proposed permitting projects in local newspapers, but the District has also posted notices on its website (www.valleyair.org) for many years. Since early 2013, however, we have greatly enhanced this service by also posting all public permitting notices in Spanish, and by allowing people to sign up to receive notices by mail or by email. Such notices can now be requested for any permitting project requiring public notice for a specific facility in the Valley, for all permitting projects in a region of the Valley, or for all permitting projects in the entire Valley, and can be received in Spanish language or English language versions. The District provides in-house oral translation services to interested parties, often provided by District employees familiar with the permitting project and its potential air quality impacts.

To further enhance these public outreach services, the District has improved the District's Public Notice web page by improving search capability and the page's layout to make projects easier to find. To streamline requests for facility-specific information and maximize outreach while minimizing the District resources required, a new feature has been incorporated into the District's internal Permit Administration System to track and maintain these requests, and automatically generate the requested notices.

The District's state-leading public outreach efforts have been recognized by and presented to other air districts in the state, and are encouraging other agencies to look for ways to improve public outreach in meaningful ways, while also demonstrating that such efforts, if carefully planned and automated, are not necessarily resource-intense.

District Offers Assistance to Truckers





Local Concerns with the State's Truck Regulation

More Action is Needed to Avoid Economic Devastation to Valley Truckers and their Customers

The state's truck and bus regulation was adopted in 2008 to reduce particulate matter and NOx from existing diesel vehicles operating in California. In 2010, the state Air Resources Board amended the rule to provide some relief and an extension in light of the economic recession. Under this rule, most heavier trucks were required to have a particulate filter in place beginning January 1, 2012 and older trucks are required to be replaced starting January 1, 2015. In the meantime, owner/operators of small fleets became subject to a January 1, 2014 deadline to install particulate filters.

The District is extremely concerned that a large number of these small independent owner/operators were unable to comply with the requirement to install a filter by January 1, 2014. These truckers cite financial hardship and operational difficulties with filters working properly as reasons for their inability to comply. For many of the owner/operators, the retrofit cost ($15,000 - $20,000) exceeds the value of the truck, therefore rendering this option infeasible. Due to the economic downturn and limited access to credit, many owner/operators are not able to finance retrofits or replacements. Additionally, State delays in Proposition 1B funding due to California's fiscal crisis have reduced previous access to these funds for many fleets.

The District estimates that there are approximately 20,000 small fleet trucks registered in the San Joaquin Valley, with a high percentage of those being single owner-operators operating in rural and environmental justice communities (up to 15,000 trucks).

At the urging of the District and other stakeholders, late in 2013 the Air Resources Board granted a short extension until mid-2014 for truckers demonstrating "good faith" efforts to comply. Although this provides some needed relief, the District is concerned that more strategic action is required to achieve the needed reductions in truck emissions while minimizing adverse economic impacts. Towards that end, the District has allocated an additional $10 million in incentive funding to assist truckers in replacing their vehicles. The District is also offering additional recommendations to the state Air Resources Board for increased flexibility and resources to achieve the necessary reductions in emissions in a balanced fashion. These recommendations include:

- Providing more flexibility in grant eligibility requirements for truckers,
- Extending upcoming deadlines for filter installation in exchange for earlier replacement and conversion to a cleaner 2010 model truck,
- Allowing an extension for trucks that can demonstrate extreme economic hardship,
- Allowing an extension for low-use and vocational-use trucks,
- Allowing trade-up to a cleaner model in lieu of a 2010 model for some truckers (owner/operators of small fleets), and
- Providing more state funding for truck replacements.

It is also important to note that the January 1, 2014 deadline was the first of several critical deadlines, and thousands of additional trucks will become subject to additional requirements in the coming years. Early and comprehensive action is imperative to avoid future crises as we approach these difficult deadlines.

District addresses
Hydraulic Fracturing in the San Joaquin Valley

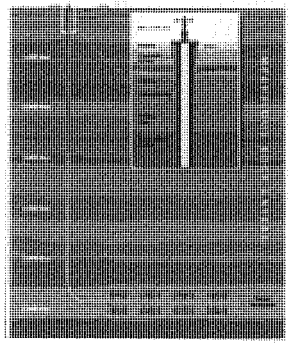
Significantly increased hydraulic fracturing in the oil production industry is possible in the near future in the San Joaquin Valley. The Valley Air District regulates air emissions from oil production operations, including those associated with hydraulic fracturing, and ensures that all associated permitted oil production equipment is well-controlled and regularly inspected. However, given the potential increase in hydraulic fracturing, and an intense public interest in the subject, the District will be maintaining a strong presence in new regulatory and industry efforts associated with hydraulic fracturing.

Hydraulic fracturing has been occurring in oil production operations of the southern San Joaquin Valley for at least three decades, with approximately 500 wells hydraulically fractured per year. Hydraulic fracturing, or "fracking," is a method to enhance the recovery of oil or natural gas from the rock layer in which the oil or gas resides, known as the producing formation. A production well is drilled through the various strata and lined with several layers of steel casing and cement. In a non-fractured well, the producing formation is sufficiently porous to allow the oil or gas to flow freely into the well. With hydraulic fracturing, "fracturing fluids" or "pumping fluids" consisting primarily of water and sand with small amounts of other chemicals, are injected under high pressure into the producing formation. This creates fissures that allow the oil or gas to move more freely from rock pores where it is trapped. The water and other fluids are extracted from the fissures, but the sand "proppant" stays behind, propping the fissures open so that the oil or gas can flow freely.

With recent discoveries relating to the Monterey Shale formation, we may see a significant increase in oil production along with associated hydraulic fracturing activities in the Valley. Recent reports of estimates of the oil contained in the Monterey Shale have concluded that it contains more than 15 billion barrels of oil (more than 80 percent of which is in the Valley), it may meet more than 60 percent of the U.S. consumption needs, and could result in the creation of tens of thousands of jobs and billions of dollars in revenues in the San Joaquin Valley.

The drilling and operation of oil and gas wells is regulated by the Division of Oil, Gas and Geothermal

Groundwater Protection through Proper Well Construction



Resources (DOGGR), part of the California Department of Conservation. DOGGR has the overall responsibility to ensure that well drilling and operations are carried in a manner to protect the environment, prevent pollution, and ensure public safety. According to preliminary DOGGR assessments, hydraulic fracturing in California has historically not created negative environmental impacts.

However, widely reported environmental problems with fracking associated with natural gas production in Eastern and Midwestern states have grabbed the public's attention. Water contamination has been the most frequently expressed public concern with respect to hydraulic fracturing, but a number of other potential environmental concerns have been raised, including potential climate change and air quality impacts. There are important and significant differences in the natural gas hydraulic fracturing in eastern states, often covered by the nation media, and the oil well fracking that has been occurring in the San Joaquin Valley. For instance,

the oil reserves in the Monterey Shale are at an average of 11,000 feet below the surface, and are capped by a significant layer of less permeable "cap rock." This cap rock has trapped the oil and gas for millennia and keeps these petroleum reservoirs isolated from the water table and earth's surface. In California, hydraulic fracturing is principally a means of ensuring that individual, conventional wells attain maximum production, often, according to DOGGR, a preferable alternative to drilling additional wells to produce the same resources.

In some other parts of the United States, such as the Marcellus Shale gas deposits in New York, Pennsylvania, Ohio, Maryland, Virginia and West Virginia, natural gas is trapped not in a reservoir protected by cap rock, but inside uncapped rock formations much closer to the earth's surface and the water table. In these "unconventional" uses, hydraulic fracturing is necessary to free the resource for production, and doing so in the absence of a natural limitation is risky, as fracturing the producing formation to such a degree that the surface or water table is compromised.

According to DOGGR, there are other differences between the typical use of hydraulic fracturing in California and elsewhere. For example, in other states the extraction of unconventional natural gas resources requires lengthy fracturing periods along long stretches of horizontally drilled production wells. Millions of gallons of water are injected under pressure in a process that may take days or weeks in order to effectively open the reservoir rock. In California, much less water is used and the period of pressurizing the reservoir rock is much shorter.

Finally, most oil production in the San Joaquin Valley is relatively isolated from human habitation, while in many locations where the natural gas production will occur in Marcellus and High Utica Shale Fields.

While other potential environmental impacts may deserve attention, the Air District's focus is currently on air quality impacts. There are a number of potential sources of emissions associated with hydraulic fracturing production that deserve attention. For example, there are emissions associated with oil well drilling and hydraulic fracturing operations, the storage and handling of fluids used in the hydraulic fracturing process and the resulting produced fluids, and fugitive dust emissions from sand handling, and from travel on unpaved roads and work areas. Hydraulic fracturing fluids contain small amounts of chemicals, some of which are known volatile organic compounds and air toxic compounds. These chemicals make up less than one percent of the fluids used in hydraulic fracturing, with the water and sand comprising more than 99 percent of the total materials injected.

While the District believes that emission sources from equipment used in hydraulically fractured wells are currently adequately regulated, given the potential for significant increase in hydraulic fracturing and heightened level of public attention and concern, it is appropriate to fully evaluate the overall air quality impact from hydraulic fracturing operations and to ensure that regulatory efforts address any potential air quality concerns.

Last year, there were no specific laws or regulations in California pertaining to the process of hydraulically fracturing wells. In early 2013, DOGGR began a rulemaking process to impose new requirements for well stimulation, including hydraulic fracturing. Subsequently, California became the first state in the nation to adopt a rule for hydraulic fracturing when Senate Bill 4 (SB 4) Oil and Gas Well Stimulation was signed into law in September 2013. SB 4 requires DOGGR to establish interim regulations by Jan. 1, 2014, study the environmental impacts of well stimulation, including air quality impacts in 2014, and approve final regulations by Jan. 1, 2015.

Consistent with the District's stated intent to continue and enhance engagement with the regulatory efforts of lead government, any additional regulations regarding hydraulic fracturing should be based on the efforts promulgated by DOGGR or in the state lead. District staff is committed to working closely with DOGGR, the oil production industry, and other interested parties to provide technical support during studies of air quality impacts of hydraulic fracturing and will strongly advocate that DOGGR new regulations provide the appropriate protection of air quality. Staff is DOGGR to be to protect air quality in the San Joaquin Valley and the District stands ready to assist DOGGR with appropriate and necessary regulations.

Vehicle Idling

Emissions from vehicle idling presents a significant air-quality problem in the San Joaquin Valley. The Air District has embarked on an aggressive public outreach campaign to stem these noxious pollutants.

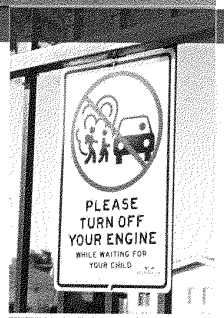
Vehicle idling is especially prevalent during school-time traffic in mornings and afternoons, and in the use of drive-through services. In fact, vehicle idling has been shown to be a major contributor to late-summer ozone pollution in August and September.

Statistics also show that 43 percent of the students who are driven to school in private vehicles live within one mile of the campus. These vehicles linger by the curb with engines running while dropping off students, producing high levels of nitrogen oxides, particulates and volatile organic gases, all of which contribute to ozone and particulate pollution. Idling a vehicle for merely four minutes produces emissions equivalent to driving for one mile, and idling a vehicle for just 10 seconds consumes more fuel than "cutting" and restarting the engine.

The District, in conjunction with its Healthy Air Living Schools program, has created and distributes, free of charge, "no idling" signage that is displayed by many Valley schools. The "no-idling" message has also been incorporated into literature and training for school-based programs.

Instead of idling a vehicle, the District recommends:

- Organizing carpools so that fewer vehicles are being driven on a daily basis
- Avoiding the use of drive-through services
- Taking alternate transportation or walking a child to school
- Refraining from idling whenever possible



Wood Burning Assessment in Foothill Communities

The District's current residential wood burning Rule 4901 provides an exemption for burning in communities without access to natural gas. This exemption was provided in consideration for economic and other feasibility issues associated with non-wood burning alternatives in these communities. Additionally, the primary purpose of the current rule was to achieve PM2.5 attainment in urban areas where the Valley's peak PM2.5 concentrations occur.

Most District communities in the higher elevations of Madera, Fresno, and Tulare Counties are not served by natural gas (e.g. Oakhurst-Coarsegold, Shaver Lake, and Three Rivers). Some foothill communities, however, are equipped with natural gas service, and are thus subject to Rule 4901 requirements. For example, the Greater Frazier Park area has access to natural gas, and the District has devised a separate forecast area for them given the cleaner air levels in the area with respect to the rest of Kern County. There is anecdotal evidence that certain foothill communities in the Valley experience high wood smoke episodes during the winter season. Consistent with the District's Health-Risk Reduction Strategy, the Governing Board approved a field study to assess wood-smoke concentrations in the air basin's foothill communities in order to minimize localized particulate pollution from wood burning.

While the atmospheric conditions in foothill communities are generally more favorable to pollutant dispersion as compared to the Valley floor, localized adverse health impacts are possible. The District will conduct field inspections to identify the extent and the source of wood smoke within these communities. Foothill and mountain communities such as Shaver Lake and Oakhurst are small enough geographically to effectively and efficiently deploy inspectors to conduct surveillance during this wood burning season. Additionally, the data collected through the field surveys will be utilized to conduct dispersion modeling to quantify potential wood smoke concentrations and identify the geographic areas impacted by sources of wood smoke in these communities.

At the conclusion of this evaluation, if the District finds that residential wood smoke is a public health issue in these foothill communities, staff would bring a recommended course of action for addressing this issue through a voluntary "Please Don't Light Tonight" outreach program in these communities. Through this voluntary strategy, residents would be encouraged to use only cleaner-burning options during these forecasted episodes and offer incentives to upgrade old, higher polluting wood burning devices with EPA-certified fire place inserts and stoves. Additionally, the District would also engage in efforts to educate foothill residents about the health hazards of wood-smoke and identify the most effective methods for notifying residents when the voluntary curtailment strategy is in effect.

Online Complaint Reporting

As an enhancement to the District's already robust complaint response program, air pollution problems can now be reported to the District using a new online complaint reporting system at www.valleyair.org/complaints.

The District's new online reporting system is easy to use. Once in the system, users are prompted to enter relevant information about the problem, such as the type of problem (odor, smoke, dust, etc.), a description of the problem, and date, time and location it occurred. There is also an option for users to attach a picture or video to the complaint. The system will also allow users to automatically receive an electronic copy of the investigation report via email.

The new online complaint system adds to the many existing ways the public can report air quality problems to the District. In addition to the new online system, the public can also report complaints on one of the District's three toll-free hotlines, the bilingual (Spanish-English) telephone complaint line or use the District's iPhone app for smoking vehicle complaints.

All complaints received are referred to a District inspector for follow-up and handling. Public complaints are often the initial indicator of air quality issues in a community. As such, the District places the highest priority on responding to air pollution complaints and operates an on-call program to ensure timely response to complaints, even during non-business hours.

Formerly Known as the Risk-Based Strategy

In 2013, the District's Risk-Based Strategy was renamed as the Health-Risk Reduction Strategy. This change was made to more simply and forcefully describe the overarching goal of the strategy which is prioritizing public health.

The Risk-Based Strategy is aimed at giving top priority to reducing health risk rather than the singular focus on reducing the mass of emissions, which has been the conventional approach under the federal Clean Air Act. This was done in recognition of the fact that health benefits or risk are not always proportional to the mass of pollutant emissions. This new strategy relies on sound science, which indicates that differences in toxicity, particle size, precursor potency and actual exposure are the key drivers that must be understood in devising strategies that can best reduce public health risk. Therefore, this approach can better be described as the District's Health-Risk Reduction Strategy. This strategy is now the guiding principle by which the District develops and executes plans, regulations and incentive-based strategies to attain health-based air-quality standards in the quickest, most health-protective and cost-effective manner.

In response to rapidly expanding body of scientific research, the risk-based approach is also gaining support from both U.S. EPA and the scientific community. In fact, in their proposed implimentation rule for the 8-hour ozone standard, EPA incorporates a number of proposals suggested by the District under the Health-Risk Reduction Strategy. Industry representatives have largely embraced the strategy even though it targets certain sources for new air pollution control strategies. This is largely due to the fact that the Health-Risk Reduction Strategy provides an assurance of effective controls that produce real air quality benefits as opposed to the "shotgun approach" under the conventional mass-based strategy.

District Expands Innovative, Air-Friendly Business Model Throughout Valley Cities

The District adopted the "Fast Track" action plan to pursue non-regulatory measures to assist the Valley in accelerating attainment of the federal ozone standard. One component of the "Fast Track" plan is to pursue energy efficiency and air quality friendly changes at local businesses.

The District has partnered with the Greater Stockton Chamber of Commerce to share their award winning "Green Team San Joaquin" model with other communities around the San Joaquin Valley. The program is designed to address environmental and economic development issues as it relates to the cost of doing business. A main component of the program is conducting on-site business assessments designed to reduce energy consumption, waste, and air pollution while improving the bottom line for businesses. With funding from the District the Stockton Chamber has met with over 20 communities around the Valley. As a result of these efforts, a number of "Green Teams" have been established around the Valley.

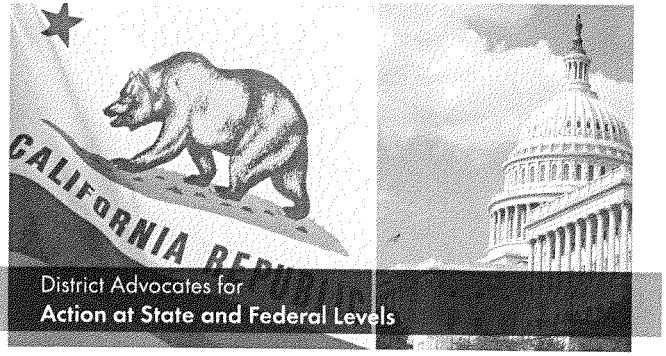
District Takes Early Steps to Improve Residential Wood Burning Regulation

In December 2012, the Governing Board adopted the 2012 PM 2.5 Plan and accelerated the process for lowering the threshold for daily residential wood burning prohibitions during winter seasons. This measure will assist the Valley in further reducing PM2.5 emissions during the critical winter season, with additional resulting health benefits. A critical component of this new strategy includes allowing residents that have invested in cleaner burning devices to burn during certain wood burning prohibitions, and increasing incentives for clean wood burning devices provided through the District's Burn Cleaner incentive program.

In anticipation of amending the District's pioneering Residential Wood burning Rule (Rule 4901) in mid-2014, the District began working with stakeholders and gathering information to better inform the amendment process. The District held five meetings with Valley hearth retailers to begin discussions regarding potential rule amendments and enhancements to the Burn Cleaner woodstove change-out incentive program. After receiving valuable input from the retailers, the District re-launched the grant program in October and provided retailers with in-store signage and materials. The stakeholder meetings also provided important on-the-ground information which will be used to help craft the upcoming rule amendments.

In addition, the Governing Board approved a bilingual telephone survey to be performed in early 2014 to assess the wood burning habits of Valley residents. Although the survey will include questions related to driving habits and lawn care, the main focus of the survey is wood burning. The survey will include urban, suburban and rural households with both cellular telephones and land lines.

The District plans to begin a robust public process in early 2014 to communicate the results of the survey and gather comments on the proposed changes to the rule. Upon approval by the Governing Board, the District will communicate any rule changes in preparation for the 2014-15 winter PM season.



District Advocates for **Action at State and Federal Levels**

The District continues to partner with Valley stakeholders and elected officials to advocate for state and federal policies and resources that will assist the Valley in meeting its air quality objectives.

At the state level, this past year, significant effort was put into developing a broad-based coalition that was successful in advocating for the re-authorization of the funding for the Carl Moyer and AB 118 incentive programs. These funding programs are critical to the continued reduction of mobile source emissions and for the development of advanced technologies that will allow for reductions into the future.

At the federal level, the District continued to advocate, through Congress and the EPA, for legislative and policy changes to address outdated provisions of the Clean Air Act. These efforts have been productive, as EPA included many of the District's suggestions in their proposed implementation rule for the 8-hour Ozone Standard which was recently published for public comments.

In the coming year, the District will continue to advocate on air quality issues that impact the Valley. Some of the priority issues include:

FEDERAL Seek common sense improvements to the Federal Clean Air Act

STATE/FEDERAL Advocate for additional resources for mobile source reductions

FEDERAL Seek continued air quality funding in the farm bill

STATE Seek revenue from the Cap and Trade program

STATE/FEDERAL Seek additional resources for air quality monitoring instruments

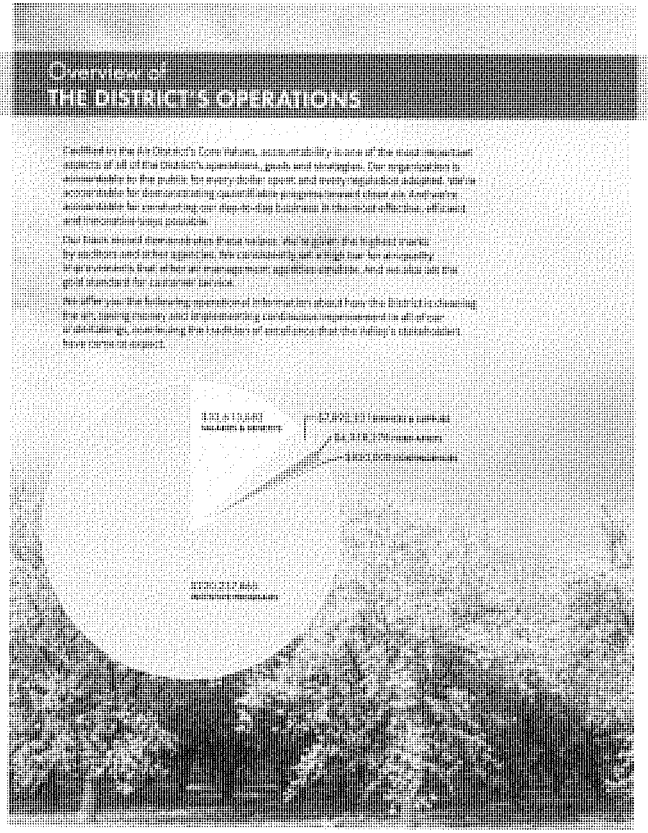
FEDERAL Continued push for air quality empowerment zone legislation

STATE/FEDERAL Pursue energy efficiency and alternative energy measures

STATE/FEDERAL Support for adequate resources/policies to reduce the air quality impact of wildfires

STATE Support California Environmental Quality Act (CEQA) reforms that will streamline the process

Overview of **THE DISTRICT'S OPERATIONS**



Streamlining and Efficiency

ADMINISTRATIVE SERVICES
The financial workload of the District remains high, in part due to the District's successful incentive grant programs. Overall departmental staffing remained level as the District continues to absorb workload through new efficiencies gained from improved technology and work flow processes. The District Budget is now fully compiled electronically, saving significant staff time. Utilizing this new internally developed software not only expedites budget development, but improves the accuracy and flexibility of budget reporting.

ELECTRONIC PAYMENTS
The District is now accepting electronic payments for District fees, providing permit holders and others the option to pay fees using a credit or debit card and further streamlining our billing and accounts receivable function.

AUTOMATED PAYROLL FUNCTIONS
The District has successfully automated its time tracking and payroll processing functions. This automated process improves internal controls and decreases staff time necessary to process payroll. Time savings created by this automation will be allocated to important accounting and reporting functions for the District's expanding grant programs.

AUTOMATED REPORTS
The Finance section continues to promote efficiencies through increased usage of both the District's financial software and its grants management program. Significant improvements to the District's general ledger structure has provided more timely and accurate information and decreased the time necessary to prepare interim monthly budget reports, perform grant reporting and to close the fiscal year and prepare annual financial reports.

DEPARTMENTS COORDINATION
The District's centralized Operations and Program Support staff provides important clerical and administrative support for operations and programs allowing staff in those departments to focus on technical work. Operations and Program Support section continues to assume and coordinate increased responsibilities from the operating departments ensuring that support activities are handled in the most efficient and cost effective manner.

ELECTRONIC DOCUMENT MANAGEMENT SYSTEM
The District continues to invest in electronic document conversion and go Green. In order to streamline operations, archive hardcopy documents and conserve resources, many paper documents are scanned into a new, electronic document management system. This new system allows staff to search key words and phrases to locate documents, rather than manually searching through file cabinets. The District also conserves paper since newer documents can be electronically stored into the system, rather than being printed for archive storage.

ONLINE FACILITY PORTAL
The District released the initial test-version of the Online Facility Portal to a small group of permitted facility operators in 2013. These operators are now able to access all permitting information associated with their facilities, from up-to-date status of pending permit applications to historical permitting documents. The Facility Portal concept was approved by the Board during the 2013 Board Study Session and is intended to give easier, quicker access to permit holders for viewing and submitting information. When fully developed, in addition to 24-7 access to permit information, the system will also provide finance information, online bill payment, electronic report submittal, and electronic application filing capabilities.

RENTAL IRRIGATION ENGINES
The District, working with the Valley's agriculture industry, has developed an innovative permitting approach that allows rental agricultural irrigation engines to be replaced on a seasonal basis with as-clean or cleaner engines without first having to obtain a modified permit. Permit modifications must be sought within seven days after such a "routine replacement" – a timeline that allows the fast-paced agricultural industry unparalleled permitting flexibility while also continuing to improve air quality by reducing emissions from the irrigation engine fleet.

AGGREGATE PROCESSING
The District worked with the aggregate processing industry to develop first-of-its-kind streamlined permitting procedures for fast-track processing of permits for new construction and infrastructure improvement projects at aggregate processing facilities. The expedited processing of these projects will contribute to the recently seen economic recovery in the Valley, while simultaneously providing improved air quality through reduced reliance on diesel internal combustion engines at these facilities.

IMPLEMENTATION OF DISTRICT RULE 2410 – PREVENTION OF SIGNIFICANT DETERIORATION
During 2013, the District developed various streamlining tools to enable the District to implement its new Prevention of Significant Deterioration (PSD) permit processing role at a much quicker pace than previously experienced by applicants under EPA's program. PSD is a preconstruction permitting program for new and modifying major sources of attainment pollutants, and is required by the federal Clean Air Act (CAA). Historically PSD permitting projects within the Valley were evaluated by the US EPA, in a process that often took over two years to complete, drastically impacting Valley businesses' ability to expand. The District has been able to use these permit streamlining tools to reduce the PSD permitting timeline to four to six months.

Streamlining and Efficiency

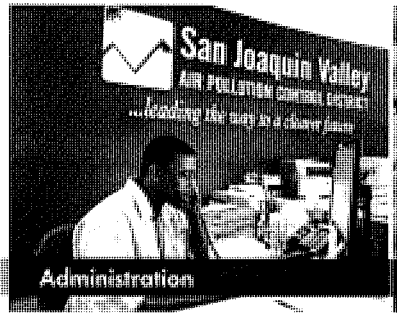
ELECTRONIC PERMITTING AUTOMATION
The District continues to enhance automation of an interdepartmental communication system called the "change order" process that the District uses to pass permitting information from the Compliance Department to the Permit Services Department. With the successful launch of this electronic tool, during 2013 the District was able to significantly decrease the time it takes to convert an Authority to Construct permit to a Permit to Operate and reduce the number of pending conversions. Enhancements to the change order automation are expected to be fully implemented in 2014.

METHANE EMISSIONS FROM LANDFILLS
In 2010, the California Air Resources Board (CARB) adopted a regulation designed to reduce methane from the state's landfills. While the state anticipated implementing this regulation on its own, the District, after consulting with the Valley's landfill operators, has entered into a memorandum of understanding with CARB to implement and enforce the rule on a local level. District implementation and enforcement of these requirements, as opposed to state implementation, will result in a better use of government funds as the District already regulated landfills under its air quality permitting programs, and will provide a higher level of service to the Valley's regulated landfills.

AIR MONITORING AUTOMATION, REMOTE CONNECTION AND MODERNIZATION
A modernization project to enhance air-quality monitoring automation is in final stages of the testing phase. When fully implemented, the new systems will reduce travel, equipment maintenance and data review time.

REDUCING FIELD STAFF TRAVEL TIME WITH INCREASED ACCOUNTABILITY
Global Positioning System (GPS) units have been installed in all field staff vehicles to increase inspector safety, efficiency and accountability, allowing staff to be deployed quickly and efficiently to respond to unforeseen events such as public complaints and equipment breakdowns at facilities.

NEW TECHNOLOGIES IN INSPECTION PROGRAMS
Compliance inspection staff has been equipped with tablet computers, which allow them to complete inspection report forms while in the field; reduce time associated with paperwork; increase field time; and allow additional inspections to accommodate workload increases.



Administration

Administration is comprised of the Executive Management staff and several divisions that provide support services for the District's core operations. For budgeting purposes, these functions are structured under: General Administration, District Counsel, Personnel, Administrative Services, Information Technology Services and Outreach and Communications.

GENERAL ADMINISTRATION
The General Administration Division is responsible for the overall management of the District. Under policy direction of the Governing Board, the Executive Director/APCO and the Deputy APCO represent the Board's interests, and oversee the development and implementation of policies and procedures, formulation of policy alternatives and recommendations, overall management of personnel and resources, and development and implementation of air quality-related programs. Also included in General Administration is the Senior Policy Advisor, who supports the APCO in advocacy efforts advancing Board-adopted legislative priorities and positions.

DISTRICT COUNSEL
The District Counsel is the chief legal advisor to the Governing Board, the Executive Director/APCO, the three District Hearing Boards, and the San Joaquin Valley-wide Air Pollution Study Agency. Under policy direction of the Governing Board, the District Counsel provides legal representation and advice in both litigation and general law matters.

PERSONNEL
The Personnel Division performs the full range of personnel support activities for all departments. Specific program activities include: recruitment, classification and pay, records management, legal compliance, labor relations, training and management/supervisory support. In addition, the Division is responsible for minimizing risk to the District through employee benefits, workers' compensation and wellness programs.

The Personnel Division has also taken a lead role in the development and implementation of the STAR (Service, Teamwork, Attitude, Respect) work culture program and both internal and external Healthy Air Living program activities.

ADMINISTRATIVE SERVICES
The Administrative Services Division is responsible for all fiscal and general services related functions of the District, oversight of the District clerical staff, records management, and oversight of the Clerk of the Boards function. The fiscal functions include preparation and control of the District's budget; responsibility for accounting and auditing all District revenues and expenditures; preparation of financial statements and related reports and incentive grant financial management, including state and federal grant reporting. The general service functions include: responsibility for facilities management, fleet maintenance, purchasing and risk management.

Rules & Regulations

GASOLINE TRANSFER INTO STATIONARY STORAGE CONTAINERS, DELIVERY VESSELS, AND BULK PLANTS (RULE 4621)
Amended in December, language in Rule 4621 was updated to make it consistent with ARB testing standards. The amendments removed ARB certification requirements for the aviation gasoline bulk loading operations and required these operations to be equipped with a vapor recovery system that would meet a minimum volumetric control of 90 percent. Amendments also included other minor corrections and removed redundant or expired language. These amendments to Rule 4621 were administrative clarifications that do not result in a detrimental impact on air quality.

GASOLINE TRANSFER INTO MOTOR VEHICLE FUEL TANKS (RULE 4622)
Amended in December, amendments to Rule 4622 incorporated an exemption from requiring Phase II vapor recovery systems for E85 (85 percent ethanol and 15 percent gasoline) fuel dispensing facilities based on EPA and ARB guidance that Phase II is not required for E85 fueling. Amendments also incorporated requirements consistent with ARB's guidance for certified Phase II vapor recovery systems and reduced the frequency of the Dynamic Back-Pressure Test from once every 12 months to once every 5 years, which is consistent with EPA's guidance on minimum test frequencies. This amendment will reduce the resulting emissions inherent from performing the test. The District also incorporated other minor revisions and removed redundant or expired language. These amendments to Rule 4622 were administrative clarifications that do not result in a detrimental impact on air quality.

Permitting

WORKING WITH BUSINESS

The District issues or denies permits, registrations and plan approvals for California's most diverse mix of mobile sources of air contaminants, and tracks and assesses the impacts of these facilities' various air emissions.

AUTHORITY TO CONSTRUCT & PERMIT TO OPERATE

Stationary sources of air pollution – from gas stations and body shops to refineries and power plants – must obtain permits from the District before constructing or operating. The permitting process involves two steps:

1. The applicant must apply for an Authority to Construct (ATC) permit. This is a rigorous opportunity for the project proponent, the District, and interested public to assess air quality compliance with future uses and local air pollution control requirements prior to beginning construction. The requirements that must be met are a result of the factors considered in the District's review, including the best available control technology (BACT) and emission offsets.

2. A Permit to Operate is issued after the equipment has properly installed. Development allowed by the Authority to Construct.

FEDERAL MAJOR/MINOR SOURCE PERMITTING

The District has issued 1,116 Permits to Operate and 209 Authority to Construct permits to about 300 facilities classified as "major sources" of air pollution. These permits are required of major sources by federal law, and are designed to assure compliance and EPA participation in the permitting process for the largest emitters of air contaminants.

CONSERVATION MANAGEMENT PROTOCOL (CMP) PLANS

The District imposes this tool, requiring and accepting more than 6,000 CMP plans and goal to develop air pollution emissions from agricultural operations.

EMISSION REDUCTION BANKING

The District's Emission Reduction Credit (ERC) bank allows facilities that make superior emission reductions to bank ERCs for later use or as offsets for "offsets" of emissions increases. The District's ERC Banking program is a key tool for offset. Emission reductions generated by permitting ERCs from sources that have made voluntary emission reductions. The District also has the ability to create ERCs from District-initiated emission reduction projects.

AIR TOXICS PROGRAM

The District performs a number of tasks aimed at reducing the risks of hazardous air toxics to communities. The District implements state and federal air toxics regulations, keeps an inventory of toxic emissions from Valley sources, and assures that these emissions, and any proposed new and modified sources, do not pose a significant risk to the residents of the San Joaquin Valley.

EMISSIONS INVENTORY

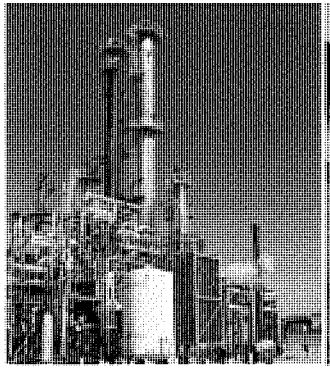
Each year, the District gathers emissions and operation data from as many as 1,000 facilities and other stationary sources, calculates each facility's annual emissions, and reports the results to the ARB. This inventory, now kept as a rolling form of our statement plans.

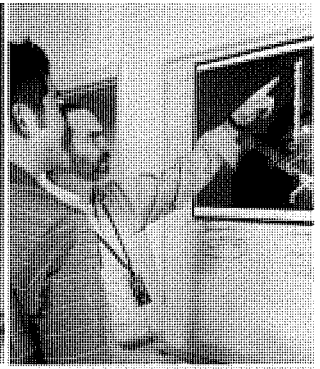
CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

District staff comments, issued to all developers, agencies proposing projects, and other local agencies, on the environmental impacts, including greenhouse gases, be assessed and publicly disclosed, and that any significant impacts be mitigated to the extent feasible.

CEQA/NEPA AIR QUALITY IMPACT REVIEWS

District staff has developed procedures and guidance for assessing the effects of greenhouse gases from local agencies and organizations and assure air quality considerations. These mechanisms are needed by cities and counties as they develop planning documents such as general plans, specific plans, and the District is offering a consistent, high-quality, and cost-conscious approach that only taxpayer dollars be spent to assess it once.





INDIRECT SOURCE REVIEW (ISR)

Indirect sources are buildings or facilities, such as new residential housing and shopping center developments that attract mobile sources of emissions, but may not directly emit pollution. The District's ISR group analyzes applications to assess the potential indirect emissions created by a development project, quantifies the mitigation proposed by the applicant, and may assess a development mitigation fee if insufficient mitigation is proposed by the applicant. An annual report of ISR activity, and the emission reductions generated by the program, is published by the District each year.

EMPLOYER BASED TRIP REDUCTION (ETRP)

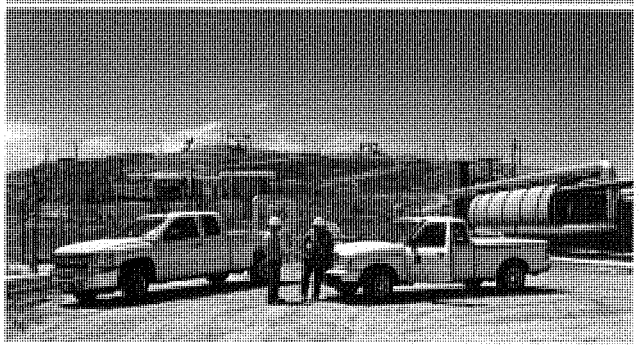
Rule 9410, Employer Based Trip Reduction, requires employers with more than 100 eligible employees at a single location to submit and implement plans designed to encourage carpooling and other trip reduction efforts by employees. The District has developed an easy-to-use online eTrip Plan submittal and reporting program, saving significant time for both eligible employers and the District, more adequate and frequent information is provided to the public.

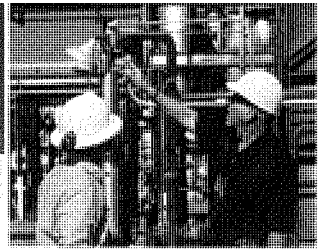
SMALL BUSINESS ASSISTANCE (SBA)

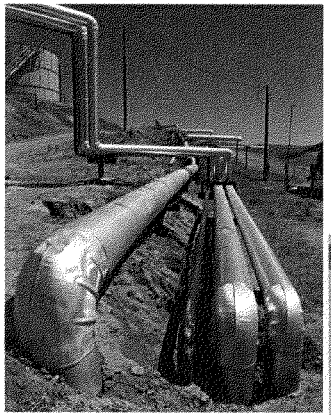
The District operates an effective SBA program to provide assistance to help stakeholders who lack the resources or expertise needed to efficiently stable air permits. District SBA engineers provide expert advice on technology options, application preparation and any other air quality issues. Interested parties can contact the District SBA through a toll-free telephone number in any region of the Valley.

3918	Authority to Construct permits issued
133	New Permits to Operate issued
409	Permit to Operate renewal Registration issued
931	New Title V permits issued to 14 facilities
500	Title V permit renewals issued to 14 facilities
1014	Title V permit modifications
288	Compliance assurance Monitoring issued
329	Indirect Source Review reviews issued
979	Small Business Assistance (SBA) assistance
3470	Annual Emissions Inventory completed and submitted
169	Technical assistance under Business Assistance Program
1072	California Environmental Quality Act (CEQA) actions processed
1000	CEQA comment letters and NEPA comments
257	Indirect Source Review applications processed
343	CMP plans

Enforcement







ENFORCEMENT ACTIONS
When violations of rules and regulations are discovered, the District delivers an appropriate level of enforcement action to ensure an expeditious return to compliance, and assesses monetary penalties to deter future violations. Disputed cases are generally handled in-house and settled through a mutual settlement process. On the rare occasion that a case cannot be settled through the mutual settlement process, the case may be transferred to District Counsel for more formal action. In 2013, the District processed nearly 2,100 issued notices, transferred 115 cases to District Counsel, and collected approximately $3.8 million in settlements.

HEARING BOARDS
The Hearing Boards are quasi-judicial panels that act independently of the District. They are authorized by state law to provide temporary relief from District rules and regulations if strict conditions prescribed under the California Health and Safety Code are met. Any excess emissions associated with the temporary relief granted by the Hearing Boards represent only a very small fraction of the Valley's total emission inventory and cannot, by law, be likely to interfere with the attainment and maintenance of health-based air quality standards or cause a public nuisance. In 2013, 124 variance petitions were heard at 52 hearings.

COMPLIANCE BY THE NUMBERS 2013

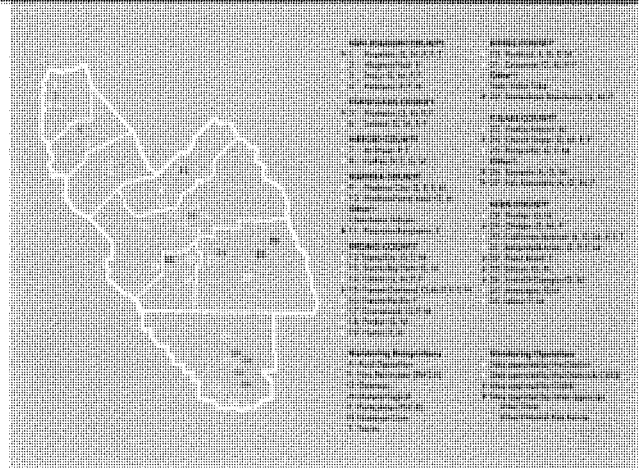
11,779	Units inspected
3,187	Public complaints investigated
1,938	Operations also inspected
3,187	Incentive funding units inspected
972	Asbestos projects reviewed and inspected

AIR MONITORING

The Valley Air District operates an extensive network of air quality monitors to support its mission of improving air quality and protecting public health. The District uses hourly readings from its real-time monitors to generate a daily Air Quality Index (AQI) forecast for each Valley county. The AQI communicates the state of air quality to Valley residents so they can keep air quality in mind as the plan their activities. The District also rigorously analyzes collected air quality data to help chart the future path to ozone and PM2.5 attainment.

Leveraging recent advancements in technology, the District will continue to expand the use of automated monitoring equipment and remote connection systems to allow for remote diagnostics and monitoring equipment repairs. This results in increased efficiency and reduced travel to distant monitoring stations. The District has added, or is in the process of adding, several new monitoring stations to its network to address federal requirements, to improve modeling and forecasting analyses, and to provide additional air quality information to Valley residents. The District is also in the process of installing four new near-roadway air monitoring stations in response to new federal mandates. These stations will be located in Fresno, Bakersfield, Modesto and Stockton.

Air Monitoring Sites in Operation



Legal Activities

DISTRICT PREVAILS IN CHALLENGE TO ITS PERMITTING RULES DESIGNED TO ELIMINATE DUAL PERMITTING REQUIREMENTS

This was a challenge to EPA's approval of District Rule 2410, enabling the District to assume from EPA administration of the permitting program for Prevention of Significant Deterioration. Petitioners sought to return permitting authority to EPA, with the potential for imposing cumbersome and inefficient dual permitting requirements on regulated facilities. This suit was successfully resolved on October 8, 2013, when Petitioners dismissed their Petition following the filing of the District's brief.

DISTRICT DEFENDS ITS RULES EXEMPTING MINOR AG SOURCES FROM PERMITTING

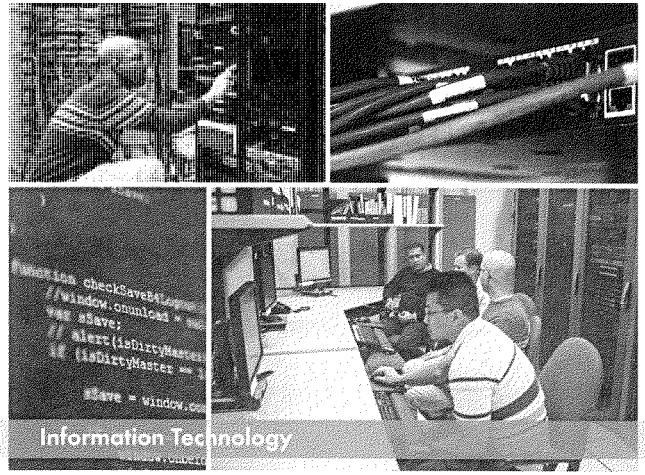
In September 2013, an environmental group filed a petition in the Ninth Circuit Court of Appeal to challenge EPA's approval of District rules clarifying that "minor" agricultural sources are exempt from the District's offset authority. The District has intervened in order to defend the validity of its rules. Briefs will be due in early 2014.

DISTRICT AWAITING ORAL ARGUMENT IN CHALLENGES TO OZONE, PM 2.5 PLANS

These two, similar cases involve a challenge to EPA's approval of the District's 2008 PM2.5 Plan and the District's 2007 8-Hour Ozone Plan. The challenges focus almost entirely on CARB's "State Strategy" portion of the Plan. In order to protect the region's interests, the District intervened to defend the entirety of the plans, including those adopted exclusively by CARB. The case is fully briefed and awaiting oral argument.

ENVIRONMENTAL GROUPS CHALLENGE THE DISTRICT'S METHOD OF COLLECTING NONATTAINMENT PENALTIES

This suit involves a challenge to EPA's recent approval of District Rule 3170, which the District adopted in May 2011 to implement section 185 "nonattainment penalties" required by the Clean Air Act for the District's failure to timely meet the 1-hour ozone standard. The District moved to intervene in the case to defend its method of implementing section 185 penalties. This case has been fully briefed and is awaiting oral argument.

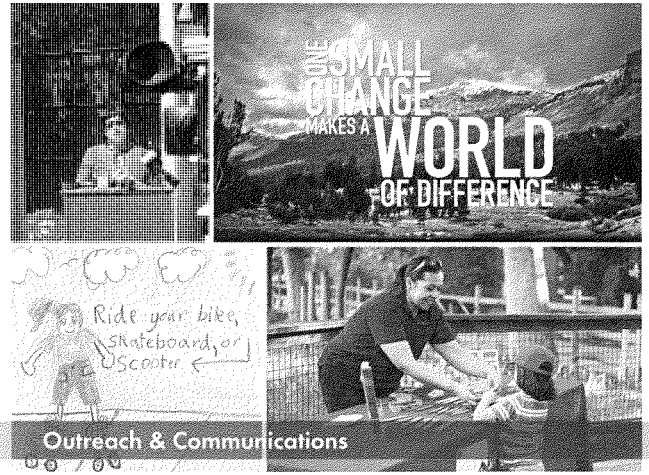


Information Technology

The District strives to use technology to provide the highest level of customer service and to be an example of efficiency. The District investment in technology paid dividends over the past year increasing efficiency and saving money.

PAPERLESS AGENDA CONSORTIUM (PAC)
Over the past year, the District established and sponsored the PAC in order to provide a forum for interested government agencies in the San Joaquin Valley to share paperless agenda resources, ideas, solutions, and technical knowledge. The PAC has a vision to facilitate efficient and cost-effective implementation of paperless agenda systems, enabling members of governing bodies to use common mobile devices for multiple agency agendas. The PAC now has over 50 members and includes representatives from all eight counties and many of the 59 cities in the San Joaquin Valley. The PAC has a good mix of members with technical backgrounds and government operations experience.

REDUCING COMPUTER FACILITY ENVIRONMENTAL IMPACT
In order to reduce the environmental impact of District computer facilities, the District set out to decrease electrical power, air conditioning and computer hardware requirements for its computer rooms. This effort has resulted in a reduction of 45 computer servers, which represents over 50 percent of the District's total. In addition, the server reduction allowed the District to avoid an air conditioning system upgrade that was estimated to cost over $100,000. This project proves that it is possible to save money while doing something good for our environment.



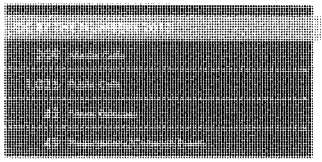
Outreach & Communications

In 2013, the District's Outreach and Communications team both embraced new challenges and disseminated historic good news about the air basin's never-before-achieved attainment of the federal 1-hour ozone health standard.

The team, a highly skilled group of communications professionals with expertise in public relations, media, graphics, web design and audio-video production, plays a critical role in providing bilingual information about current and expected air quality, grants programs, and educational and public information campaigns and programs, through a vital traditional and social-media outreach program.

This past year, the team elevated its presence on Facebook and Twitter, growing the number of followers and ensuring more people than ever before have access to important air-quality messaging. The team also ramped up its video production activities and continued to see increased participation in the District's Real-Time Air Advisory Network subscription program. The recently launched free iPhone app also continued to gather increased interest.

NEWS EVENTS
The historic attainment of the 1-hour ozone standard generated an exceptional amount of public and media attention. News conferences in all three regions announced the accomplishment in November. New partnerships and funding into the consumer Clean Green Yard Machines electric lawn mower trade-in program were the topics of news conferences in all regions during summer. The program is the most popular consumer incentive program in the District's history.



Outreach & Communications

AIR ALERTS
A single Air Alert was called in September and regional news conferences ensured that Valley residents got the message. And, judging by the subsequent announcement of 1-hour ozone attainment, it appears they did.

CHECK BEFORE YOU BURN
After a relatively slow start to the Check Before You Burn wood burning curtailment season in November, air quality took a challenging turn in December, resulting in a string of back-to-back, Valley-wide curtailments. The outreach team fielded many calls from residents seeking information and from media focused on the statewide story of unusually warm temperatures and stagnant atmospheric conditions.

BURN CLEANER
The Burn Cleaner wood stove change-out program received a boost from additional funding and renewed commitments from the District's hearth retailer partners, resulting in more generous incentive amounts, increased funding to the much-needed low-income component, and a noticeable increase in applications for assistance from Valley residents in their purchases of cleaner wood burning devices, all of which directly benefitted winter air quality.

AIR QUALITY FLAG PROGRAM
The popular school-based program for educating and informing the Valley's students and school staffs continued its trajectory of increased participation. With a new partner on board – the Central California Asthma Collaborative – the flag program continued to receive a high number of enrollment requests.

REAL-TIME AIR ADVISORY NETWORK (RAAN)
Interest remained strong for enrollment in this important, free tool that keeps Valley residents informed of current, localized air quality. Available since 2012 through a free iPhone app, RAAN shows no sign of diminishing in its popularity or impact.

"BLUE SKY, BROWN SKY ... IT'S UP TO YOU!"
This free air-quality curriculum is sought after in both schools and by Valley parents and caregivers through a continued partnership with Valley Public Television. The colorful, educational curriculum is available in two grade levels tailored for elementary-school students.

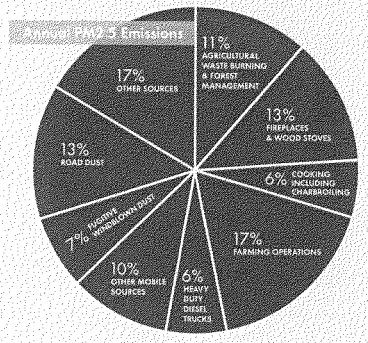
HEALTHY AIR LIVING KIDS CALENDAR
The most-anticipated project of the year, the Kids Calendar, was produced in-house for the second consecutive year and the District quickly depleted its supply of 20,000 calendars. Distributed throughout the Valley to health care organizations, nonprofits, schools and individuals, the Kids Calendar continues to set the standard for engaging the Valley's children in an ongoing air-quality discussion.

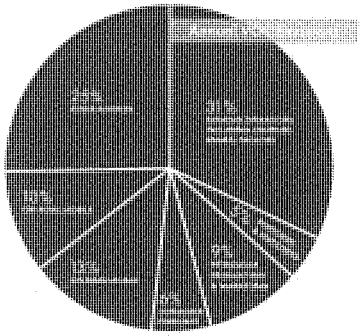
SOURCES OF POLLUTION

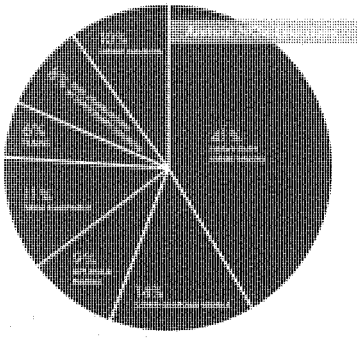
Despite major improvements in air quality, the Valley still faces significant challenges in meeting the federal, health-based, 8-hour ozone and particulate matter standards. These challenges are the result of the Valley's unique geography, topography and climate, which create ideal conditions for forming and trapping air pollution.

Ozone is the major component of the Valley's summertime "smog," and it affects human health and vegetation. Ozone is not emitted directly into the air, but is created by photochemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight. Particulate matter (PM) consists of tiny particles of solids or liquids (except pure water) that are suspended in the atmosphere. Particulate matter includes PM2.5 (particles less than 2.5 micrometers in diameter) and PM10 (particles less than 10 micrometers in diameter). PM can be emitted directly (primary PM, such as dust or soot), and can form in the atmosphere through photochemical reactions or gaseous precursors (secondary PM). Much of the Valley's ambient PM10 and PM2.5 is secondary PM, formed in atmospheric reactions of NOx.

In the San Joaquin Valley, due to our climate and the chemical composition of air pollutants, NOx is the primary culprit in the formation of both ozone and PM2.5. More detailed information on emissions is provided in the District's air quality plans, available at www.valleyair.org.







District Employees Give Back to the Community

In 2013, nine nonprofit organizations benefited from District staff's time, energy and resources in the third year of District-sanctioned community service.

Each year, District staff selects its own projects, and coordinates and organizes activities. These projects demonstrate the many ways that District employees contribute not only to the betterment and health of their communities during working hours, but during their own free time, as well.

In the southern region, a tri-tip feast in September generated financial assistance for the Bakersfield Homeless Shelter, as well as gathered clean, gently used clothing, diapers and non-perishable food items for the shelter. In November, a lunch raised money and items for the Miriam Jamison Children's Center. And staff literally gave of themselves in a blood drive for the Houchin Community Blood Bank.

In Modesto, northern region staff gave of their sweat to build a home for a family selected by Habitat for Humanity and their blood in a drive for Delta Blood Bank.

In the central region, staff selected three organizations: Fresno's Bringing Broken Neighborhoods Back to Life, a broad coalition of community and civic groups; Rescue the Children, a transitional living environment for formerly displaced women and their children; and the Central California Blood Center. A Thanksgiving lunch hosted by the region's Information Technology section and attended by about 80 employees exceeded the donation goal of collecting 244 household items and toys valued at about $3,500. All three regions donated items.

Staff participation is voluntary and activities take place during non-working hours. Organizations are nominated by regional staff.

On the Radar

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

1990 E Gettysburg Ave, Fresno CA 93726

559 230 6000 Central Region Office
209 557 6400 Northern Region Office
661 392 5500 Southern Region Office

www.valleyair.org
www.healthyairliving.com

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Search "Valley Air"

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San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

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Harold Hanson
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Buddy Mendes
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Alexander C. Sherriffs, M.D.
Appointed by Governor

Vacant
Small City – Tulare County

Hub Walsh
Supervisor, Merced County

J. Steven Worthley
Supervisor, Tulare County

Seyed Sadredin
Executive Director
Air Pollution Control Officer

Northern Region Office
4800 Enterprise Way
Modesto, CA 95356-8718
(209) 557-6400 • FAX (209) 557-6475

Central Region Office
1990 East Gettysburg Avenue
Fresno, CA 93726-0244
(559) 230-6000 • FAX (559) 230-6061

Southern Region Office
34946 Flyover Court
Bakersfield, CA 93308-9725
(661) 392-5500 • FAX (661) 392-5585

www.valleyair.org

DATE: January 22, 2015

TO: SJVUAPCD Governing Board

FROM: Seyed Sadredin, Executive Director/APCO
Project Coordinator: Tom Jordan

RE: **ITEM NUMBER 10: APPROVE THE DISTRICT'S 2015 LEGISLATIVE PLATFORM AND TAKE POSITIONS ON ANTICIPATED FEDERAL AIR QUALITY LEGISLATIVE PROPOSALS**

RECOMMENDATION:

Approve the District's 2015 Legislative Platform and take positions on federal air quality legislation.

BACKGROUND:

At the beginning of each year, your Board adopts the District's legislative platform that will guide the District's legislative advocacy efforts. The policy positions outlined in the legislative platform will provide guidance on legislative and regulatory actions, and reflect current priorities involving air quality issues in the San Joaquin Valley. Upon adoption by your Board, the District staff will follow up by meeting with the members of the legislature to distribute the platform and to update them on the Valley's air quality challenges and needs.

The platform contains summary information about the District and air quality in the San Joaquin Valley, the District's top legislative priorities for the upcoming legislative session, and general principles that will guide the District when taking positions on specific legislative and regulatory proposals. During the past few years, the District has made a concerted effort to inform legislators at both the state and federal level of the air quality challenges that we face, past efforts to reduce air pollution, and the need for additional resources and policy tools to continue to bring cleaner air to Valley residents.

LEGISLATIVE PRIORITIES:

A summary of the District's 2015 legislative priorities are as follows:

- (Federal) Seek legislative common sense improvements to the Federal Clean Air Act. In addition to our legislative proposals, the District has worked with EPA to advance administrative changes that can address certain issues with the Clean Air Act. These efforts have been productive, as EPA included many of the District's suggestions in their proposed implementation rule for the latest 8-hour Ozone Standard.

- (State) The District receives State Subvention Funding to offset the costs of state mandated air quality programs. Despite significant increases in responsibilities and the impact of inflation, the funding level has not been adjusted for over 20 years. The District currently receives $900,000 per year which is less than 2% of the District's operating budget. The District supports an increase in State Subvention Funding.

- (State) As the state develops updated policies/guidelines for the Carl Moyer program, the District will pursue policies that continue to focus the program on public health, maintain formulas that take air quality challenges into consideration, and that utilize cost-effectiveness surplus emission reductions as the primary eligibility criteria.

- (State) The compliance regiment under the state's Cap and Trade program may lead to increases in criteria and toxic emissions or missed opportunities to reduce such emissions in certain areas. Therefore, the District will advocate for policies that target a portion of Cap and Trade revenues to regions that are already overly impacted by criteria pollutant emissions with a greater focus on environmental justice communities.

- (State/Federal) The District will oppose greenhouse gas measures that are detrimental to public health due to increases in criteria pollutant or toxic emissions, and support greenhouse gas measures that achieve criteria pollutant and toxic emissions reductions.

- (State/Federal) When assessing state/federal policies concerning disadvantaged communities, the District considers poverty as a key factor contributing to diminished public health. The District will oppose efforts that lead to "redlining" these communities and inhibit economic growth. The District will support measures that improve quality of life and economic welfare by providing new state and federal resources. The District will oppose measures that dilute local control by diverting local revenues or the authority over the expenditure of local resources to the state or federal government.

- (State/Federal) Seek funding and other support from the State Air Resources Board and federal Environmental Protection Agency (EPA) to install and operate additional air quality monitoring instruments throughout San Joaquin Valley.

- (State/Federal) Support efforts that provide for cost-effective alternatives to agricultural open burning, level the playing field and provide fair competition between biomass plants and other renewable sources of power, and additional research and development of alternatives to agricultural open burning.

- (State/Federal) Support state and federal funding of technology advancement projects to help develop technologies to meet federal air quality standards. Potential areas for funding include zero and near-zero emission mobile source projects, renewable energy projects, and projects to eliminate emissions associated with waste disposal.

- (State/Federal) Support adequate resources and policies to reduce the impact of wildfires and their attendant public health impact.

The final section of the Legislative Platform provides general principles that will guide the District when taking positions on legislative proposals that will impact the District or the ability of the District to achieve its goals. The general principles have been updated to be consistent with the current goals of the District.

DISTRICT POSITIONS ON ANTICIPATED FEDERAL LEGISLATION:

The above legislative priorities and the attached Legislative Platform will guide the District's positions on legislative actions throughout the year. However, the District anticipates a flurry of actions with the new Congress relating to the Federal Clean Air Act that warrant more explicit guidance from your Board. Furthermore, it is expected that Congress will attempt to guide clean air policies by influencing EPA actions through its agency oversight and budgetary authorities. A key focus of these efforts is expected to be actions relating to EPA's ability to set new air quality standards and to provide more congressional guidance relating to EPA's definition and treatment of exceptional events.

Consideration of Cost and Feasibility: The current language in the Federal Clean Air Act is silent on the need for EPA to consider cost or feasibility when establishing new air quality standards. Therefore, the Supreme Court has ruled that EPA cannot consider cost or feasibility when establishing health standards.

Provide More Time for the Establishment of New Standards: Currently, the Clean Air Act requires that EPA review and update air quality standards every five years based upon the latest health information. New standards, with new requirements and deadlines, are established even if significant parts of the country are still striving to meet existing standards.

Exceptional Events: Under current EPA policy the extreme drought conditions experienced in 2013/14 in the San Joaquin Valley and other regions in California are not eligible to be declared "exceptional events" since stagnation and lack of precipitation are not considered eligible events.

The following bills related to the above are expected to be re-introduced in the coming Congress:

CASE Act: The Clean Air Strong Economies (CASE) Act by Congressman Olson, Texas (Attachment B). The CASE Act requires that EPA not propose a national primary or secondary ambient air quality standard for ozone that is lower than the existing standard until at least 85 percent of the counties that were nonattainment areas under that standard achieve full compliance with the standard. Additionally, the CASE Act would require that EPA take into consideration feasibility and cost when setting standards and include in the regulatory impact analysis for the proposed and final rule at least one analysis that does not include any calculation of benefits resulting from reducing emissions of any pollutant other than ozone.

ORDEAL Act: The Ozone Regulatory Delay and Extension of Assessment Length (ORDEAL) Act by Senator Jeff Flake, Arizona and Congressman Matt Salmon, Arizona (Attachment C). The ORDEAL Act would lengthen the period between when EPA would review and set a new ozone standard from the current five year interval to ten years.

State and local air agencies are mandated to develop measures to meet federal ambient air quality standards that were set without considering the economic costs. The Act also sets attainment deadlines and implementation milestones that do not fully take into account natural environment (climate, geography, topography), magnitude of the needed emission reductions, availability of technology (maturity of existing control program, time needed to develop new technologies), economic feasibility, and pollution transport from other regions and countries.

Continued effort to develop cost-effective measures in areas such as San Joaquin Valley where businesses are already subject to the toughest air regulations in the nation is extremely difficult. In fact, both San Joaquin Valley and South Coast concluded that technology did not exist to meet even the 1997 8-hour ozone standard. Meeting the new standards that approach background pollution concentrations require transformative measures that need sufficient time to be planned and implemented. For instance, meeting the latest ozone standard requires eliminating all emissions associated with fossil fuel combustion. The deployment of necessary technology and massive fueling infrastructure is virtually impossible before the current deadline of 2032.

More realistic attainment timelines would allow time for technologies to advance and businesses to develop capital improvement programs to incorporate those technologies in an economically feasible fashion. Additionally, efforts to accurately assess the

incremental costs and benefits of new standards would better inform policy makers when reviewing new standards.

Currently, in the San Joaquin Valley, there are six active State Implementation Plans (SIP) in place for ozone and particulate matter, including one for a standard that was revoked. Furthermore, the District is mandate to adopt four additional plans in the next two to three years. There is a great deal of overlap, confusion, and redundancy as multiple plans for the same pollutant are at play.

The CASE Act requires EPA to formally calculate the incremental benefits resulting only from implementing the new standard without adding benefits resulting from implementation of existing standards. Currently, EPA does cite associated health benefits outside of the regulatory process in the public communication literature that accompanies the announcement of the new standards. In doing so EPA often takes credit for health benefits that result from compliance with other existing standards. Some believe that without focus on the incremental benefits of the new standard there is potential to double-count the associated benefits. Additionally, the CASE Act would require that EPA not establish a new ozone standard until at least 85 percent of the counties that were nonattainment areas under the existing standard achieve full compliance with the standard. The ORDEAL Act would extend the period between when EPA would review and set a new ozone standard from the current five year interval to ten years.

Issues to consider in formulating a position on the CASE and ORDEAL Acts
The District does not inherently object to routine review of the health standards and establishment of new standards based upon the latest scientific data. However, as described earlier, the current regiment under the Clean Air Act has led to excessive red tape and administrative burdens without corresponding public health benefit, as well as deadlines that are impossible to meet. However, the District believes that it is possible to continue with the current rigorous regiment for establishing new standards if the implementation mandates are adjusted to avoid redundancy and provide reasonable deadlines that ensure rapid progress toward meeting the standards. These changes can be made with a combination of administration and/or legislative actions at the federal level without any delay in the current standard setting process. Absent these common sense changes to the implementation phase of the Clean Air Act, then the approach taken in the CASE Act and/or the ORDEAL Act may be an appropriate mechanism. Furthermore, these bills might be the only vehicle to focus attention on these issues in the Legislative and Executive branches.

CLEER Act: Commonsense Legislative Exceptional Events Reform (CLEER) Act by Senator Flake, Arizona and Congressman Olson, Texas (Attachment D). These bills were introduced last year and the House bill was cosponsored by Congressman McCarthy and 22 other members of Congress. The bills streamline EPA's exceptional events approval and appeal process. At the District's request, the House bill was amended to include language that clarified that the prolonged and extraordinary drought

and related weather conditions similar to those faced by the Valley in 2013/14 should be considered Exceptional Events.

Issues to consider in formulating a position on the CLEER Act
Until the exceptional weather conditions experienced due to the recent drought, the District was on track to attain the 1997 annual PM2.5 standard before the federally mandated deadline of December 2014. The District's *2008 PM2.5 Plan* satisfied all federal implementation requirements for the 1997 PM2.5 standard at the time of adoption and demonstrated attainment based on projected 2012-2014 PM2.5 levels. All emission reduction commitments under that plan have been fulfilled. Due to the extreme drought, stagnation, strong inversions, and historically dry conditions experienced over the winter of 2013/14, the Valley cannot show attainment even if the Valley experienced zero PM2.5 pollution for the last three quarters of 2014.

In addition to the historically strong atmospheric stability, the winter of 2013/14 also experienced record low precipitation totals, with some locations breaking records over 100 years old. These unprecedented dry conditions exacerbated the air quality challenge during the winter of 2013/14. As a result of the extreme meteorology experienced in the Valley, PM2.5 concentrations reached peak levels that had not been recorded in over a decade, which in turn has increased the Valley's federal PM2.5 design values, making the journey to attainment of the PM2.5 standards even more difficult.

The District supported these bills last year and staff recommends that the District support them again if they are reintroduced.

FISCAL IMPACT:

Approval of this item will have no impact upon the District's budget.

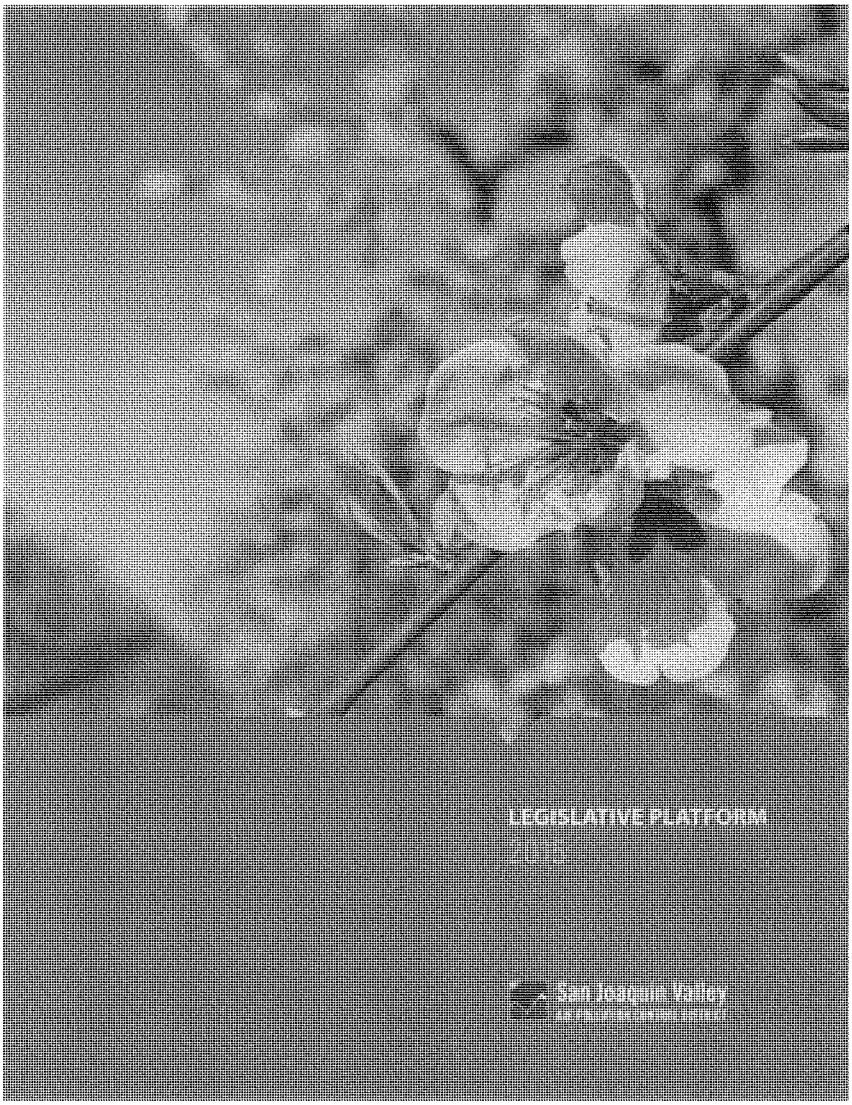
Attachments:
Attachment A: Draft 2015 Legislative Platform (23 pages)
Attachment B: H.R.5505 CASE Act as Introduced in the 113th Congress (2 pages)
Attachment C: S.2514 and H.R.4947 ORDEAL Act as Introduced in the 113th Congress (8 pages)
Attachment D: S.2526 and H.R.4957 CLEER Act as Introduced in the 113th Congress (13 pages)

San Joaquin Valley Unified Air Pollution Control District
Meeting of the Governing Board
January 22, 2015

APPROVE THE DISTRICT'S 2015 LEGISLATIVE PLATFORM AND TAKE POSITIONS ON ANTICIPATED FEDERAL AIR QUALITY LEGISLATIVE PROPOSALS

Attachment A:

Draft 2015 Legislative Platform
(23 PAGES)


LEGISLATIVE PLATFORM
San Joaquin Valley

2015 GOVERNING BOARD ROSTER

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Harold Hanson	Councilmember, City of Bakersfield

Seyed Sadredin - Executive Director/Air Pollution Control Officer

1990 East Gettysburg Avenue
Fresno, CA 93726
(559) 230-6000

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AIR POLLUTION CONTROL DISTRICT

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Jurisdictional Roles

The **San Joaquin Valley Air Pollution Control District (District)** is the local agency in charge of cleaning the air within the eight county region of the San Joaquin Valley (San Joaquin, Stanislaus, Merced, Madera, Fresno, Tulare, Kings, and the valley portion of Kern County). The District has the primary authority in regulating stationary sources of pollution, such as factories, businesses, and industries. Although state and federal laws preempt the District from setting new tailpipe standards for mobile sources of emissions, the District implements indirect source regulations and incentive-based programs to reduce emissions from on-road and off-road sources of air pollution. The primary authority to regulate emissions from mobile sources of air pollution, such as cars and trucks, lies with the state and federal government. In achieving our clean air goals, the District partners with a number of other governmental agencies:

- The **federal government**, primarily through the Environmental Protection Agency (EPA), sets health-based standards for air pollutants. EPA also controls emissions from trucks, trains, planes and boats and oversees state and local actions to improve air quality.
- The **state government,** through the California Air Resources Board (ARB) and the Bureau of Automotive Repair, develops programs to reduce pollution from vehicles and consumer products. The state also oversees the actions of local air districts and city and county agencies.
- **County and city governments** are responsible for land-use planning to address issues such as "urban sprawl" as well as transportation and mass transit planning.

Progress in cleaning our air is often measured in relation to the health-based standards established by the federal government. The state of California also establishes ambient air quality standards that serve as ultimate goals in achieving clean air.

Progress to date

The Valley's geography and meteorology exacerbate the formation and retention of high levels of air pollution. Surrounding mountains and consistently stagnant weather patterns prevent the dispersal of pollutants that accumulate within the Valley. Temperature inversions, while present to some degree throughout the year, can last for days during the winter, holding in nighttime accumulations of pollutants, including wood smoke.

Due to these unique circumstances, no other region in California faces the enormous degree of difficulty that the Valley faces in meeting the ambient air quality standards for ozone and particulates. This is illustrated by the fact that the San Joaquin Valley has far fewer pollutant emissions per square mile "emission density" than other regions in California that have equivalent or even better air quality.

In order to address these challenges, the District has implemented comprehensive regulatory control strategies over the past few decades. Since 1992, the District has

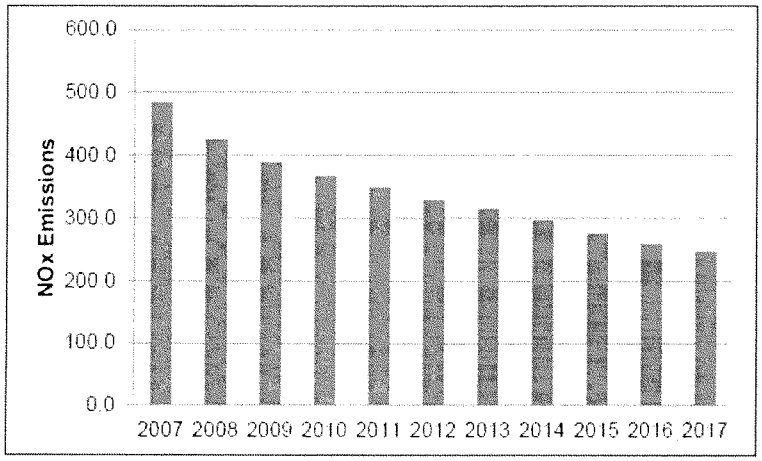
adopted over 500 new rules and amendments to implement this aggressive control strategy. In addition, ARB has adopted stringent regulations for heavy-duty trucks, off-road equipment, and other mobile sources. Measured air quality improvements in the Valley document the success of these innovative and effective rules.

These innovative strategies, such as the first-of-its-kind Indirect Source Review regulation that reduces emissions from residential and commercial development, have proven to be highly effective, as evidenced by the steady rate of improvement in the Valley's air quality. The District's incentive program has become an increasingly important and effective strategy for reducing mobile source emissions that the District does not have direct regulatory authority over, with an expenditure of $500 million and a total public/private investment of over $1 billion. These investments have reduced over 100,000 tons of emissions since 1992.

As illustrated in the figure below (Figure 1), the District's control strategies will continue to significantly reduce emissions in the coming years and continue to provide reductions in air pollution.

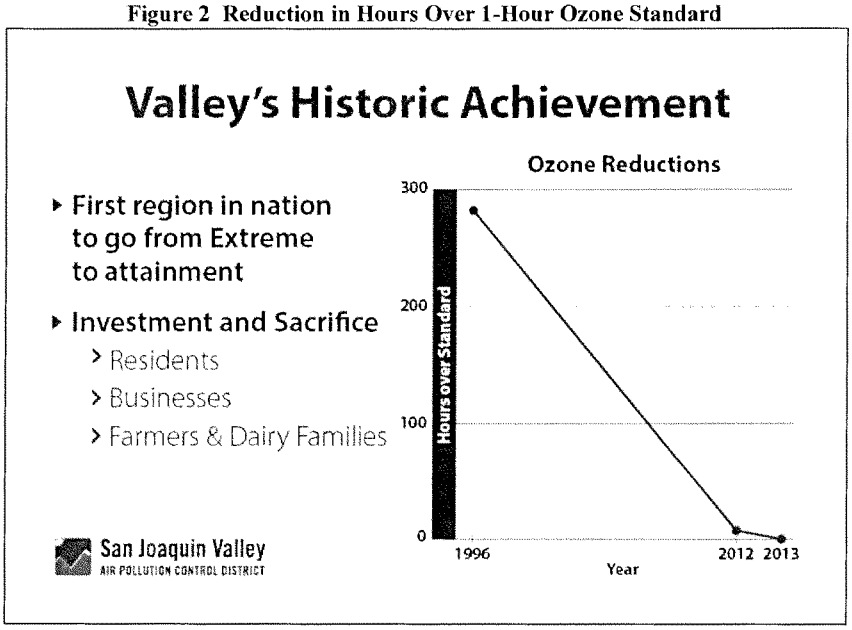
Figure 1

San Joaquin Valley NOx Summer Inventory Trend



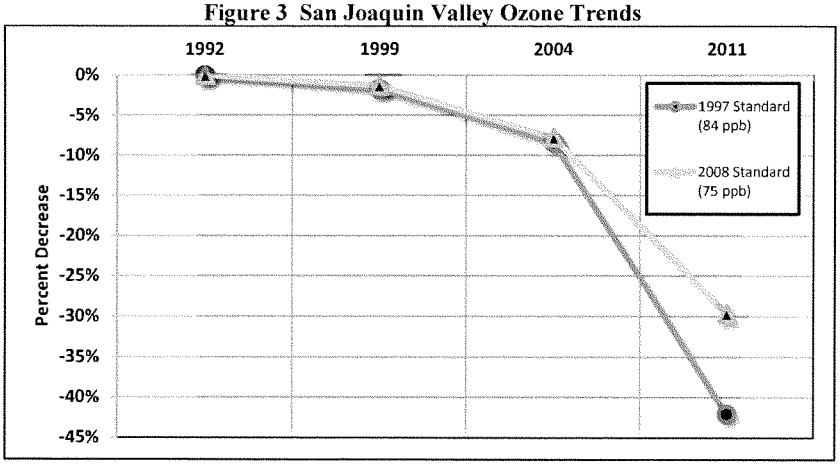
The Valley's efforts to reduce emissions have had a dramatic impact upon the Valley's air quality. For the first time in recorded history, the San Joaquin Valley in 2013 had zero violations of the hourly ozone standard established under the federal Clean Air Act. In 2014, the San Joaquin Valley completed an additional ozone season with zero violations of the 1-hour ozone standard. By contrast, in 1996 the Valley experienced 281 hourly exceedances of this standard throughout the eight-county region (see Figure 2). The District has submitted a formal request to the federal Environmental Protection Agency to declare the Valley in attainment of the key standard and lift the $29 million penalty mandate which Valley residents have been paying since late 2010. Reaching this milestone has been the key focus of the Valley's air quality-management strategies for more than two decades. In 2004, EPA classified the Valley as "Extreme" non-attainment for this standard, meaning that reaching the standard, at that time, was deemed impossible.

Figure 2 Reduction in Hours Over 1-Hour Ozone Standard



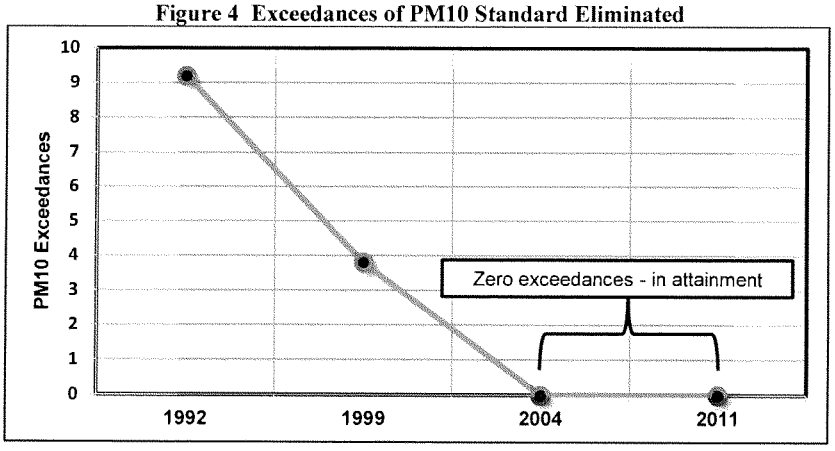
Exceedances of the 1997 and 2008 federal 8-hour ozone standards have dropped by 42% and 30% since 1992, respectively (see Figure 3).

Figure 3 San Joaquin Valley Ozone Trends



In addition to ozone improvements, the Valley has also seen significant improvements in particulate matter levels. The District's residential wood burning curtailments and landmark Conservation Management Practices rule both proved critical in assisting the Valley to eliminate exceedances of the federal PM10 standard and reach attainment of the standard in 2005 (see Figure 4).

Figure 4 Exceedances of PM10 Standard Eliminated



The Valley's 24-hour PM2.5 "design values," used to measure progress relative to the federal standard, have dropped by 40% since 2001, and are now below the 1997 federal 24-hour PM2.5 standard of 65 $\mu g/m^3$.

Remaining Challenges

Despite the significant progress that has been made, many air quality challenges remain. EPA has published two standards for 8-hour ozone that the Valley does not meet. The first was published in 1997, and the second was published in 2008. These standards are expressed as a "design value" level. The Valley has seen a downward trend in 8-hour design values, but there is still a long way to go (Figure 5). In order to meet the 1997 federal ozone standard it is estimated that the Valley would need to reduce emissions by 75% from 2005 levels. In developing a plan for that standard, it was determined that the technology does not currently exist to obtain sufficient reductions to meet the standard. Because of this, the Valley was designated as an "extreme" non-attainment area for the 1997 standard. Since that time, EPA has published a new federal ozone standard (2008 Standard) that will require reductions in excess of 90%. Reductions of this magnitude may not be possible without a virtual elimination of fossil fuel combustion and transition to zero-emissions technology (Figure 6). In December, 2014 EPA published yet another ozone standard that will require even further reductions.

Figure 5 Trend in 8-hour Design Value

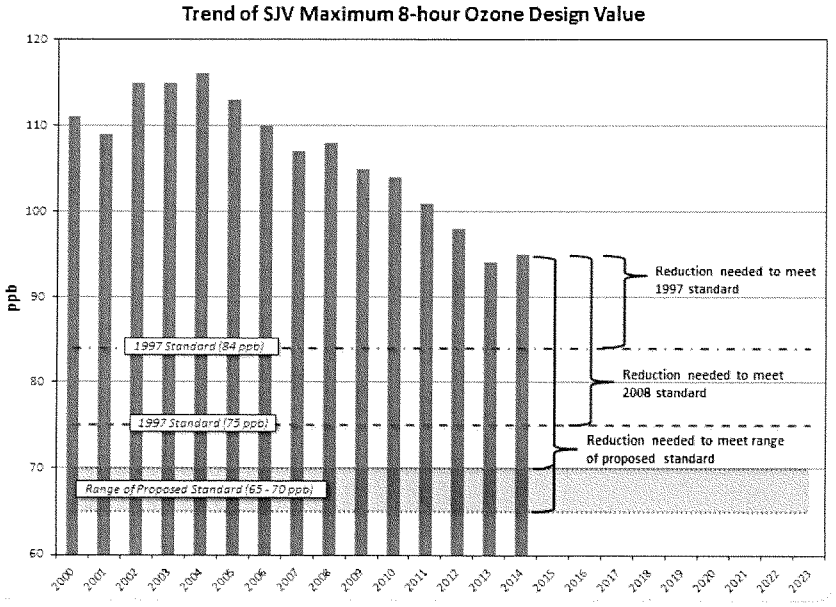
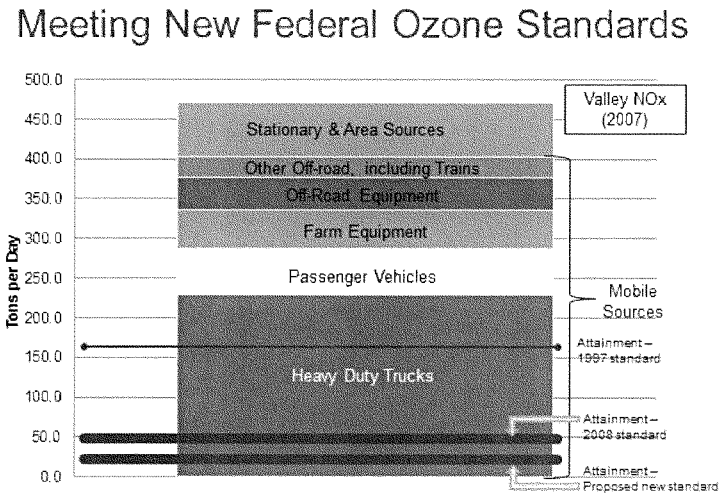


Figure 6 Reductions Needed to Meet 8-hour Standards



Until the exceptional weather conditions experienced due to the recent drought, the District was on track to attain the 1997 annual PM2.5 standard before the federally mandated deadline of December 2014. The District's *2008 PM2.5 Plan* satisfied all federal implementation requirements for the 1997 PM2.5 standard at the time of adoption and demonstrated attainment based on projected 2012-2014 PM2.5 levels. All emission reduction commitments under that plan have been fulfilled. Due to the extreme drought, stagnation, strong inversions, and historically dry conditions experienced over the winter of 2013/14, the Valley cannot show attainment even if the Valley experienced zero PM2.5 pollution for the last three quarters of 2014.

In addition to the historically strong atmospheric stability, the winter of 2013/14 also experienced record low precipitation totals, with some locations breaking records over 100 years old. These unprecedented dry conditions exacerbated the air quality challenge during the winter of 2013/14. As a result of the extreme meteorology experienced in the Valley, PM2.5 concentrations reached peak levels that had not been recorded in over a decade, which in turn has increased the Valley's federal PM2.5 design values, making the journey to attainment of the PM2.5 standards even more difficult.

2015 LEGISLATIVE PRIORITIES

The following legislative priorities will provide policy guidance for legislative action and recognize the unique needs of the District during the upcoming legislative session:

1. **(Federal) Streamline Implementation of the Clean Air Act:** Since its adoption, the Clean Air Act has led to significant improvements in air quality and public health benefits throughout the nation. However, in areas of the nation with mature local air quality management programs, we have reached the point of diminishing returns. After more than 20 years since the last amendments to the Clean Air Act in 1990 (CAA), our experience shows that many well-intentioned provisions are leading to unintended adverse consequences. The antiquated provisions of the Clean Air Act are now leading to confusion, and lack of updated congressional directive has rendered courts as policy makers.

   The District supports the well-intentioned concepts in the Clean Air Act that call for routine review of health-based air quality standards, clean air objectives that are technology-forcing, and clean-air deadlines that ensure expeditious clean-up and timely action. We recommend the Act be amended to allow for consideration of the following critical factors in establishing attainment deadlines and implementation milestones for new standards (A full discussion of these issues can be found in Appendix A):

   - **Upcoming Health Standards and Associated Deadlines are impossible to Meet.** The Clean Air Act requires that EPA set ambient air standards based solely on health impacts and the timelines for meeting the new standards are prescribe by the act with no ability to consider economic or technological feasibility.

     We recommend the Act be amended to allow for consideration of the following critical factors in establishing attainment deadlines and implementation milestones for new standards:

     - Natural environment (climate, geography, topography)
     - Magnitude of the needed emission reductions
     - Availability of technology (maturity of existing control program, time needed to develop new technologies)
     - Economic feasibility
     - Pollution transport from other regions and countries

     The Act should allow region-specific deadlines that take into account the above considerations subject to review and approval by EPA.

   - **The current five year review of standards is too short and has led to overlapping requirements and chaotic transitions between standards.** Under the current system, EPA is finalizing new standards for pollutants prior to a

thorough review of plans for the previous standards. Currently, in the San Joaquin Valley there are six active SIPs in place for ozone and particulate matter, including one for a standard that was revoked. There is a great deal of overlap, confusion, and redundancy as multiple plans for the same pollutant are at play.

We recommend a two-fold solution. First, we recommend that the timeline for standard review be extended. Second we recommend that new standards and the associated mandates subsume those associated with the old standard with adequate safeguards to prevent any backsliding.

- **Requiring contingency measures in extreme nonattainment areas is irrational and unnecessary.** The Clean Air Act requires all attainment plans to include contingency measures, defined as extra control measures that go into effect without further regulatory action, if planned emissions controls fail to reach the goals or targets specified in the attainment plan. These requirements do not make sense in "extreme" non-attainment areas, that by definition have already implemented all available and foreseeable measures and still need additional, yet to be identified technologies to reach attainment.

  We recommend that the Act be amended to waive the requirement for contingency measures in areas classified as "extreme" non-attainment by EPA.

- **Section 185 of the Clean Air Act, which requires businesses in "Severe" and "Extreme" non-attainment areas to pay non-attainment penalty fees, is unfair and ineffective.** When Section 185 was first enacted by the United States Congress, it was intended to serve as a hammer compelling stationary sources to install additional controls to reduce emissions and expedite attainment. Given today's circumstances, however, these fees, if applied to stationary sources, will not have the intended impact in San Joaquin Valley. Most stationary sources in the San Joaquin Valley are already equipped with Best Available Retrofit Control Technology (BARCT) or Best Available Control Technology (BACT). Under these circumstances, Section 185 has become a punitive fee with no real ability by most facilities to reduce their emissions. The only options available to Valley businesses to reduce or avoid the fees would be to curtail production or go out of business. Given the Valley's chronic high unemployment rates combined with the current global and regional economic distress, the consequences can be devastating.

  EPA has devised and approved alternative means of complying with Section 185 requirements through the use of revenue from other sources. This approach, however, has been legally challenged by some groups arguing lack of authority by the EPA. To remove legal uncertainty surrounding this matter, we recommend that the Act be amended to repeal Section 185 penalties for businesses that have already employed Best Available Control Technology, or amend the Act to codify the alternative compliance means approved by EPA.

- **The Clean Air Act requirements for severe and extreme ozone nonattainment areas to address vehicle-related emissions growth must be clarified.** CAA section 182(d)(1)(A) requires such areas to develop enforceable transportation control measures (TCMs) and transportation strategies *"to offset any growth in emissions from growth in vehicle miles traveled ... and to attain reduction in motor vehicle emissions as necessary."* An area's vehicle miles traveled (VMT) may increase due to increases in population (i.e., more drivers), people driving further (i.e., sprawl), or increases in pass-through traffic (i.e., goods movement).

  Historically, EPA has allowed the use of vehicle turnover, tailpipe control standards, and the use of alternative fuels to offset the expected increase in VMT and related emissions. A recent court decision, has called EPA's current approach into question. Any change in approach that would require regions to offset vehicle growth regardless of population growth, and without recognition of emission reduction measures such as vehicle turnover and tailpipe control standards, would have a significant impact on many regions' ability to develop an approvable attainment strategy and, under a strict interpretation, would actually render attainment impossible. A less inclusive section 182(d)(1)(A) approach would effectively penalize nonattainment areas for having population growth, and would not give credit to the significant emissions reductions being achieved from motor vehicles. To illustrate this issue, such an interpretation applied to the District's 1997 8-hour ozone standard attainment plan would require the elimination of 5.1 million vehicles, while the vehicle population of the Valley is projected to be only 2.6 million vehicles in 2023.

  EPA established guidance to address this issue that provides a potential path for reasonably addressing this CAA requirement. However, the path provided under this guidance will undoubtedly be challenged in court as it is utilized by regions like the San Joaquin Valley in the coming years. To provide certainty moving forward, the CAA should be amended to clearly include the methodology for reasonably satisfying this requirement.

- **Transition to Health Risk-Based Approach in lieu of the Current Mass Based Approach.** The new standards being considered by EPA encroach on background concentrations in the San Joaquin Valley, and will require significant reductions in emissions from the already lower levels that have been achieved through decades of implementing clean air strategies. In light of these difficult circumstances, it is imperative to craft innovative implementation strategies that enable regions with mature air quality programs to focus efforts on meeting new standards in the most expeditious fashion through deployment of scarce resources in a manner that provides the utmost benefit to public health. Towards that end, we recommend a more strategic approach in which public health serves as the key factor in prioritizing control measures, regulated pollutants, and sources of emissions. Utilizing a "Health Risk-Based" approach in lieu of the current "Mass-Based" approach in implementing

health-based standards would provide a more cost effective and health protective framework.

The current mass-based approach can essentially be characterized as a shotgun approach where all pollutants and their species are treated equally regardless of their public health impact. By contrast, a health risk-based approach will be a more strategic approach that targets pollutants and species that have the greatest impact on improving public health. Under the health risk-based approach, the following scientific factors could take taken into account in establishing standards and associated clean air strategies:

- Particle size and surface area
- Chemistry and toxicity
- Effect on formation or reduction of secondary pollutants (e.g., NOx and VOC impact on ozone formation, ammonia and ammonium nitrates)

For example, the latest health research has shown that with regard to PM2.5, not all particles are the same, and that the multiple types of PM2.5 have a significantly varying severity of health effects. EPA has recognized this in its consideration of potential new PM2.5 standards and, while not proposing a strategic approach that takes this science into account, has cited the potential of developing strategies in the future that utilize a more targeted approach than the existing "mass-based approach" that treats all PM2.5 the same.

2. **(State) Increase State Subvention Funding to Provide More Support for Unfunded Mandates:** Local air pollution control and air quality management districts receive subvention funds to support important local air program activities. These funds are allocated from the Motor Vehicle Account through the budget of the California Environmental Protection Agency, under the Air Resources Board section. Local subvention funds were initially provided in 1972, and were increased several times to address the costs of inflation. Despite a significant increase in unfunded mandates, for over twenty years there have been no adjustments for inflation, or added responsibilities. The District, therefore, supports an increase in Subvention funds to help offset increases in costs and responsibility. The District currently receives $900,000 per year which is less than 2% of the District's annual operating budget.

3. **(State) Policies/Guidelines for the Carl Moyer Program:** The Carl Moyer Program has been a valuable source of incentive funds to obtain voluntary emissions reductions from mobile sources of emissions. AB 8 was recently adopted to extend funding for the Carl Moyer program through 2023. The following policies should guide the state as new guidelines/requirements are developed for the program through the new sunset date:

   a) The focus of the Carl Moyer Program should continue to be the reduction of criteria pollutants. Efforts to include greenhouse gas emissions projects

should only be considered as co-benefits to projects that are principally designed for the reduction of criteria pollutant emissions.

b) Regional funding formulas should continue to utilize a region's non-attainment status, and the severity of the air quality problem, as the primary factor in determining the regional breakdown of statewide Carl Moyer funding.

c) With respect to regulatory deadlines, incentive funding should be decoupled from regulatory enforcement. Projects that provide cost-effective and surplus emission reductions should be eligible for funding regardless of compliance status with respect to regulatory deadlines.

4. **(State) Cap and Trade Revenues:** The cap and trade program implemented by ARB sets up a mechanism by which affected sources can procure allowances or offsets to meet specified and declining caps on their greenhouse gas emissions. In other words, affected sources will be allowed to invest in reductions in other areas as mitigation for their local emissions. This scenario can potentially lead to adverse impacts in areas that are already disproportionately impacted by criteria pollutant emissions. The Cap and Trade Program generates in excess of $1 billion annually. The state allocates these funds to programs across a number of state agencies. The following overarching policies should be applied as the state considers funding projects and programs from the Greenhouse Gas Reduction Fund:

a) Projects funded with Cap and Trade revenues should achieve greenhouse gas reductions, with priority given to projects that achieve reductions in criteria pollutants as well.

b) A portion of Cap and Trade revenues should be directed to projects in areas that are already disproportionately impacted by air pollution.

c) Policies should be put in place to ensure that programs funded with Cap and Trade revenues meet or exceed the provisions of SB 535 that require a minimum of 25% of the Cap and Trade revenue be spent to benefit disadvantaged communities and that 10% of the revenue be spent in those communities. In determining what communities are disadvantaged, the state is required to prioritize communities that face significant environmental challenges as well as economic challenges.

5. **(State/Federal) Oppose Climate Change Measures that Result in Public Health Detriment Due to Increases in Criteria or Toxic Air Emissions:** Although climate change measures provide for many co-benefits in reducing both greenhouse gasses and criteria pollutant emissions, there are some measures that may lead to increases in criteria pollutant or toxic emissions. Therefore the District will support reasonable climate protection measures that reduce

greenhouse gas emissions as well as toxic and criteria pollutants. The District will oppose climate change measures that are detrimental to public health by leading to increases in toxic or criteria pollutant emissions in already impacted areas.

6. **(State/Federal) Disadvantaged Community Policies:** The San Joaquin Valley is home to a number of disadvantaged communities that deserve care and attention. The District will adhere to the following principles in pursuing efforts to identify and address the needs of these communities:

   a) The District will support measures that improve quality of life and economic welfare. In identifying communities of need, both socioeconomic and environmental impacts should be considered. The District supports CalEPA's California Communities Environmental Health Screening tool (CalEnviroScreen) as the appropriate tool for identifying disadvantaged communities.

   b) The District considers poverty as a key factor contributing to diminished public health and will oppose efforts that lead to "redlining" these communities and inhibit economic growth.

   c) The District will support efforts to target additional state and federal resources to mitigate issues faced in disadvantaged communities.

   d) The District will oppose measures that dilute local control by diverting local revenues or the authority over the expenditure of local resources to the state or federal government. Reduced local control will weaken local enforcement programs. Local agencies are better suited to efficiently and effectively identify and address community needs.

7. **(State/Federal) Seek funding and other support from the State Air Resources Board and Federal Environmental Protection Agency (EPA) to install and operate additional air quality monitoring instruments throughout San Joaquin Valley:** The District operates one of the most extensive air monitoring networks in the nation. Data from these monitors is utilized to measure progress and assess the need for further reductions needed to attain ambient air quality standards established by EPA. Moreover, the District is also committed to providing accurate and timely air quality information to educate and empower the public to protect themselves during poor air quality episodes. This is accomplished utilizing the air monitoring data through the District's first-in-the-nation Real-Time Air Advisory Network (RAAN).

   Installation, operation and maintenance of the Districts air monitoring network is resource intensive. The District's annual operating appropriation for air monitoring is approximately $2.9 million. The increase in federal mandates relating to air monitoring (more monitors and more labor intensive QA/QC and

reporting procedures for existing monitors) combined with the need for more monitoring capabilities to satisfy the District's initiative to provide neighborhood by neighborhood air quality information require additional resources.

8. **(State/Federal) Support efforts that provide for cost-effective alternatives to open burning of agricultural waste:** In 2003, state law was amended to require the District to the limit open burning of agricultural material in accordance with a phased-in schedule of deadlines. In addition to those requirements, the state law authorizes the District to postpone the burn prohibition dates for specific types of agricultural material if the District makes three specific determinations and the Air Resources Board (ARB) concurs. The determinations are: (1) there are no economically feasible alternatives to open-burning of the specific type of material; (2) open-burning the specific type of material will not cause or substantially contribute to a violation of a National Ambient Air Quality Standard (NAAQS); and (3) there is no long-term federal or state funding commitment for the continued operation of biomass facilities in the Valley or the development of alternatives to burning. Working closely with the stakeholders over the years to identify economically feasible alternatives to open burning of various agricultural materials, the District has achieved an 80% reduction in agricultural burning.

   Given current energy policy in California, biomass power facilities, which are one of the primary alternatives to agricultural burning, are in jeopardy. Many biomass plants in the Valley are nearing the end of their long-term contracts with utilities and find themselves in a position where the power that they provide is not the type of power that utilities are seeking (baseload vs. intermittent) and that the prices being offered for new contracts are too low to support their operations.

   The District will support efforts to help level the playing field and provide fair competition between biomass plants and other renewable sources of power. The District will also support research and development of alternatives to the open burning of agricultural waste.

9. **(State/Federal) Technology Advancement:** The San Joaquin Valley Air Basin is classified as an "Extreme" non-attainment area for ozone. This means that that technology does not currently exist to bring the region into attainment of the federal ozone standard. Meeting the newest air quality standards will require transformative measures and technologies to achieve near zero emissions. In order to further develop technology to close the gap in required emissions reductions, the District operates a Technology Advancement Program. Along with its own resources, the District is seeking state and federal assistance to advance technology in the following areas:

   a) Mobile sources projects that demonstrate zero- or near-zero-emissions solutions to mobile source categories with emphasis on goods and people movement, off-road equipment, or agricultural equipment.

b) Renewable energy projects that focus on overcoming the barriers that prevent the use or adoption of zero-emission renewable energy sources or reduce emissions from renewable energy systems to make them cleaner than comparable non-renewable alternatives.

c) Waste solutions projects that focus on waste systems or technologies that minimize or eliminate emissions from existing waste management systems and processes, including waste-to-fuel systems, such as dairy digesters and other bio-fuel applications.

10. **(State/Federal) Support adequate resources and policies to reduce the impact of wildfires and their attendant public health impact:** Wildfires result in significant loss of life and property. Air pollution generated from wildfires is enormous and well exceeds the total industrial and mobile source emissions in the San Joaquin Valley. These emissions result in significant adverse public health impacts in the San Joaquin Valley and in many regions throughout California. In the summer of 2008, California experienced a record number of wildfires, and the resulting emissions caused serious public health impacts and unprecedented levels of PM2.5 and ozone in the San Joaquin Valley and other regions throughout the state. Historically clean rural areas throughout the state and in the San Joaquin Valley experienced their worst air quality in decades, and pollutant levels and the number of daily exceedances of the health-based standards were significantly higher than ever before in recorded history.

Reducing wildfires and the resulting air pollutants requires a sustained and multi-faceted approach that employs effective measures to reduce fuel supplies and adequate resources to manage fires when they occur. Towards that end, the San Joaquin Valley Air Pollution Control District supports policies and initiatives that would encourage rapid disposal of the fuel supply, including the following:

a. Additional financial and staffing resources for public and private land managers to conduct prescribed burning as an effective means for reducing fuel supplies that lead to large and uncontrollable wildfires.

b. Additional resources to manage wildfires when they occur.

c. Lessening or removal of contradictory environmental protection policies that prohibit the use of mechanized methods, or prescribed burning to reduce fuels when those are the only feasible methods available.

d. Changes in the federal policies that better incorporate air quality concerns by shifting focus to prescribed burning and employing fire management techniques that reduce air quality impact when wildfires occur.

GENERAL PRINCIPLES OF THE LEGISLATIVE PLATFORM

The following general principles will provide policy guidance for legislative action:

LOCAL: To fulfill the goals of the District, to maintain the ability to develop and implement control strategies to address stationary and area pollutants, and to achieve ambient air quality standards, the following principles will guide District policy:

1. Support legislation that retains the Governing Board's control over the use of emission reduction credits (ERCs) throughout the Valley.

2. Oppose legislation that usurps the District's authority to determine the cost-effectiveness of proposed District rules.

3. Support legislation that encourages the management of air quality on a regional basis, particularly in the Valley, and not on a statewide basis, in order to assure that local concerns are recognized.

4. Support and actively advocate increases in the District Subvention based on inflation and increased mandates.

5. Support legislation that retains local enforcement and discretionary authority for Notices to Comply/Notices of Violation (NTC/NOV fines, adjudication, etc.).

6. Support legislation that promotes the creation and use of District-operated self-audit and inspection programs. Such legislation will enhance the District's ability to offer incentive- based programs to Valley businesses in ways that do not conflict with state and federal law.

7. Oppose all legislation that transfers any part of local permitting authority to the state or federal governments. Past transfers of the District's permitting authority have proved to prolong the permitting process without any corresponding benefit to air quality.

8. Oppose legislation that limits the District's ability to regulate the installation or utilization of wood-burning fireplaces and wood-burning heaters.

PROPORTIONAL MOBILE AND STATIONARY SOURCE CONTROLS: To achieve emissions reductions that are adequate to attain air quality standards, it is imperative that all sources are adequately controlled according to their contribution the Valley's air quality challenges. In order to achieve this objective, the following principles will guide District policy.

1. Continue to support legislation that requires the USEPA to develop and implement programs that effectively and efficiently control interstate mobile

sources including, but not limited to, trains, trucks, boats, and planes. Support federal actions that will provide cleaner operating vehicles. Support legislation that requires improved emission standards for buses.

2. Support legislation that requires federal sources, including trains, trucks and ships, to contribute their "fair share" of the emission reductions required for attainment of air quality standards in the San Joaquin Valley. This would include mitigating emissions associated with the implementation of the North American Free Trade Agreement, requiring more stringent controls on locomotives, and reducing emissions from ships while they are in port.

STATE/FEDERAL: To support state and federal means of addressing, without duplication, the need for better air quality in the San Joaquin Valley, and to support state and federal actions that are effective and economically feasible, the following principles will guide District policy:

1. Support state and federal legislation that would preserve and enhance the ability of local governments to adequately finance mandated and essential services.

2. Support federal legislation or regulations that alleviate administrative burdens that are unnecessary for the protection of air quality, associated with permitting requirements.

3. Support legislation to streamline the permitting process at the local level that is efficient and effective. Oppose legislation that negatively affects the District's ability to protect and improve air quality.

4. Support legislation to reduce the duplicative oversight responsibilities of state agencies and boards vis a vis the regional air districts.

5. Support legislation that eliminates duplication between state and federal air quality agencies. Allow a single permit system that satisfies both state and federal regulations. California has the strictest air quality standards in the country. Federal duplication only hinders business and does not improve air quality.

6. Sponsor or support legislative options that would increase funding to the District to develop Valley-specific options for attainment.

7. Support legislation that promotes energy conservation and efficiency programs for energy end-users. Reduced energy use will result in lower pollutant emissions and a more stable electrical distribution system.

8. Support legislation that allows "net metering" or feed in tariffs for alternative energy projects.

9. Support legislation that encourages low-emission utilization of waste gas as an alternative to waste gas venting or flaring.

10. Seek adequate funding from ARB and EPA to implement state and federal air quality mandates.

11. Oppose efforts to allow the sale and use of safe and sane fireworks outside of the period surrounding the 4th of July.

12. The District supports the establishment of an Air Quality and Health Empowerment Zone Designation that would provide financial assistance to regions that have significant air quality, health, and economic challenges. This new program would provide financial assistance for incentive programs in areas that face significant air quality, health, and economic challenges. Given the Valley's air quality challenges and continued double digit unemployment rates, the Valley would be a prime candidate for designation under this new program. The program would provide a mechanism for ongoing appropriations for incentive programs to accelerate the introduction of new emissions reduction technologies.

MOBILE SOURCE AND TRANSPORTATION: To address issues dealing with mobile source reductions and transportation alternatives; to achieve mobile source reductions in addition to those currently approved in air attainment plans; to create market-based incentives for mobile source emissions; and to encourage and promote public transportation improvements; the following principles will guide District policy:

1. Support funding for mobile source reductions.

2. Support legislation that provides options for local air districts for pilot incentives to reduce mobile source emissions.

3. Support state and federal legislation and regulations to further promote cost-effective and clearly defined strategies associated with vehicle emission reductions and effective statewide vehicle Inspection & Maintenance programs.

4. Support legislation to assist regional transportation authorities' efforts for multi-modal transit systems that ensure ongoing growth in ridership by promoting and encouraging maximum public use.

5. Support measures that will improve the efficiency and effectiveness of the smog check program including reducing testing cost, better mechanisms to identify high emitters, and enhanced oversight of the smog-check stations.

6. Support legislation and efforts to enhance interregional transit options that provide an alternative to driving. This should include options for the movement of both people and goods within the San Joaquin Valley and to adjacent regions.

7. Oppose legislation that restricts the District's use of Governing Board-authorized funds for cost effective emission control projects.

8. Support legislation that simplifies Transportation Conformity compliance and synchronizes conformity related transportation planning requirements with air quality planning requirements and deadlines.

9. Support legislation that puts organizational structures in place that facilitate inter-regional and intra-regional solutions for the efficient movement of people and goods through the San Joaquin Valley utilizing a variety of transportation modes.

10. Support air quality funding and programs in the federal transportation bill re-authorization. The following are general principles to guide the District during the development of federal surface transportation reauthorization legislation.

    a. Transportation Sources and Air Pollution-Provisions should be included which improve air quality and reduce health impacts on the public.

    b. Congestion Relief and Air Quality-Transportation projects designed to reduce congestion must also be designed to help improve air quality.

    c. Projects with Specific Air Quality Benefits-Programs in the bill should ensure that a sizeable portion of federal transportation funds should be reserved for purposes that are designed to substantially reduce air pollution in the transportation sector.

    d. Conformity Provisions Must Be Strengthened-Efforts should be made to strengthen existing "transportation conformity" requirements so they implement all feasible emission reductions and achieve the reductions needed for long-term air quality attainment.

    e. Funded Projects Should Achieve Emissions Benefits Commensurate with Regional Air Quality Needs -Pollution reductions should be sufficient so that the transportation sector contributes its fair share to timely attainment of National Ambient Air Quality Standards. Needed emission control actions may vary by area with the most aggressive emission controls required in areas with the most difficult attainment challenges.

    f. Urge Zero-Emission Technologies in "Extreme" Ozone Nonattainment Areas-Due to the large additional emission reductions needed in Extreme Ozone nonattainment areas, programs should be established for projects that utilize zero emission technologies, including, but not limited to, electrification.

g. GHG Emissions and Criteria Pollutants-Projects that reduce or offset greenhouse gas emissions, or contribute to a set-aside-fund for GHG reduction, should be included and efforts to reduce greenhouse gas emission levels should be undertaken in concert with efforts to reduce criteria and toxic pollutants. Actions to produce GHG offsets should not result in greater emissions of toxic or criteria pollutants.

h. Authorize Projects Reducing Emissions-Priority consideration should be made to authorize funding for projects that support the long-term attainment needs of an area, including, but not limited to programs that
   - include or facilitate the use of public transit and efficient rail,
   - are built with the cleanest construction equipment available, and
   - include the use of low-emission equipment where state and local governments would be preempted from requiring emission controls.

i. Funding Requirements-Programs that achieve transportation goals should be designed with requirements, conditions, or even mandates that ensure that projects funded through those programs achieve documented air quality benefits.

j. Funding sources-Alternative and creative sources of funding which increase the amount of funds allocated for surface transportation and/or air quality should be encouraged.

k. Air Quality Agency Participation in Decision Making Process-Decisions to fund projects or programs should be made with involvement by state air quality agencies or, in states which have local air quality agencies, by such local agencies and such funding must be consistent with the respective State Implementation Plan. At a minimum, air agencies should approve emissions impact estimates and determine compliance with air quality funding criteria, such as those specified above.

l. Increase Maximum Truck Weight Limit-The District supports increasing the federal truck weight limit to 97,000 provided any potential safety and highway maintenance issues are addressed.

ALTERNATIVE COMPLIANCE OPTIONS: To have the ability to provide for compliance flexibility when dealing with businesses addressing air quality rules and regulations, and to ensure that alternative compliance options provide adequate measures to at least meet the required emission reductions necessary, the following principles will guide District policy:

1. Support legislation that provides for market-based incentives that achieve equivalent reduction in air emissions in a more cost-effective fashion.

2. Oppose legislation that diminishes the District's ability to write permits that are practical and enforceable.

3. Support legislation that would prohibit an increase in assessed property value for new equipment installed solely for the purpose of meeting the requirements of District Rules and Regulations.

4. Support legislation that encourages the generation of mobile source emission reduction credits.

TOXIC AIR EMISSIONS: To ensure the protection of public health and to minimize exposure to significant toxic pollutants, the following principles will guide District policy:

1. Oppose legislation that results in the release of cancer-causing and other toxic emissions in quantities that pose significant risks to public health.

2. Support legislation that upholds the requirement for public notification when significant toxic pollutants are located in close proximity to a given neighborhood.

3. Support legislation that allows for the integration of state and federal air toxic mandates while protecting public health.

4. Support legislation that calls for cleaner-burning alternative fuels.

5. Support measures that result in early risk reduction without costly and unnecessary risk assessment work.

San Joaquin Valley Unified Air Pollution Control District
Meeting of the Governing Board
January 22, 2015

APPROVE THE DISTRICT'S 2015 LEGISLATIVE PLATFORM AND TAKE POSITIONS ON ANTICIPATED FEDERAL AIR QUALITY LEGISLATIVE PROPOSALS

Attachment B:

H.R. 5505 CASE Act as Introduced in the 113th Congress
(2 PAGES)

I

113TH CONGRESS
2D SESSION

H. R. 5505

To improve the establishment of any lower ground-level ozone standards, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

SEPTEMBER 17, 2014

Mr. OLSON (for himself, Mr. LATTA, Mr. SHIMKUS, Mr. WEBER of Texas, Mr. CASSIDY, Mr. FLORES, Mr. SMITH of Texas, Mr. HALL, Mr. MCCLINTOCK, Mr. HULTGREN, Mr. TIPTON, Mr. MCKINLEY, Mr. SMITH of Missouri, Mr. JONES, Mrs. NOEM, Mrs. LUMMIS, Mr. POMPEO, Mr. HARPER, Mr. BRADY of Texas, Mr. LONG, Mr. JOHNSON of Ohio, and Mr. CUELLAR) introduced the following bill; which was referred to the Committee on Energy and Commerce

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A BILL

To improve the establishment of any lower ground-level ozone standards, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Clean Air, Strong Economics Act".

SEC. 2. GROUND-LEVEL OZONE STANDARDS.

Notwithstanding any other provision of law (including regulations), in promulgating a national primary or

1 secondary ambient air quality standard for ozone, the Ad-
2 ministrator of the Environmental Protection Agency—
3 (1) shall not propose a national primary or sec-
4 ondary ambient air quality standard for ozone that
5 is lower than the standard established under section
6 50.15 of title 40, Code of Federal Regulations (as
7 in effect on January 1, 2014), until at least 85 per-
8 cent of the counties that were nonattainment areas
9 under that standard as of January 1, 2014, achieve
10 full compliance with that standard;
11 (2) shall only consider all or part of a county
12 to be a nonattainment area under the standard on
13 the basis of direct air quality monitoring;
14 (3) shall take into consideration feasibility and
15 cost; and
16 (4) shall include in the regulatory impact anal-
17 ysis for the proposed and final rule at least 1 anal-
18 ysis that does not include any calculation of benefits
19 resulting from reducing emissions of any pollutant
20 other than ozone.

○

San Joaquin Valley Unified Air Pollution Control District
Meeting of the Governing Board
January 22, 2015

APPROVE THE DISTRICT'S 2015 LEGISLATIVE PLATFORM AND TAKE POSITIONS ON ANTICIPATED FEDERAL AIR QUALITY LEGISLATIVE PROPOSALS

Attachment C:

S.2514 and H.R.4947 ORDEAL Act as Introduced in the 113th Congress
(8 PAGES)

II

113TH CONGRESS
2D SESSION

S. 2514

To amend the Clean Air Act to delay the review and revision of the national ambient air quality standards for ozone.

IN THE SENATE OF THE UNITED STATES

JUNE 24, 2014

Mr. FLAKE (for himself, Mr. MCCAIN, Mr. RISCH, Mr. WICKER, Mr. CRAPO, Mr. SESSIONS, Mr. JOHNSON of Wisconsin, Mr. VITTER, Mr. ENZI, Mr. BARRASSO, Mr. COATS, Mr. CORNYN, and Mr. THUNE) introduced the following bill; which was read twice and referred to the Committee on Environment and Public Works

---

A BILL

To amend the Clean Air Act to delay the review and revision of the national ambient air quality standards for ozone.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Ozone Regulatory Delay and Extension of Assessment Length Act of 2014" or the "ORDEAL Act of 2014".

SEC. 2. NATIONAL AMBIENT AIR QUALITY STANDARDS.

Section 109(d) of the Clean Air Act (42 U.S.C. 7409(d)) is amended—

(1) in paragraph (1)—

(A) in the first sentence, by striking "(d)(1) Not later than December 31, 1980, and at five-year intervals" and inserting the following:

"(d) REVIEW AND REVISION OF CRITERIA AND STANDARDS; INDEPENDENT SCIENTIFIC REVIEW COMMITTEE; APPOINTMENT; ADVISORY FUNCTIONS.—

"(1) REVIEW AND REVISION OF CRITERIA AND STANDARDS.—

"(A) IN GENERAL.—Except as provided in subparagraph (C), not later than December 31, 1980, and at 10-year intervals";

(B) in the second sentence, by striking "The Administrator" and inserting the following:

"(B) EARLY AND FREQUENT REVIEW AND REVISION.—Except with respect to any national ambient air quality standard promulgated under this section for ozone concentrations, the Administrator"; and

(C) by adding at the end the following:

"(C) NATIONAL AMBIENT AIR QUALITY STANDARDS FOR OZONE CONCENTRATIONS.—Not earlier than February 1, 2018, but not

later than December 31, 2018, and at 10-year intervals thereafter, the Administrator shall, with respect to national ambient air quality standards for ozone concentrations—

"(i) complete a thorough review of any standard promulgated under this section; and

"(ii) make revisions to the standards described in clause (i) and promulgate new standards as may be appropriate in accordance with section 108 and subsection (b)."; and

(2) in paragraph (2)(B)—

(A) by striking "(B) Not later than January 1, 1980, and at five-year intervals" and inserting the following:

"(B) REVIEW.—

"(i) IN GENERAL.—Except as provided in clause (ii), not later than January 1, 1980, and at 10-year intervals"; and

(B) by adding at the end the following:

"(ii) NATIONAL AMBIENT AIR QUALITY STANDARDS FOR OZONE CONCENTRATIONS.—Not earlier than February 1, 2018, and at 10-year intervals thereafter,

the committee referred to in subparagraph (A) shall, with respect to national ambient air quality standards for ozone concentrations—

"(I) complete a review of any standard promulgated under this section; and

"(II) recommend to the Administrator any new standard and any revision to the standards described in subclause (I) as may be appropriate under section 108 and subsection (b).".

○

I

113TH CONGRESS
2D SESSION

H. R. 4947

To amend the Clean Air Act to delay the review and revision of the national ambient air quality standards for ozone.

IN THE HOUSE OF REPRESENTATIVES

JUNE 24, 2014

Mr. SALMON (for himself and Mr. OLSON) introduced the following bill; which was referred to the Committee on Energy and Commerce

---

A BILL

To amend the Clean Air Act to delay the review and revision of the national ambient air quality standards for ozone.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Ozone Regulatory Delay and Extension of Assessment Length Act of 2014" or the "ORDEAL Act of 2014".

SEC. 2. NATIONAL AMBIENT AIR QUALITY STANDARDS.

Section 109(d) of the Clean Air Act (42 U.S.C. 7409(d)) is amended—

(1) in paragraph (1)—

(A) in the first sentence, by striking "(d)(1) Not later than December 31, 1980, and at five-year intervals" and inserting the following:

"(d) REVIEW AND REVISION OF CRITERIA AND STANDARDS; INDEPENDENT SCIENTIFIC REVIEW COMMITTEE; APPOINTMENT; ADVISORY FUNCTIONS.—

"(1) REVIEW AND REVISION OF CRITERIA AND STANDARDS.—

"(A) IN GENERAL.—Except as provided in subparagraph (C), not later than December 31, 1980, and at 10-year intervals";

(B) in the second sentence, by striking "The Administrator" and inserting the following:

"(B) EARLY AND FREQUENT REVIEW AND REVISION.—Except with respect to any national ambient air quality standard promulgated under this section for ozone concentrations, the Administrator"; and

(C) by adding at the end the following:

"(C) NATIONAL AMBIENT AIR QUALITY STANDARDS FOR OZONE CONCENTRATIONS.—Not earlier than February 1, 2018, but not later than December 31, 2018, and at 10-year

1 intervals thereafter, the Administrator shall,
2 with respect to national ambient air quality
3 standards for ozone concentrations—
4 "(i) complete a thorough review of
5 any standard promulgated under this sec-
6 tion; and
7 "(ii) make revisions to the standards
8 described in clause (i) and promulgate new
9 standards as may be appropriate in accord-
10 ance with section 108 and subsection (b).";
11 and
12 (2) in paragraph (2)(B)—
13 (A) by striking "(B) Not later than Janu-
14 ary 1, 1980, and at five-year intervals" and in-
15 serting the following:
16 "(B) REVIEW.—
17 "(i) IN GENERAL.—Except as pro-
18 vided in clause (ii), not later than January
19 1, 1980, and at 10-year intervals"; and
20 (B) by adding at the end the following:
21 "(ii) NATIONAL AMBIENT AIR QUAL-
22 ITY STANDARDS FOR OZONE CONCENTRA-
23 TIONS.—Not earlier than February 1,
24 2018, and at 10-year intervals thereafter,
25 the committee referred to in subparagraph

1 (A) shall, with respect to national ambient
2 air quality standards for ozone concentra-
3 tions—
4 "(I) complete a review of any
5 standard promulgated under this sec-
6 tion; and
7 "(II) recommend to the Adminis-
8 trator any new standard and any revi-
9 sion to the standards described in
10 subclause (I) as may be appropriate
11 under section 108 and subsection
12 (b).".

○

San Joaquin Valley Unified Air Pollution Control District
Meeting of the Governing Board
January 22, 2015

APPROVE THE DISTRICT'S 2015 LEGISLATIVE PLATFORM AND TAKE POSITIONS ON ANTICIPATED FEDERAL AIR QUALITY LEGISLATIVE PROPOSALS

Attachment D:

S.2526 and H.R.4957 CLEER Act as Introduced in the 113th Congress
(13 PAGES)

II

113TH CONGRESS
2D SESSION

S. 2526

To amend the Clean Air Act with respect to exceptional event demonstrations, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JUNE 25, 2014

Mr. FLAKE (for himself, Mr. MCCAIN, Mr. RISCH, Mr. CRAPO, Mr. INHOFE, Mr. SESSIONS, Mr. JOHNSON of Wisconsin, Mr. VITTER, Mr. HATCH, Mr. CORNYN, and Mr. THUNE) introduced the following bill; which was read twice and referred to the Committee on Environment and Public Works

---

A BILL

To amend the Clean Air Act with respect to exceptional event demonstrations, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Commonsense Legislative Exceptional Events Reforms Act of 2014".

SEC. 2. CLEAN AIR ACT EXCEPTIONAL EVENTS.

Section 319(b) of the Clean Air Act (42 U.S.C. 7619(b)) is amended—

(1) in paragraph (1)(B)—

(A) in clause (i), by inserting "or" after the semicolon;

(B) by striking clause (ii); and

(C) by redesignating clause (iii) as clause (ii); and

(2) in paragraph (3)—

(A) in subparagraph (B)(iv), by striking "to petition the Administrator to" and inserting "to submit a petition (in this section referred to as an 'exceptional event demonstration') to the Administrator to"; and

(B) by adding at the end the following:

"(C) CRITERIA FOR DETERMINATION OF EXCEPTIONAL EVENT DEMONSTRATION.—

"(i) IN GENERAL.—The criteria for evidence, analyses, and documentation applicable to approval or disapproval of an exceptional event demonstration under the regulations under this section shall be stated with specificity in order to minimize the discretion of the Administrator in approving or disapproving that demonstration.

"(ii) STATE PARTICIPATION.—The Administrator shall develop the criteria in conjunction with input from the States.

"(iii) CONTENTS.—The criteria shall reflect the varying levels of technical expertise and resources available in State and local agencies and the varying availability of meteorological and other monitoring data in rural areas, and may vary with respect to different regions.

"(iv) CONSIDERATIONS.—In developing the criteria, the Administrator shall consider the use of an expedited or streamlined approval process and conditions under which exceptional event demonstrations may be suitable for such a process.

"(D) TIMING OF DETERMINATION OF EXCEPTIONAL EVENT DEMONSTRATION.—

"(i) DEADLINE FOR DETERMINATION.—

"(I) IN GENERAL.—Not later than 90 days after submission of an exceptional event demonstration, the Administrator shall approve, disapprove, or request additional information from a State regarding the exceptional event demonstration.

"(II) ADMINISTRATION.—If the Administrator does not approve, disapprove, or request additional information relating to an exceptional event demonstration within the 90-day period described in subclause (I), the demonstration shall be considered to be approved on the day after the date on which that 90-day period ends.

"(ii) DEADLINE IF ADDITIONAL INFORMATION REQUESTED.—

"(I) IN GENERAL.—If the Administrator requests additional information from a State regarding an exceptional event demonstration under clause (i), not later than 90 days after the submission of that additional information, the Administrator shall approve or disapprove the demonstration.

"(II) ADMINISTRATION.—If the Administrator does not approve or disapprove a demonstration for which additional information is submitted within the 90-day period described in

1 subclause (I), the demonstration shall
2 be considered to be approved.
3 "(E) BURDEN OF PROOF.—The regula-
4 tions promulgated under this section shall pro-
5 vide that—
6 "(i) a determination by the Admini-
7 strator with respect to approval or dis-
8 approval of an exceptional event dem-
9 onstration be based on a preponderance of
10 the evidence; and
11 "(ii) in making a determination, the
12 Administrator—
13 "(I) shall accord substantial def-
14 erence to the findings of the State ex-
15 ceptional event demonstration; and
16 "(II) may develop and use anal-
17 yses and consider evidence not pro-
18 vided in the exceptional event dem-
19 onstration, subject to the condition
20 that the analyses are developed by the
21 Environmental Protection Agency.
22 "(F) APPEALS.—
23 "(i) DISAPPROVAL.—
24 "(I) IN GENERAL.—Subject to
25 subclause (II), disapproval by the Ad-

ministrator of an exceptional event demonstration shall be considered final action subject to judicial review under section 307(b).

"(II) LIMITATION.—Notwithstanding subclause (I), disapproval by the Administrator of an exceptional event demonstration shall only be subject to appeal by the State that submitted the exceptional event demonstration.

"(ii) APPROVAL.—Approval by the Administrator of an exceptional event demonstration shall not be subject to appeal or other judicial action.".

SEC. 3. REVISION OF REGULATIONS.

After providing for a notice and comment period, but not later than 180 days after the date of enactment of this Act, the Administrator of the Environmental Protection Agency shall revise the regulations under section 319(b) of the Clean Air Act (42 U.S.C. 7619(b)) to carry out the amendments made by this Act.

○

I

113TH CONGRESS
2D SESSION

H. R. 4957

To amend the Clean Air Act with respect to exceptional event demonstrations, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JUNE 25, 2014

Mr. OLSON (for himself, Mr. MCCARTHY of California, Mr. MCCLINTOCK, Mr. SCHWEIKERT, Mr. STOCKMAN, Mr. CHAFFETZ, Mr. PEARCE, Mr. POMPEO, Mr. CAMPBELL, Mr. TIPTON, Mr. SALMON, Mr. WEBER of Texas, Mr. DUNCAN of South Carolina, Mr. GOSAR, Mr. POE of Texas, Mr. FRANKS of Arizona, Mr. NEUGEBAUER, Mr. MARCHANT, Mr. CULBERSON, Mr. CONAWAY, Mr. LATTA, Mr. WILLIAMS, and Mr. KELLY of Pennsylvania) introduced the following bill; which was referred to the Committee on Energy and Commerce

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A BILL

To amend the Clean Air Act with respect to exceptional event demonstrations, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the "Commonsense Legisla-
5 tive Exceptional Events Reforms Act of 2014".

SEC. 2. CLEAN AIR ACT EXCEPTIONAL EVENTS.

Section 319(b) of the Clean Air Act (42 U.S.C. 7619(b)) is amended—

(1) in paragraph (1)(B)—

(A) in clause (i)—

(i) by striking "(i) stagnation of air masses or" and inserting "(i)(I) ordinarily occurring stagnation of air masses or (II)"; and

(ii) by inserting "or" after the semicolon;

(B) by striking clause (ii); and

(C) by redesignating clause (iii) as clause (ii); and

(2) in paragraph (3)—

(A) in subparagraph (B)(iv), by striking "to petition the Administrator to" and inserting "to submit a petition (in this section referred to as an 'exceptional event demonstration') to the Administrator to"; and

(B) by adding at the end the following:

"(C) CRITERIA FOR DETERMINATION OF EXCEPTIONAL EVENT DEMONSTRATION.—

"(i) IN GENERAL.—The criteria for evidence, analyses, and documentation applicable to approval or disapproval of an

1 exceptional event demonstration under the
2 regulations under this section shall be stat-
3 ed with specificity in order to minimize the
4 discretion of the Administrator in approv-
5 ing or disapproving that demonstration.
6 "(ii) STATE PARTICIPATION.—The
7 Administrator shall develop the criteria in
8 conjunction with input from the States.
9 "(iii) CONTENTS.—The criteria shall
10 reflect the varying levels of technical exper-
11 tise and resources available in State and
12 local agencies and the varying availability
13 of meteorological and other monitoring
14 data in rural areas, and may vary with re-
15 spect to different regions.
16 "(iv) CONSIDERATIONS.—In devel-
17 oping the criteria, the Administrator shall
18 consider the use of an expedited or stream-
19 lined approval process and conditions
20 under which exceptional event demonstra-
21 tions may be suitable for such a process.
22 "(D) TIMING OF DETERMINATION OF EX-
23 CEPTIONAL EVENT DEMONSTRATION.—
24 "(i) DEADLINE FOR DETERMINA-
25 TION.—

"(I) IN GENERAL.—Not later than 90 days after submission of an exceptional event demonstration, the Administrator shall approve, disapprove, or request additional information from a State regarding the exceptional event demonstration.

"(II) ADMINISTRATION.—If the Administrator does not approve, disapprove, or request additional information relating to an exceptional event demonstration within the 90-day period described in subclause (I), the demonstration shall be considered to be approved on the day after the date on which that 90-day period ends.

"(ii) DEADLINE IF ADDITIONAL INFORMATION REQUESTED.—

"(I) IN GENERAL.—If the Administrator requests additional information from a State regarding an exceptional event demonstration under clause (i), not later than 90 days after the submission of that additional information, the Administrator shall ap-

1 prove or disapprove the demonstra-
2 tion.
3 "(II) ADMINISTRATION.—If the
4 Administrator does not approve or
5 disapprove a demonstration for which
6 additional information is submitted
7 within the 90-day period described in
8 subclause (I), the demonstration shall
9 be considered to be approved.
10 "(E) BURDEN OF PROOF.—The regula-
11 tions promulgated under this section shall pro-
12 vide that—
13 "(i) a determination by the Adminis-
14 trator with respect to approval or dis-
15 approval of an exceptional event dem-
16 onstration be based on a preponderance of
17 the evidence; and
18 "(ii) in making a determination, the
19 Administrator—
20 "(I) shall accord substantial def-
21 erence to the findings of the State ex-
22 ceptional event demonstration; and
23 "(II) may develop and use anal-
24 yses and consider evidence not pro-
25 vided in the exceptional event dem-

onstration, subject to the condition that the analyses are developed by the Environmental Protection Agency.

"(F) APPEALS.—

"(i) DISAPPROVAL.—

"(I) IN GENERAL.—Subject to subclause (II), disapproval by the Administrator of an exceptional event demonstration shall be considered final action subject to judicial review under section 307(b).

"(II) LIMITATION.—Notwithstanding subclause (I), disapproval by the Administrator of an exceptional event demonstration shall only be subject to appeal by the State that submitted the exceptional event demonstration.

"(ii) APPROVAL.—Approval by the Administrator of an exceptional event demonstration shall not be subject to appeal or other judicial action.".

SEC. 3. REVISION OF REGULATIONS.

After providing for a notice and comment period, but not later than 180 days after the date of enactment of

1 this Act, the Administrator of the Environmental Protec-
2 tion Agency shall revise the regulations under section
3 319(b) of the Clean Air Act (42 U.S.C. 7619(b)) to carry
4 out the amendments made by this Act.

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POTENTIAL IMPACT OF PROPOSED EPA REGULATIONS ON LOW INCOME GROUPS AND MINORITIES

JUNE 2015

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Prepared For

The National Black Chamber of Commerce
Washington, D.C.
http://www.nationalbcc.org

By

Management Information Services, Inc.
Washington, D.C.
www.misi-net.com

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ABSTRACT

EPA is proposing new regulations, including guidelines to reduce CO_2 emissions from existing fossil-fueled power plants. These regulations would have serious economic, employment, and energy impacts at the national level and for all states, and the impacts on low-income groups, Blacks, and Hispanics would be especially severe. The EPA rules would: 1) Significantly reduce U.S. GDP every year over the next two decades -- over $2.3 trillion; 2) Destroy millions of jobs; 3) More than double the cost of power and natural gas to over $1 trillion; 4) Require the average family to pay over $1,225 more for power and gas in 2030 than in 2012.

The EPA regulations will increase Hispanic poverty by more than 26% and Black poverty by more than 23%. The energy burdens for Blacks and Hispanics will increase and large numbers of both groups will be forced into energy poverty (Figure AB-1), and Black and Hispanic household incomes will decline by increasing amounts each year (Figure AB-2). There would be increasing job losses: By 2035, cumulative job losses for Blacks will total about 7 million and for Hispanics will total 12 million. Most job losses would occur in the states in which Blacks and Hispanics are most heavily concentrated (Figure AB-3).

Figure AB-1: Increases in Energy Burdens

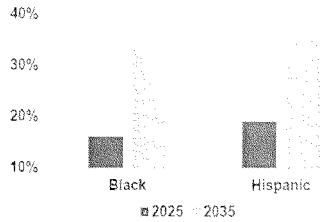


Figure AB-2: Losses in Median Household Incomes

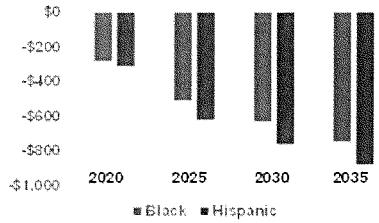
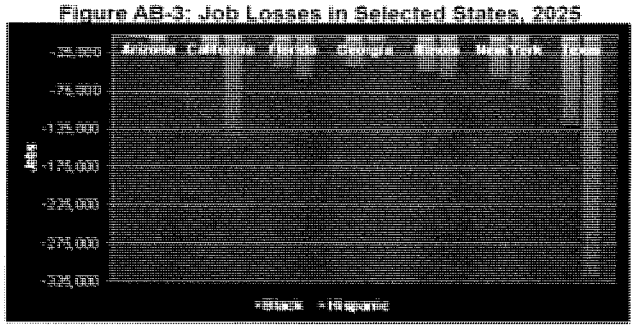


Figure AB-3: Job Losses in Selected States, 2025



The EPA regulations will thus disproportionately harm

Blacks and Hispanics, and must not be implemented.

EXECUTIVE SUMMARY

"There are a lot of people on the lower end of the socioeconomic spectrum that are going to die." Senator Joe Manchin (D-WV) commenting on EPA's Clean Power Plan.

"It's the green movement's new Jim Crow law," Deneen Borelli, FreedomWorks.

"This rule will impact African-Americans more severely than any other group," Harry Alford, President and CEO of the National Black Chamber of Commerce.

In June 2014, EPA proposed guidelines to reduce CO_2 emissions from existing fossil-fueled power generating units in the electric power sector -- the Clean Power Plan (CPP). This Plan, and other proposed EPA regulations, would place restrictions on the availability and increase the prices of energy, especially electricity. The economic impacts of the EPA regulations in terms of GDP, incomes, industrial activity, jobs, and other indicators would likely be severe. Due to their economic vulnerability, the impacts on low-income groups, Blacks, and Hispanics would be disproportionate and especially serious. This report analyzes the likely economic, employment, and energy market impacts of the EPA Plan with special emphasis on the impacts on low-income groups, Blacks, and Hispanics.

Economic and Energy Impacts

The EPA regulations would have serious economic, employment, and energy market impacts at the national level and for all states, and that the impacts on low-income groups, Blacks, and Hispanics would be especially severe. We estimated that implementation of the EPA regulations would:

- Require incremental costs of nearly ½ trillion dollars (Table EX-1)
- Significantly reduce U.S. GDP every year over the next two decades, and GDP could be reduced by over $2.3 trillion compared to the reference case – which assumed no EPA carbon restrictions
- Destroy millions of jobs over the next two decades
- Significantly reduce U.S. household incomes over the next two decades

In addition, the EPA Plan would greatly increase U.S. energy costs, and by 2030 these increases (above the reference case) could:

- More than double the cost of power and gas to over $1 trillion
- Cost the U.S. economy $565 billion more per year in 2030 than it did in 2012, representing a 121 percent increase (Table EX-2)
- Require the average family to pay over $1,225 more for power and gas in 2030 than they did in 2012.

Table EX-1: Incremental Costs of Implementing the EPA Regulations

Incremental cost item	Incremental cost ($billion, real 2012$)
Power plant construction	339
Electric transmission	16
Natural gas infrastructure	23
CCS pipelines	25
Coal plant decommissioning	8
Coal unit efficiency upgrades	3
Coal unit stranded costs	30
Demand-side energy efficiency	106
Operations and maintenance costs	-5
Fuel costs	-66
Total incremental costs	478

Table EX-2: U.S. Energy Cost Increases From the EPA Regulations, 2012-3030

All Sectors	2012	Dollar Increase	Percent Increase
Total Electricity Cost (Billions)	$364	$376	104%
Total Natural Gas Cost (Billions)	$107	$190	179%
Total Cost (Billions)	$471	$566	121%
Residential			
Average Electricity Bill (annual)	$1,288	$710	54%
Average Natural Gas Bill (annual)	$675	$525	78%
Total	$1,963	$1,266	62%

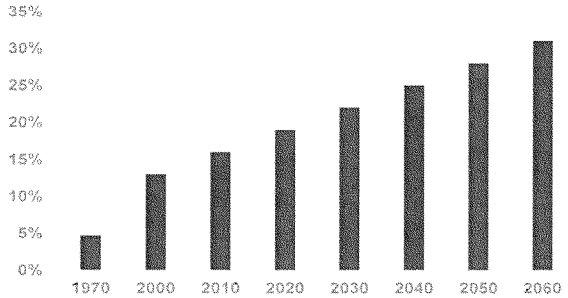
Demographic Changes

Figure EX-1 indicates that the growth in the Hispanic population is the salient U.S. demographic development, both historical and forecast:

- In 1970, less than five percent of the U.S, population was Hispanic.
- In 2010, about 16 percent of the U.S, population was Hispanic.
- In 2030, about 20 percent of the U.S, population will be Hispanic.
- In 2050, about 25 percent of the U.S, population will be Hispanic.
- In 2060, about 31 percent of the U.S, population will be Hispanic.

The portion of the population that is non-Hispanic White declines from 80 percent in 1980 to about 43 percent in 2060. The portion of the U.S. that is Black will increase gradually from the current 13 percent to about 15 percent in 2060. By 2045, the U.S. is forecast to be a "minority majority" nation, where less than half of the population in non-Hispanic White, and will consist of Hispanics, Blacks, Asians, Native Americans, and persons of mixed race.

Figure EX-1: Percent Hispanic of the Total U.S. Population: 1970 - 2060



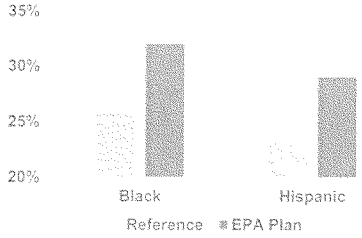
Impact on Poverty Rates

The EPA regulations will impact minorities disproportionately, both because they have lower incomes to begin with, but also because they have to spend proportionately more of their incomes on energy, and rising energy costs inflict great harm on minority families.

Black and Hispanics will be adversely affected threefold if the EPA Plan is implemented: Their incomes will be less than they would without the regulations, their rates of unemployment will increase substantially, and it will take those who are out of work longer to find another job. These impacts on earnings and employment will increase the rates of poverty among Blacks and Hispanics, and we estimate that one of the impacts of implementing the EPA regulations will be to, by 2025 (Figure EX-2):

- Increase the poverty rate for Hispanics from 23 percent to about 29 percent. This represents an increase in Hispanic poverty of more than 26 percent.
- Increase the poverty rate for Blacks from 26 percent to about 32 percent. This represents an increase in Black poverty of more than 23 percent.

Figure EX-2: Increases in 2025 Poverty Rates Caused by the EPA Regulations



Thus, an unintended result of the EPA Plan will be to force millions of Blacks and Hispanics below the poverty line -- many of whom have only recently managed to work their way out of poverty. In addition, the EPA CO_2 restrictions, by increasing the costs of energy and energy-intensive building materials, will also increase the costs of housing. This will seriously affect Blacks and Hispanics because they have higher housing costs, higher housing cost burdens -- the proportion of monthly income household devote to housing related expenses, and a lower rate of home ownership than Whites:

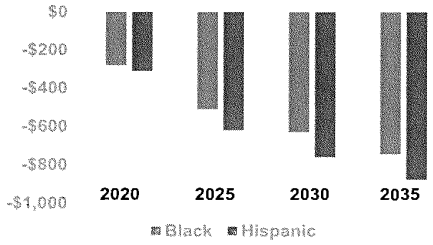
- Only about ten percent of Whites pay 50 percent or more of their income in housing costs; the comparable percentage for Blacks and Hispanics is about 20 percent.
- Whereas 25 percent of Whites pay 30 percent or more of their income in housing costs, the comparable percent for Blacks is 40 percent, and for Hispanics it is 45 percent.
- Housing cost burdens for Blacks and Hispanics are 30 – 40 percent higher than those for Whites.

Impact on Incomes

As shown in Figure EX-3, the EPA regulations will reduce Black and Hispanic household incomes by increasing amounts each year:

- In 2020, Black median household income will decrease more than about $250 compared to the reference case (which assumes that the EPA Plan is not implemented), and Hispanic median household income will decrease nearly $300 compared to the reference case.
- In 2025, Black median household income will be more than $400 less than under the reference case, and Hispanic median household income will be about $460 less than under the reference case
- In 2035, Black median household income will be $455 less than under the reference case, and Hispanic median household income will be $515 less.
- The cumulative loss in Black median household income over the period 2015 – 2035 will exceed $5,000.
- The cumulative loss in Hispanic median household income over the period 2015 – 2035 will exceed $7,000.

Figure EX-3: Losses in Black and Hispanic Median Household Incomes Caused by the EPA Regulations

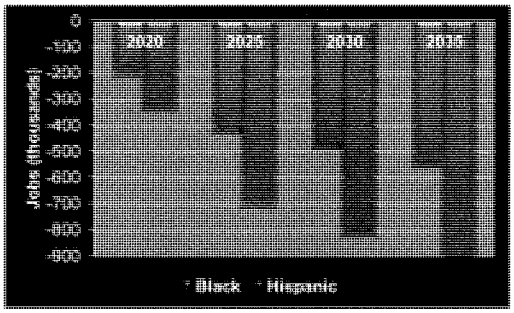


Jobs Impacts

The unemployment rates of Blacks and Hispanics have consistently been much higher than average and higher than those for Whites. Blacks and Hispanics are also at a disadvantage in the labor force when they are employed, for they tend to be disproportionably concentrated in lower paid jobs. Nationwide, implementation of the EPA regulations would result in the loss of an increasingly large number of Black and Hispanic jobs (Figure EX-4):

- In 2020, nearly 200,000 Black jobs would be lost and more than 300,000 Hispanic jobs would be lost.
- In 2025, more than 400,000 Black jobs would be lost and nearly 700,000 Hispanic jobs would be lost.
- In 2030, 470,000 Black jobs would be lost and more than 800,000 Hispanic jobs would be lost.
- In 2035, 535,000 Black jobs would be lost and nearly 900,000 Hispanic jobs would be lost.

Figure EX-4: Black and Hispanic Job Losses Caused by the EPA Regulations



The job losses increase every year and the cumulative losses for Blacks and Hispanics will increase rapidly over the next two decades if the EPA regulations are enacted:

- By 2025, cumulative job losses for Blacks will total nearly 2.2 million.
- By 2035, cumulative job losses for Blacks will total about 7 million.
- By 2025, cumulative job losses for Hispanics will total 3.8 million.
- By 2035, cumulative job losses for Hispanics will total nearly 12 million.

Impact on Basic Expenditures and Discretionary Income

Blacks and Hispanics have, on average, significantly lower incomes than Whites, and have to spend proportionately larger shares of their incomes on basic necessities such as food, housing, clothing, and utilities. Implementing the EPA Plan will significantly increase the costs of all fossil fuels and, since energy is a basic component in the production of all commodities, the prices of all goods will increase as the energy price increases work their way through the economy. Thus, the EPA regulations will likely have a doubly negative impact on the living standards of Blacks and Hispanics:

- First, the regulations will decrease Black and Hispanic incomes below where they would be in the absence of the regulations.
- Second, the EPA regulations will increase the costs of the basic goods upon which Blacks and Hispanics must spend their reduced incomes.

With reduced incomes and rising prices, the trade-offs that Blacks and Hispanics will face involve reallocating spending between food, clothing, housing, and heat. For example, proportionately:

- Blacks spend 20 percent more of their income on food, ten percent more on housing, 40 percent more on clothing, and 50 percent more on utilities than do Whites.

- Hispanics spend 90 percent more of their income on food, five percent more on housing, 40 percent more on clothing, and 10 percent more on utilities than do Whites.

Implementing the EPA regulations will likely exacerbate this situation by forcing Blacks and Hispanics to spend an even more disproportionate share of their incomes -- which will have been reduced due to the effects of the CO_2 restrictions -- on basic necessities.

Finally, the cumulative impact of increased unemployment, reduced incomes, and increased prices for housing, basic necessities, energy, and utilities resulting from the EPA regulations will be to further reduce Black and Hispanic discretionary incomes. Discretionary income is the money that remains for spending or saving after people pay their taxes and purchase necessities. It is an important concept both because of the financial flexibility it gives individuals and because many businesses depend on discretionary spending for sales and profits. Implementing the EPA Plan will reduce the average discretionary incomes of both Blacks and Hispanics.

Increased Energy Poverty

One of the more serious, but less recognized effects of implementing the EPA regulations will be to significantly increase the energy burdens for Blacks, and Hispanics and increase the numbers of Blacks and Hispanics suffering from "energy poverty." For tens of millions of low-income households, higher energy prices will intensify the difficulty of meeting the costs of basic human needs, while increasing energy burdens that are already excessive. At the same time, the EPA regulation will threaten low-income access to vital energy and utility services, thereby endangering health and safety while creating additional barriers to meaningful low-income participation in the economy.

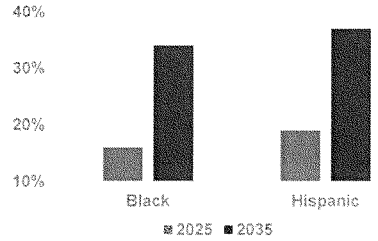
The price increases resulting from the Plan would be highly regressive -- they would place a relatively greater burden on lower-income households than on higher-income ones. In addition to health risks, excessive energy burdens cause a variety of difficulties for low-income households, and "Inability to pay utilities is second only to inability to pay rent as a reason for homelessness."

A major negative effect of the EPA regulations would be to significantly increase the energy burdens for Blacks and Hispanics and to force large numbers of both groups into energy poverty. Implementing the regulations would (Figure EX-5):

- In 2025, increase the energy burden of Blacks by 16 percent and Hispanics by 19 percent
- By 2035, increase the energy burden of Blacks by more than one-third and Hispanics by more than 35 percent

Figure EX-5: Increases in Black and Hispanic

Energy Burdens Resulting From the EPA Regulations



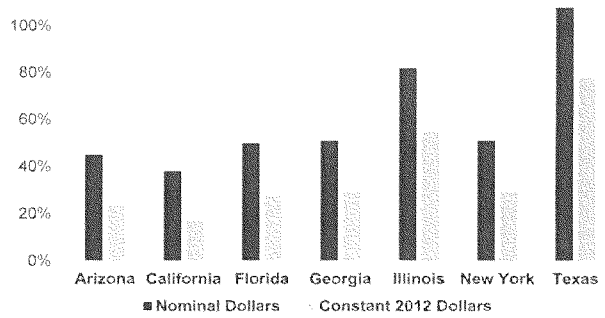
Impacts on Minority Small Businesses

Small businesses will face higher costs for energy and other products as a result of the EPA regulations, and the impact on Black and Hispanic small businesses will be especially severe. Black- and Hispanic-owned businesses represent a disproportionately small share of total businesses, tend to be smaller and less well capitalized than White-owned businesses, and are much more vulnerable to the economic dislocations likely to result from the EPA CO_2 restrictions. Thus, the potential negative impact of the EPA Plan on Black and Hispanic Businesses is significant.

Impacts on Blacks and Hispanics by State

The impact of implementing the EPA regulations on the U.S. economy, and on low-income groups, Blacks, and Hispanics, will be severe. The regulations will cause higher energy costs to spread throughout the economy as producers try to cover their higher production costs by raising their product prices, and these impacts will be felt to varying degrees in different states. For example, because virtually all businesses rely on electricity to produce and sell goods and services, the economic impacts of coal-based energy extend far beyond the generation and sale of electricity. The availability of low-cost electricity produces powerful ripple effects that benefit state economies as a whole, but implementation of the EPA regulation would greatly increase electricity prices – much more in some states than in others (Figure EX-6). For example, consumers in the Midwest, the Southeast, and Texas will literally face double the impacts as consumers elsewhere in the country.

Figure EX-6: Electricity and Natural Gas Cost Increases in Selected States Resulting From Proposed EPA Regulations: 2012 vs. 2020



Nevertheless, since the EPA regulations would require continuing and increasingly severe reductions in the use of fossil energy to produce electricity in the states and cause large energy price increases. If the regulations are implemented all states will suffer substantial and increasingly severe economic and jobs impacts:

- Residents of all states will face increased costs for energy, utilities, and for other goods and services and will experience increased costs of living.
- Energy and electricity prices in each state would increase substantially, but to different degrees.
- The growth rates of state wages and incomes would be negatively affected over the next two decades, and by 2025 states' per capita personal incomes would be significantly lower than in the absence of the EPA regulation.
- Millions of jobs would be lost in the states, employment would be lower, and unemployment higher.
- Industries and firms will relocate among states, thus causing a further loss of jobs in many states.
- New firms will hesitate to locate in some states, thus causing a reduction in the number of new jobs created.
- The combination of reduced economic activity in the states, decreased personal incomes for states' residents, and increased unemployment will strain state and local government budgets and result in reduced public services and increased taxes.

Blacks and Hispanics are disproportionately located in certain states, and their population concentration in these states will increase over time. We estimated the impacts of the EPA regulations on incomes in the seven states with the highest concentrations of Blacks and Hispanics: Arizona, California, Florida, Georgia, Illinois, New York, and Texas (Figure EX-7). In all states (except Georgia), the impacts on Hispanic incomes exceed the impacts on Black incomes, since there are more

Hispanics than Blacks residing in these states. Further, the growth rates of the Hispanic population exceed those of Blacks in all of these states.

This figure also shows that the impacts vary widely among the states. The greatest loss of income will be experienced by Hispanics in Texas, since this state has a large and rapidly growing Hispanic population and because this is the state that is most severely impacted by the EPA Plan.

We estimated the average annual impacts in the seven states, 2012-2035, of the EPA Plan on Black and Hispanic jobs (Figure EX-8). In all states (except for Georgia), Hispanic job losses exceed Black job losses, since there are more Hispanics than Blacks residing in these states. This figure also shows that the impacts vary widely among the states. The greatest total job losses will be experienced by Hispanics in Texas, which is due to several factors:

- As discussed, Texas has the highest per capita CO_2 emissions and would be more disproportionately impacted by the CPP than any other state.
- As also discussed, the energy cost increases in Texas would be greater than in any other state.
- The impact of the EPA plan on GSP, incomes, and jobs would be more severe in Texas than in any other state.
- Finally, the Hispanic population in Texas is large and growing rapidly, and by 2025 the Hispanic portion of the labor force in the state will exceed 40 percent.
- Thus, in 2025 the EPA Plan will destroy nearly 325,000 Hispanic jobs in Texas.

Figure EX-7: Impact in Selected States, 2025,
of the EPA Regulations on Black and Hispanic Personal Incomes

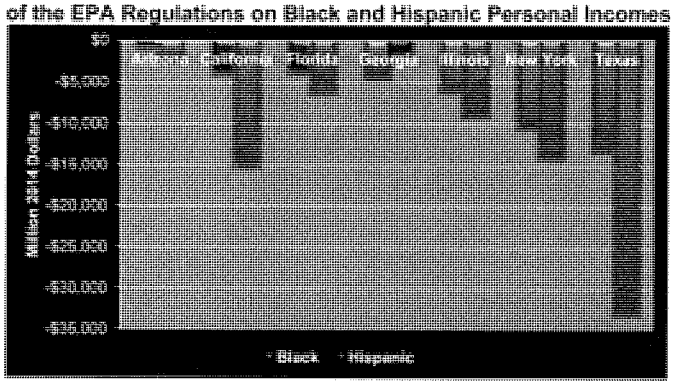
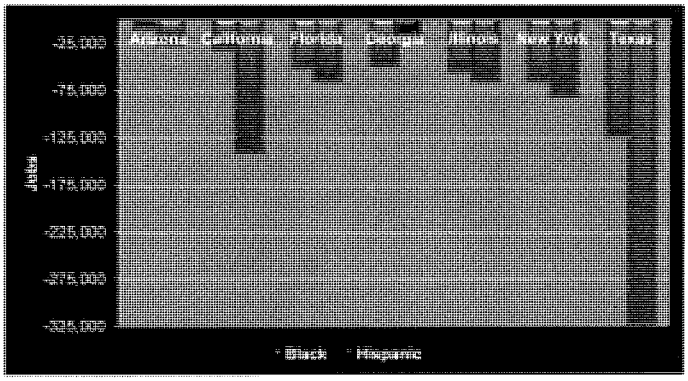


Figure EX-8: Impact in Selected States, 2025,
of the EPA Regulations on Black and Hispanic Jobs



The largest job losses for Blacks caused by the EPA regulations will also occur in Texas, and in 2025 the Plan will result in nearly 125,000 additional Blacks being unemployed in the state. Nevertheless, the job losses resulting from the EPA Plan are substantial in every state. For example, in 2025, Hispanic job losses will total:

- 135,000 in California
- More than 75,000 in New York
- 60,000 in Florida
- 60,000 in Illinois
- Nearly 25,000 in Arizona

In 2025, average Black job losses will total:

- 60,000 in New York
- 50,000 in Illinois
- 45,000 in Florida
- 43,000 in Georgia
- 26,000 in California

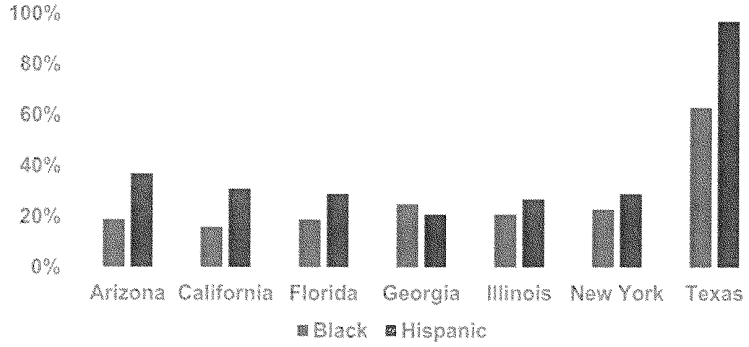
While Hispanic jobs losses exceed Black job losses in all of the states except Georgia, in some states the differences in total job losses for the two groups are relatively small – for example, in Florida, Illinois, and New York.

We estimated the increases in Hispanic and Black energy burdens in the states in 2025 resulting from the EPA regulations and found that (Figures EX-9):

- The energy burdens for both Blacks and Hispanics increase.
- For each group, the increased energy burdens are the largest in Texas.

- The energy burden increase is greater for Hispanics in every state except Georgia
- In some states, such as Georgia, Illinois, and New York, the increases in energy burdens is roughly similar for Blacks and for Hispanics
- In some other states, such as Arizona, California, and Texas, the increased energy burden is significantly larger for Hispanics than for Blacks

Figure EX-9: Increase in 2025 Black and Hispanic Energy Burdens in Selected States Resulting From the EPA Regulations



Please visit the following link to view the complete report: http://nbccnow.org/wp-content/uploads/2015/06/NBCC__ozone____FInal.pdf

Association Between Socioeconomic Status and the Development of Asthma: Analyses of Income Trajectories

Anita L. Kozyrskyj, PhD, Garth E. Kendall, PhD, Peter Jacoby, MSc, Peter D. Sly, MD, DSc, and Stephen R. Zubrick, PhD

Objectives. Using data on 2868 children born in the Western Australian Pregnancy Cohort (Raine) Study, we examined the association between changes in family socioeconomic status and childhood asthma.

Methods. We determined the likelihood (odds ratio) of a child having asthma at ages 6 and 14 years for 4 family-income trajectories (chronic low, increasing, decreasing, and never low) over the child's lifetime. The trajectories were created from longitudinal latent-class models.

Results. We found a 2-fold increased risk of asthma at age 14 years among children who had lived in a low-income family since birth, especially for girls. Asthma was less likely to occur in children born to single parents; income rose over time in many of these families. Compared with children in chronic low-income families, children in households with increasing incomes had a 60% lower risk of asthma. Single-point measures of low income were not found to be associated with asthma.

Conclusions. Chronic exposure to a low-income environment from birth was associated with the development of persistent asthma. There was also a protective effect against asthma among those children whose families had moved out of poverty. (*Am J Public Health.* 2010;100:540–546. doi:10.2105/AJPH.2008.150771)

Asthma disproportionately burdens children living in economically disadvantaged urban communities. Some of this disparity can be attributed to the observation that once asthma is established, lower utilization of prophylactic medications and higher rates of hospitalization are more common among low-income children than among high-income children.[1,2] Evidence for the link between socioeconomic status (SES) and the development of asthma is less strong—and is, in fact, contradictory.[1,3] Many studies report asthma to be more prevalent among low-SES children, even in countries with universal health care insurance.[4–7] However, no association with SES was reported in 1 study,[8] and another study documented lower rates of asthma among low-SES children.[9] The latter finding is congruent with the lower prevalence of atopic disease in developing countries[10] and with the "hygiene" hypothesis, which proposes that exposure to infections and endotoxin is protective against atopic asthma.[11] Low-income children have higher infection rates, although endotoxin levels are not always elevated in low-income households.[12]

Despite this level of uncertainty, it is common for household SES to be treated as a confounding factor and to be used to statistically adjust models testing the association between early life exposures and the development of childhood asthma. As low-income mothers are more likely to smoke and less likely to breastfeed,[13,14] SES acts as a proxy measure for these exposures in the absence of available data. However, there is a lack of recognition that contradictory findings on the association of SES with childhood asthma may be a function of the validity of the SES measure. Low-income variables are fraught with measurement error, and there may be considerable fluctuation in household income over the course of a child's life from birth to adolescence.[15] Measures of cumulative income, such as the frequency of low-income episodes over time, have shown stronger associations with poor health than have single-point measures.[16] Other SES trajectories, such as downward or upward social mobility, have been reported to increase and decrease risk of cardiovascular disease, respectively.[17] Fluctuations in family income also affect family functioning and maternal mental health.[18]

The effects of chronic poverty on child functioning and health have long been recognized.[19,20] However, few studies have evaluated childhood asthma in relation to cumulative household income or income trajectories from the time of birth.[21] Low-income households and neighborhoods are characterized by high levels of chronic stress,[1,22] but no longitudinal studies have investigated the relationship between chronic poverty, chronic stress, and asthma development. To fill this gap in the literature, we studied the relationship between family SES trajectories starting from birth of the child and asthma development in early school age and adolescence. We used maximum-likelihood longitudinal latent-class modeling techniques to identify SES trajectories over time.[15,23]

METHODS

We conducted a longitudinal evaluation of 2868 children in the Western Australian Pregnancy Cohort (Raine) Study, born from 1989 to 1991 to mothers enrolled at gestational ages of 16 to 20 weeks at antenatal clinics at the main tertiary maternal hospital or nearby practices in Perth, Western Australia.[24] Children were followed up at ages 1, 2, 3, 6, 8, 10, and 14 years. We then determined the likelihood of a child having asthma at ages 6 and 14 years according to the child's family-income trajectory over the child's lifetime.

Study measures were obtained from parent surveys administered during the Raine study. Some children were lost to follow-up or were missing data on asthma status, leaving sample totals of 2151 (75% of the Raine study sample) children at age 6 years and 1796 (63% of the

study sample) children at age 14 years. Mothers of excluded children were more likely to be single parents, to have less education, and to experience life stress. However, because the Raine study recruited predominantly from a tertiary care hospital that serviced high-risk pregnancies, it overrepresented single parents at first recruitment (14.2%) compared with the general population of Western Australia (10.8%). Subsequent to loss to follow-up at age 14 years, the percentage of children living in single-parent families at age 1 year decreased to 11.6%, closer to the percentage of the general population of Western Australia. In comparison with children who remained in the study, single-parented children at age 1 year who were lost to follow-up at age 14 years did not differ from other children at age 6 years with regard to asthma prevalence or asthma risk factors, such as maternal asthma.

Family-Income Trajectories

We sought to identify trajectories of children with similar childhood experiences of economic disadvantage over time, using maximum-likelihood longitudinal latent-class modeling techniques[15,25] rather than predetermined categories. The resultant longitudinal models classified children based on their family's movements in and out of low income over the child's lifetime. This group-based modeling strategy determined the probability of children's low income over time and simultaneously considered timing, duration, and sequencing of family low income. This analytic tool also incorporated the maximum-likelihood missing-data routine, which made maximal use of information on children with 1 or more years of missing data.

Families were first categorized by the dichotomous variable, low income, for each follow-up year. Low income was defined as reported household income of AU$27 000 per year or less (the cutoff value varied according to the income categories specified in each iteration of survey administration) until age 6 years. Because our research interest focused on relative poverty, low income after age 6 years was defined as reported income of $30 000 or less to reflect the increase in disposable income over the 1990s (per the Australian Bureau of Statistics).[26] The cutoff values for low income captured the 2 lowest income quintiles of household income in the 1990s and included single-parent and 2-parent households that derived the majority of their income from government assistance.[27]

Once a family was classified as either low income or not, we used the SAS version 9.2 (SAS Institute Inc, Cary, NC) PROC TRAJ procedure to create income trajectories for the child's family from the time of the child's birth until the child reached age 6 years (first assessment of asthma status) and age 14 years (second assessment of asthma status). We used Bayes's theorem with PROC TRAJ to assign children to the income trajectory group to which they had the highest probability of belonging.[15] A.L.K. specified the desired number of trajectories before running each model. Then, starting with 1 trajectory, PROC TRAJ was repeated until models were created for a full range of trajectories (1, 2, 3 . . . k trajectories).[15] Following each iteration, trajectories were graphically represented and descriptive labels were assigned for the pattern of low income over time (e.g., stable, increasing, decreasing) to each trajectory.

Figure 1 depicts a 4-trajectory model and the estimated probability of a child's membership in each trajectory. Trajectory 4 was labeled as chronic low income (7.4% of children), trajectory 3 was labeled as decreasing income (19%), trajectory 2 was labeled as increasing income (11.8%), and trajectory 1 was labeled as not ever low income (61.8%). Approximately 40% of children in the increasing-income trajectory lived in a low-income household before age 3 years; by age 6 years, this proportion had declined to 15% or less. By contrast, from 40% to 90% of children in the chronic-low-income trajectory had lived in a low-income family since birth.

The Bayesian Information Criterion (BIC) and a sample size–adjusted BIC were used to select the final number of trajectories, with the goal of identifying the fewest number of trajectories that best fit the data.[15] The final number of trajectories was established when sequential comparisons of the BIC and adjusted BIC between models with k and k+1 trajectories yielded no further substantial reductions in the BIC score with the k+1 model. At age 6 years, the 2-trajectory model fit the data better than the 1-trajectory model; the BIC was reduced by 401 points, and the sample size–adjusted BIC was reduced by 404 points. There was no further improvement with the 3-trajectory model; BIC

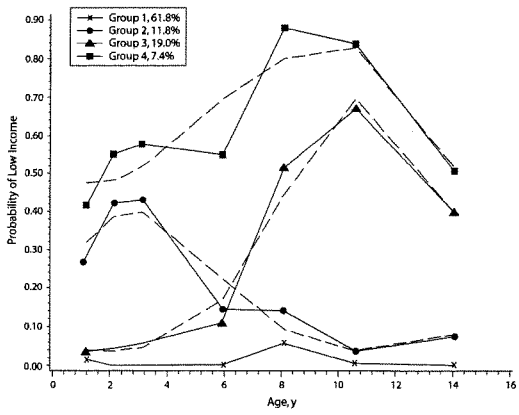


FIGURE 1—Probability of a child's membership in 4 low-income trajectories from birth until age 14 years: Western Australia Pregnancy Cohort (Raine) Study, Perth, Australia, 1989–2005.

increased by 2, and the adjusted BIC decreased by 2. At age 14 years, the 4-trajectory model had an improved fit over the 3-trajectory model; BIC was reduced by 49 points, and the sample size–adjusted BIC was reduced by 53 points. The 5-trajectory model was associated with a minimal drop in the BIC and adjusted BIC (7 and 14 points, respectively).

Ultimately, a 2-category income measure (chronic low income vs not) was selected for the analyses at age 6 years, and a 4-category income measure (chronic low, increasing income, decreasing income, not ever low income; Figure 1) was selected for the analyses at age 14 years. These categories were then entered as predictors into the logistic regression model for asthma.

Asthma Outcome Measures

Current asthma at ages 6 years and 14 years was defined as ever having been diagnosed with asthma by a physician and wheeze or nocturnal cough and receipt of asthma medications (controller and reliever drugs) in the previous 12 months. Previous research has shown that children in the Raine cohort who met this definition of current asthma exhibited significant deficits in lung function and greater sensitivity to the methacholine challenge test for bronchial hyperreactivity.[28,29] Risk and protective factors for asthma, derived from parent survey responses, were gender, household income, single-parent status at age 1 year, total number of siblings at birth, maternal history of asthma (recorded during pregnancy), maternal smoking during pregnancy, maternal smoking during the first year, preterm birth (<37 weeks), low birth weight (<2500 grams), elective cesarean delivery, maternal age younger than 20 years, maternal education less than high school, pregnancy and family stress indicator (composite score of more than 3 stressful life events from the Tennant and Andrews validated life-events instrument[30]), duration of exclusive breastfeeding, and pet ownership during the first year of life. The stress indicator was ascertained for the mother during pregnancy, at child age 1 year, and from birth of the child to age 6 or 14 years; the latter was labeled the chronic family stress measure.

Crude odds ratios (ORs) for asthma at ages 6 and 14 years were determined first, followed by ORs adjusted for the aforementioned confounding factors. We calculated ORs with multiple logistic regression analysis, using SAS software. Variables were retained in models at the 95% level of confidence. Separate models were tested for male and female children.

RESULTS

At any given time during the 14-year follow-up period, 8% to 21% of children were living in a low-income household (Table 1). Fourteen percent of children were experiencing chronic low income at age 6 years. This percentage decreased to 7% at age 14 years, when children in decreasing-income and increasing-income households were removed to create separate categories (Table 1 and Figure 1). Twelve percent of children were in increasing-income families at age 14 years. Decreasing-income households accounted for 19% of children at age 14 years. Children who had never lived in low-income households accounted for 86% of children at age 6 years; by age 14 years, this proportion had decreased to 62%.

Chronic-low-income households were predominantly headed by females and by women who had not completed high school (Table 2). These families experienced the greatest number of stressful life events, as indicated by the life-events instrument. Almost half of the households with increasing income were also headed by females, the majority of whom had not completed high school. Multiple stressful events were also more common in these families. Family stress during pregnancy and the postpartum period was also associated with current asthma at age 6 years; maternal history of asthma and young age were seen more often in chronic-low-income households and with child asthma at age 6 years (data not shown). There were no asthma risk factors in common across income categories and current asthma at age 14 years.

When defined as a dichotomous variable, low family income at age 1 year was not associated with asthma at age 6 years (unadjusted OR=0.95; 95% confidence interval [CI]=0.63, 1.42; adjusted OR [AOR]=0.91; 95% CI=0.60, 1.37). Similarly, there were no associations between low income at age 1 year and asthma at age 14 years (OR=1.10; 95% CI=0.62, 1.97; AOR=0.97; 95% CI=0.54, 1.75). No statistical associations were evident between low household income (defined as a dichotomous variable) at any age and asthma at ages 6 or 14 years.

Twenty-two percent of children living in chronic low-income families had asthma at age 6 years, compared with 18% of children not in this income group. Following adjustment for gender, preterm birth, maternal history of asthma, and dog ownership, the risk of asthma was higher among children in chronic low-income households, although it achieved marginal significance (OR=1.30; 95% CI=0.92, 1.83; Table 3). Further adjustment for pregnancy stress and for family stress at age 1 year

TABLE 1—Percentage of Children in Household Income Categories, by Child's Age: Western Australia Pregnancy Cohort (Raine) Study, Perth, Australia, 1989–2005

	Age 1 Year	Age 2 Years	Age 3 Years	Age 6 Years	Age 8 Years	Age 10 Years	Age 14 Years
Low income, % (low-income cutoff)	8.2 (<$24 000)	10.0 (<$27 000)	10.5 (<$26 000)	8.1 (<$26 000)	21.4 (<$30 000)	19.8 (<$30 000)	12.1 (<$30 000)
No. of trajectories identified	...	...	...	2	3	4	4
Chronic low income, %	...	...	...	13.6	13.2	6.2	7.4
Increasing income, %	...	...	...	...	...	10.1	11.8
Decreasing income, %	...	...	...	...	18.9	19	19
Not ever low income, %	...	...	...	86.4	67.9	64.7	61.8

TABLE 2—Maternal and Family Characteristics of Each Income Trajectory, by Child's Age: Western Australia Pregnancy Cohort (Raine) Study, Perth, Australia, 1989–2005

	Single-Parent Status at Age 1 Year		Mother Did Not Complete High School		Family Stress at Age 1 Year	
	Child Aged 6 Years, %	Child Aged 14 Years, %	Child Aged 6 Years, %	Child Aged 14 Years, %	Child Aged 6 Years, %	Child Aged 14 Years, %
Chronic low income	62.3	61.1	57.7	58.3	42.2	44.1
Increasing income	...	44.0	...	56.8	...	38.0
Decreasing income	...	9.6	...	58.7	...	26.3
Not low income	8.4	5.3	45.3	40.6	20.1	16.4
Total population	12.6	11.6	55.1	53.4	20.7	20.2

or persistent family stress from ages 1 to 6 years diminished the low-income association with asthma to nonsignificance. Single-parent status was positively (but not significantly) associated with asthma at age 6 years (OR=1.26; 95% CI=0.91, 1.74) and the inclusion of this variable in the model also lessened the effect of chronic low income (data not shown).

The risk of asthma at age 6 years was significantly greater among male children exposed to chronic low income (OR=1.64; 95% CI=1.04, 2.57; AOR=1.62; 95% CI=1.02, 2.56). Among female children, this association was not seen (OR=1.11; 95% CI=0.68, 1.81; AOR=1.01; 95% CI=0.60, 1.69).

At age 14 years, current asthma was distributed by income trajectory as follows: 14% of the chronic low-income trajectory, 11% of the decreasing-income trajectory, and 9% of the never low-income trajectory. At 7%, children in the increasing-income group had the lowest prevalence of asthma. Following adjustment for gender, single-parent status, maternal history of asthma, and cat ownership, a statistically significant increased risk of asthma was observed in the chronic low-income group (OR=2.30; 95% CI=1.23, 4.31). The increased risk for chronic low income was minimally diminished following further adjustment for family stress at age 1 year or for persistent family stress from ages 1 to 14 years. In all models, single-parent status at age 1 year was associated with a lessened risk of asthma. There were no associations between asthma and the other income trajectories, although the OR for increasing income was consistently less than 1. When we implemented a contrast statement comparing the increasing-income trajectory to the chronic low-income group, the OR adjusted for single-parent status and other confounding factors was statistically significant at a value of 0.37 (95% CI=0.16, 0.89).

The risk of asthma at age 14 years was 3-fold greater among female children exposed to chronic low income (AOR=2.95; 95% CI=1.22, 7.11). No associations were observed

TABLE 3—Likelihood of Having Asthma at Ages 6 Years (n=2151) and 14 Years (n=1796), by Income Trajectory: Western Australia Pregnancy Cohort (Raine) Study, Perth, Australia, 1989–2005

	Asthma at Age 6 Years, OR (95% CI)	Asthma at Age 14 Years, OR (95% CI)
Unadjusted model		
Chronic low income	1.30 (0.94, 1.81)	1.67 (0.97, 2.86)
Increasing income	...	0.79 (0.40, 1.55)
Decreasing income	...	1.26 (0.87, 1.83)
Model adjusted for asthma risk factors[a]		
Chronic low income	1.30 (0.92, 1.83)	2.30 (1.23, 4.31)
Increasing income	...	0.89 (0.43, 1.87)
Decreasing income	...	1.31 (0.89, 1.93)
Single parent family at age 1 y	not in model	0.49 (0.26, 0.94)
Model adjusted for asthma risk factors[a] and stress at age 1 y		
Chronic low income	1.14 (0.74, 1.75)	2.34 (1.22, 4.48)
Increasing income	...	0.92 (0.44, 1.92)
Decreasing income	...	1.29 (0.86, 1.94)
Single parent family at age 1 y	not in model	0.40 (0.20, 0.80)
Pregnancy stress	1.69 (1.15, 2.48)	0.99 (0.54, 1.80)
Family stress at age 1 y	1.42 (1.06, 1.90)	1.25 (0.81, 1.91)
Model adjusted for asthma risk factors[a] and chronic family stress		
Chronic low income	1.17 (0.82, 1.65)	2.21 (1.17, 4.17)
Increasing income	...	0.83 (0.39, 1.74)
Decreasing income	...	1.25 (0.84, 1.85)
Single parent family at age 1 y	not in model	0.45 (0.24, 0.87)
Pregnancy stress	1.48 (1.05, 2.08)	1.04 (0.59, 1.82)
Chronic family stress	1.82 (1.16, 2.85)	2.25 (1.28, 3.97)

Note. OR=odds ratio; CI=confidence interval. Ellipses indicate not applicable. Reference category is never low income.
[a]Asthma risk factors at age 6 years: gender, preterm birth, maternal asthma, and dog ownership in first year. Asthma risk factors at age 14 years: gender, maternal history of asthma, and cat ownership in first year.

with the increasing-income and decreasing-income trajectories. The increased risk for chronic low income was not diminished following further adjustment for family stress at age 1 year or for persistent family stress from ages 1 to 14 years. Among male children, asthma at age 14 years was not significantly associated with any of the income trajectories (for chronic low income, AOR=1.27; 95% CI=0.59, 2.73; for increasing income, AOR=0.87; 95% CI=0.36, 2.12; for decreasing income, AOR=1.15; 95% CI=0.69, 1.91).

DISCUSSION

In a general cohort of 2000 children born in Western Australia in the early 1990s, we observed that children who had lived in a low-income household since birth had a 2-fold increased risk of having asthma at age 14 years. This finding confirms previous associations found between chronic poverty and asthma.[20,21] We extended those findings in 2 important ways. First, we reported an association with asthma in adolescence. Second, we implemented measures of family-income trajectories created from statistical models. The trajectory method characterized sequential changes in family economic circumstances over time, such as increasing and decreasing income, and enabled us to parcel out the effects of chronic low income.

There were 4 other findings of note: (1) the association with chronic low income was stronger at age 14 years than at age 6 years, (2) the strength of the association was diminished after accounting for measures of family stress, (3) single-parent status and increasing income were associated with a decreased risk of asthma at age 14 years, and (4) the associations were gender specific. The plausibility and potential biological significance of each of these observations will be explored in detail.

Our definition of asthma had been validated previously.[28,29] Further, use of longitudinal data over 14 years allowed us to study the association between children's SES trajectories and 2 asthma phenotypes (asthma at early school age and asthma at adolescence). We found that chronic low income had a stronger association with asthma at age 14 years than at age 6 years. It is well-documented that asthma persists into adolescence in up to one third of children with early-onset wheeze; in addition, persistent asthma has greater heritability and is more likely to be atopic.[31] Our findings suggest that chronic low income may have a role to play in the development of persistent asthma.

In our study, family stress was twice as common in low-income households, and was more prevalent when poverty persisted. Pregnancy, early life stress, and chronic family stress were independently associated with asthma at age 6 years. These variables diminished the association between SES and asthma at age 6 years, suggesting that they play a role in the pathway between SES and child asthma. There is a growing body of literature on the association between child exposure to stress in early life and the development of asthma.[32–34] Caregiver stress in early life has been associated with increased levels of TNF-α in infants, a proinflammatory cytokine in asthma.[33] Scirica et al. reported that infants born into low-income households were more likely to have an atopic profile at birth, suggesting an influence of SES on the developing fetus.[35] Their findings were more pronounced among male infants, consistent with our finding that chronic low income was associated with asthma at age 6 years among boys but not girls. Similarly, others have linked parental stress to asthma among boys but not girls at age 6 years.[36]

By age 14 years, chronic life stress was associated with a 2-fold increase in asthma, whereas pregnancy and early life stress were not. Others have also reported that low-income adolescents were more likely to be exposed to chronic stress over their lifetime and to have asthma.[37,38] Family conflict has been known to precipitate elevated cortisol levels in children. Furthermore, heightened production of atopic cytokines, IL-5, and IL-13 has been reported in children with asthma experiencing higher stress levels, as have higher eosinophil counts.[7,39] Children with asthma who simultaneously experience acute and chronic stress exhibit a reduction in expression of the glucocorticoid receptor, which can increase the airway inflammatory response to allergens.[40] Finally, we found that chronic low income was strongly associated with asthma at age 14 years among girls but not boys. Although females with asthma are more likely to live in low-income environments, these findings are new to the literature.[41]

Our finding of an inverse association between having a single parent and having asthma at age 14 years suggests that children born to single parents live in a family SES environment that protects against asthma development. The single-parent effect appears to be related to the phenomenon of "moving out of poverty." Single parents accounted for 44% of households in the increasing-income category. When single-parent status was added to models, it diminished the inverse association between increasing income and asthma. Moreover, when we compared the increasing-income trajectory to the chronic low-income trajectory, the risk of asthma was reduced by more than 60%.

Our results are akin to those of Chen et al., who showed that asthma likelihood was lower among children whose families had moved up in income than among children who continued to live in a low-income family.[21] Children in low-income households experience higher rates of exposure to endotoxin and infections, which may protect against asthma development.[11] These exposures may disappear once household income improves,[42] but by then they would have had their effect in shaping the developing immune system during infancy.[43] On the other hand, persistence of these exposures may increase risk for asthma. Celedon et al reported that endotoxin exposure in early life protected against the development of atopy, but exposure in later life increased the risk of atopy.[44] It is also conceivable that stress levels in these families were lessened as they moved out of poverty; recent literature indicates that persistent stress has the greatest association with asthma.[32]

Although our findings have biological plausibility, they may be attributed to features of study design and execution. Reverse causation might explain the association between chronic low income and asthma because families caring for children with asthma report fewer hours of employment.[45] Reverse causation would not account for the inverse association between single parenthood and asthma, however. Loss to follow-up was also not a likely explanation for this inverse association because single-parented children lost to follow-up did not have higher asthma rates at age 6 years than did children remaining in the study. Our definition of asthma, which specifies treatment with asthma medications, could have resulted in the misclassification

of asthma status among children in single-parent families; children in single-parent households are less likely to receive controller asthma medications.[46] However, the same would hold true for children in chronic low-income families,[2] for which an inverse association was not observed.

In sum, we found an association between chronic exposure to a low-income environment from birth and the development of persistent asthma. In addition, we observed a protective effect against asthma among those children whose families had moved out of poverty. We propose family stress and endotoxin exposure in low-income households as explanations for these findings. Our findings give credence to the notion that SES "gets under the skin" to cause disease, but further study is required to elucidate specific pathways in asthma. However, our research does show that household SES has limited explanatory power as a static exposure measure and may hide valuable evidence for its role in asthma development. ■

About the Authors

At the time of the study, Anita L. Kozyrskyj was at the Telethon Institute for Child Health Research, Perth, Western Australia, on research leave from the University of Manitoba, Winnipeg, Canada. Garth E. Kendall was with the School of Nursing and Midwifery, Curtin University of Technology, Perth, Western Australia. Peter Jacoby, Peter D. Sly, and Stephen R. Zubrick were with the Telethon Institute for Child Health Research, Perth. Peter Jacoby and Peter D. Sly were also with the Centre for Child Health Research, University of Western Australia, Perth. Stephen R. Zubrick was also with the Centre for Developmental Health, Curtin University of Technology, Perth.

Correspondence should be sent to Anita L. Kozyrskyj, Department of Pediatrics, 8226a Aberhart Centre, 11402 University Ave, Edmonton, Alberta, Canada, T6G 2J3 (e-mail: kozyrsky@ualberta.ca). Reprints can be ordered at http://www.ajph.org by clicking on the "Reprints/Eprints" link.

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Contributors

A.L. Kozyrskyj conceptualized the study, designed and completed the analysis, and led the writing. G.E. Kendall, P.D. Sly, and S.R. Zubrick coordinated aspects of the Raine cohort data collection. P. Jacoby assisted with the statistical analysis. All authors helped to conceptualize ideas, interpret findings, and review drafts of the article.

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Human Participant Protection

This study was approved by the institutional ethics committee of the Princess Margaret Hospital for Children.

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GALLUP®

BUSINESS JOURNAL
January 13, 2015

American Entrepreneurship: Dead or Alive?

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by Jim Clifton
Chairman and CEO of Gallup

Story Highlights

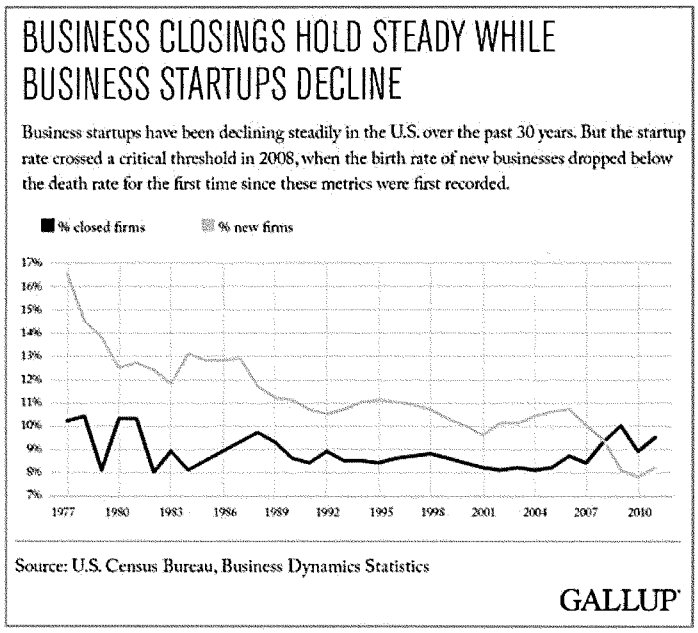
- *The birth and death trends of U.S. business must be reversed*
- *The economy is more important to security than the military*
- *America has misdiagnosed the cause and effect of job creation*

The U.S. now ranks not first, not second, not third, but 12th among developed nations in terms of business startup activity. Countries such as Hungary, Denmark, Finland, New Zealand, Sweden, Israel and Italy all have higher startup rates than America does.

We are behind in starting new firms per capita, and this is our single most serious economic problem. Yet it seems like a secret. You never see it mentioned in the media, nor hear from a politician that, for the first time in 35 years, American business deaths now outnumber business births.

The U.S. Census Bureau reports that the total number of new business startups and business closures per year -- the birth and death rates of American companies -- have crossed for the first time since the measurement began. I am referring to employer businesses, those with one or more employees, the real engines of economic growth. Four hundred thousand new businesses are being born annually nationwide, while 470,000 per year are dying.

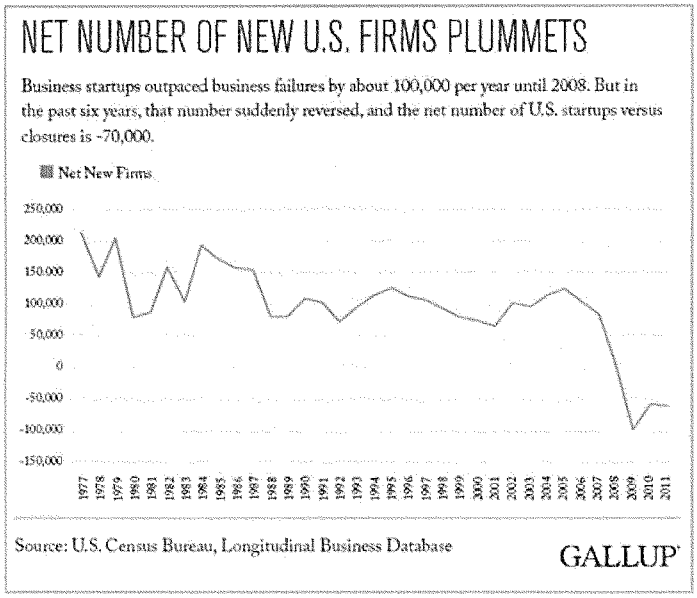
You may not have seen this graph before.



Until 2008, startups outpaced business failures by about 100,000 per year. But in the past six years, that number suddenly turned upside down. There has been an underground earthquake. As you read this, we are at minus 70,000 in terms of business survival. The data are very slow coming out of the U.S. Department of Census, via the Small Business Administration, so it lags real time by two years.

Net Number of New U.S. Firms Plummets

Business startups outpaced business failures by about 100,000 per year until 2008. But in the past six years, that number suddenly reversed, and the net number of U.S. startups versus closures is minus 70,000.



My hunch is that no one talks about the birth and death rates of American business because Wall Street and the White House, no matter which party occupies the latter, are two gigantic institutions of persuasion. The White House needs to keep you in the game because their political party needs your vote. Wall Street needs the stock market to boom, even if that boom is fueled by illusion. So both tell us, "The economy is coming back."

Let's get one thing clear: This economy is never truly coming back unless we reverse the birth and death trends of American businesses.

Dead-Wrong Thinking

It is catastrophic to be dead wrong on the biggest issue of the last 50 years -- the issue of where jobs come from. Our leadership keeps thinking that the answer to economic growth and ultimately job creation is more innovation, and we continue to invest billions in it. But an innovation is worthless until an entrepreneur creates a business model for it and turns that innovative idea in something customers will buy. Yet current thinking tells

us we're on the right track and don't need different strategies, so we continue marching down the path of national decline, believing innovation will save us.

I don't want to sound like a doomsayer, but when small and medium-sized businesses are dying faster than they're being born, so is free enterprise. And when free enterprise dies, America dies with it.

Let's run some numbers. You will often hear from otherwise credible sources that there are 26 million businesses in America. This is misleading; 20 million of these reported "businesses" are inactive companies that have no sales, profits, customers or workers. The only number that is useful and instructive is the number of current operating businesses with one or more employees.

There are only 6 million businesses in the United States with one or more employees. Of those, 3.8 million have four or fewer employees -- mom and pop shops owned by people who aren't building a business as much as they are building a life. And God bless them all. That is what America is for. We need every single one of them.

Next, there are about a million companies with five to nine employees, 600,000 businesses with 10 to 19 employees, and 500,000 companies with 20 to 99 employees. There are 90,000 businesses with 100 to 499 employees. And there are just 18,000 with 500 employees or more, and that figure includes about a thousand companies with 10,000 employees or more. Altogether, that is America, Inc.

Let me be very clear. America, Inc. is far more important to America's security than our military. Because without the former prospering -- and solvent -- there is no latter. We have enormous military power only because of a growing economy that has, so far, made it possible for the government to pay its bills. When former Chairman of the Joint Chiefs of Staff, Adm. Mike Mullen, was asked in a Senate hearing on June 28, 2011, to name the biggest current threat to the security of the United States, he didn't say al-Qaida. He didn't say Iran's nuclear capabilities. He answered, "I believe our debt is the greatest threat to our national security."

Declining Businesses Mean Declining Revenues for Social Spending

Keep in mind that these 6 million businesses, especially small and medium-sized ones, provide jobs for more than 100 million Americans and much of the tax base for everything. These small, medium and big businesses have generated the biggest

economy in the world, which has allowed the country to afford lavish military and social spending and entitlements. And we've been able to afford all of this because, until now, we've dominated the world economy.

When new businesses aren't being born, the free enterprise system and jobs decline. And without a growing free enterprise system, without a growing entrepreneurial economy, there are no new good jobs. That means declining revenues and smaller salaries to tax, followed by declining aid for the elderly and poor and declining funding for the military, for education, for infrastructure -- declining revenues for everything.

America has maintained the biggest tax coffers in the world because its 300+ million citizens have produced and owned one-quarter of virtually all global wealth. The United States clobbered everyone in the battle of free enterprise, in the battle of business building, and in the battle of inventing the future. Until recently, America had blown the world away in terms of economic success. We are now quickly losing that edge, and everything we're trying to do to fix the problem is dead wrong.

Here's why: Entrepreneurship is not systematically built into our culture the way innovation or intellectual development is. You might say, "Well, I see a lot of entrepreneurial activity in the country." Yes, that's true, but entrepreneurship is now in decline for the first time since the U.S. government started measuring it.

The whole country and subsequently the world are having their own dead-wrong moment, and it is causing America and the whole world to make everything worse. And people know it, though they may not know why. When Gallup asked Americans to rate how much they personally worry about particular problems facing the country, the top three issues that respondents worry about a "great deal" were the economy (59%), federal spending and the budget deficit (58%), and the availability and affordability of healthcare (57%).

The more we execute on our leadership's erroneous belief in innovation, the more our engine stalls out -- and the more people rightly worry about economic issues.

Because we have misdiagnosed the cause and effect of economic growth, we have misdiagnosed the cause and effect of job creation. To get back on track, we need to quit pinning everything on innovation, and we need to start focusing on the almighty entrepreneurs and business builders. And that means we have to find them.

Jim Clifton is Chairman and CEO of Gallup. He is the author of *The Coming Jobs War* and coauthor of *Entrepreneurial StrengthsFinder*.

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CONTACT: Gallup World Headquarters, 901 F Street, Washington, D.C., 20001, U.S.A +1 202.715.3030

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USA TODAY

More regulations equals less business: Column

Luke Hilgemann *4:55 p.m. EST March 2, 2015*

Regulations cost small businesses, the heart of US economy, the most

(Photo: Markell DeLoatch, AP)

The health of the American economy can easily be measured by the health of American businesses — especially the rate at which people like you and me start new ones. This simple metric shows whether the spirit of innovation and entrepreneurship is alive and well in our country.

It has been for most of our history. Take my father and uncle, for example. In 1973, they had their own American dream: Starting a business in Stratford, Wisc. and helping their community by

employing hundreds of their friends and neighbors. Today, the business they started more than 40 years ago is now an important part of north-central Wisconsin's economy.

But now the spirit of entrepreneurship appears to be dying.

For the first time since researchers began documenting it 35 years ago, more American businesses are closing than opening. Even economically depressed Italy — where growth has fallen 2%over the past four years — has a faster rate of business start-ups. America has now fallen out of the top 10 countries when it comes to the creation of new companies.

What explains these two terrifying trends — the death of so many businesses and the dearth of new ones? There are numerous factors, but one of the most obvious is America's ever-growing regulatory state.

For decades, American politicians — both Republican and Democrat — have wrapped businesses in suffocating amounts of red tape. Federal regulations now cost the American economy nearly $1.9 trillion every year — more than 10% of our nation's GDP. Add in state and local regulations, and that total is even higher.

Not surprisingly, the rates of business start-ups and deaths have changed for the worse as regulatory costs have grown. No wonder: Anyone who wants to stay in business has to keep finding more money to pay for higher costs, while anyone who wants to start a new business has to clear financial and legal barriers that get taller every year. The founder of Subway recently remarked that his company "would not exist" if today's regulatory burden had existed when he started it in the 1960s.

Simply look at the past few years to see how the regulatory state has grown. Between 2009 and 2013, the federal government added $494 billion in regulatory costs to the American economy. The highlight was 2012, when President Obama and his executive agencies published over $236 billion in new costs. As for 2014, the federal governmentannounced over 79,000 pages of new regulations, costing a total of $181.5 billion.

That's equivalent to 3.5 million median family incomes. But it isn't flowing to families through new jobs and higher wages — it's lost on lawyers, paperwork and other compliance costs.

And it isn't just Wall Street titans or multinational companies like Walmart that are hit with this ever-growing price tag. Large companies are actually paying less per employee — $7,700 — than small businesses, which pay an average of nearly $12,000 in regulatory costs for every person to whom they provide a paycheck.

This helps explain why businesses are dying faster than they're starting. Small businesses struggle to cope with the higher costs, both in time and money, associated with regulations — they have to

raise prices, slash growth plans, cut wages and benefits or lay off workers. And when they still can't afford to operate, many businesses are forced to close.

As this happens, the economy sheds number of companies that started out small and could have gone big. The real victims are the Americans for whom such businesses could have created job opportunities and prosperity.

But even worse is the situation that an increasing number of potential entrepreneurs find themselves in: Looking at the cost of starting a new business and deciding it isn't worth it. America's economy didn't become the envy of the world by keeping people on the economy's sidelines, and it certainly won't keep that mantle if politicians don't end their obsession with over-regulation.

Luke Hilgemann is the CEO of Americans for Prosperity .

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Economic Policy Institute - The State Of Working America

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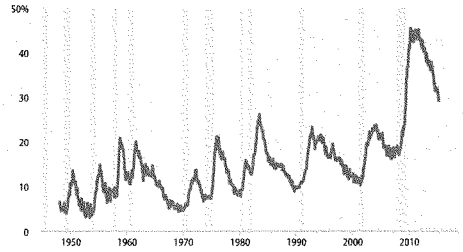

Chart | **Data**

Note: The long-term unemployment rate is the share of the unemployed who have been jobless for *more* than six months.
Source: EPI analysis of Bureau of Labor Statistics' Current Population Survey

Share

Updated May 5, 2015

This National Jobs chart is an Economic Indicator, updated when new data are released.

SUBJECT
Jobs

This chart is part of the **Great Recession** feature.

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Blacks, Hispanics reject Obama climate change agenda over concerns about poor

Minority leaders worry EPA carbon regulations will drive up utility bills, stifle opportunity

By Ben Wolfgang - *The Washington Times - Thursday, April 30, 2015*

The very same voters who helped put Barack Obama in the White House increasingly are turning against the president's climate change agenda, with influential black and Hispanic leaders warning that stiff regulations to limit carbon emissions will have a devastating effect on the poor and will further stifle economic opportunity for minorities.

Some of Mr. Obama's most ardent supporters say they simply cannot go along with the administration's increasingly ambitious program to combat global warming. They argue that, contrary to the Environmental Protection Agency's claims, the carbon regulations will drive up utility bills for poor households and will stunt economic growth in low-income areas.

The mounting wave of criticism shows that for many minority leaders who backed the president's election bids and support him on a host of other issues, Mr. Obama's environmental agenda runs counter to their chief concern: protecting the poor and ensuring that they can afford to keep their lights on.

"Cosmetically, it sounds good to say, 'We want to clean up the environment.' That's fine. But you're talking about eliminating one problem and creating another. We're talking about astronomical increases in utility bills. You've got people now who need to make a decision: Do I put gas in my car? Go to church? Buy my medicine?" said Charles Steele Jr., president of the Southern Christian Leadership Conference and a self-described Obama supporter.

"I think he's an outstanding individual, but the EPA is wrong on this issue. I want to be on the right side," he said. "I have to stand for what is right for poor people. Poor people

don't have lobbies. That's what people need to understand."

Mr. Obama aims to lead the world to a historic climate change agreement this year as the EPA finalizes its Clean Power Plan, an unprecedented set of regulations intended to greatly reduce emissions from power plants.

The final proposal, scheduled to be released this summer, is expected to call for a 30 percent cut in carbon emissions by 2030. The bulk of that reduction would come from coal-fired power plants.

Administration officials and environmental supporters argue that the power plant move — in conjunction with other steps such as increasing auto fuel efficiency — will decrease emissions, improve public health and spur economic growth through innovation and will drive investment into burgeoning industries such as the wind and solar power sectors.

Critics say the EPA plan will lead to job losses, higher electric bills, the closure of coal plants and an economic ripple effect that may hit minority communities hardest of all.

In addition to Mr. Steele, other powerful black and Hispanic leaders are pressing the EPA to change course.

"It is critical that the regulations coming out of Washington protect small business owners, in all communities, from increased electricity costs. If monthly energy bills get too high, business owners are forced to trim their spending in other areas, which too often includes payroll," the U.S. Hispanic Chamber of Commerce said in public comments submitted to the EPA. "We urge EPA to re-examine the impacts and implementation of its Clean Power Plan proposal, which we believe is currently too inflexible, costly and contains many unknown impacts."

The National Black Chamber of Commerce expressed similar concerns, telling the EPA in a written statement that the carbon rules will "ultimately force African-American business owners to eliminate good-paying jobs and become more financially unstable as energy costs rise."

The EPA also is contending with fierce accusations of misconduct and incompetence. Lawmakers say the agency has turned a blind eye to sexual harassment and other misdeeds.

The House Oversight and Government Reform Committee grilled administration officials Thursday for apparently promoting Peter Jutro to lead the EPA's office of homeland

security despite numerous accusations of sexual harassment. An EPA inspector general's report also found that agency employees were kept on the payroll after they were caught watching pornography at work.

"We've seen numerous examples of fraud, unprofessional behavior, cronyism and outright theft at the EPA," said Rep. Jason Chaffetz, Utah Republican and committee chairman. "It is well past time for someone to be held accountable for these management failings."

An EPA representative shot back against charges that sexual harassment was ignored, saying the agency "does not tolerate harassment in the workplace and finds such conduct completely unacceptable."

The EPA also dismisses concerns that its Clean Power Plan will harm minority communities. The agency insists the carbon regulations will benefit low-income areas specifically.

"There is strong scientific evidence that minority and low-income communities are especially vulnerable to the impacts of climate change and can be disproportionately harmed by pollution from industry and transportation. Reducing carbon and other air pollution nationally will have important benefits to these vulnerable groups and communities," the agency said in a statement.

The public health and climate benefits of the plan could total as much as $93 billion per year by 2030, the statement added.

Other data paint a much different picture.

A report from the center-right American Action Forum says the EPA plan could cause more than 90 coal-fired power plants to shut down.

The fallout from those closures could eliminate as many as 296,000 jobs, the survey says.

Other data show that blacks and Hispanics are much more concerned about the economic consequences of the president's policies than they are about climate change itself.

More than 75 percent of black and Hispanic voters say they worry about rising energy costs, according to a poll released in October by the American Coalition for Clean Coal Electricity, a leading critic of Mr. Obama's climate agenda.

The survey also said that just 3 percent of black voters and 7 percent of Hispanic voters think climate change is the issue that impacts their communities most.

About 60 percent of black and Hispanic voters say the administration should focus on keeping energy prices low rather than pursuing climate regulations, according to the poll.

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DOCUMENTS SUBMITTED BY REPRESENTATIVE LOUDERMILK

INTERNAL DELIBERATIVE DOCUMENT OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY

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To: Best-Wong, Benita[Best-Wong.Benita@epa.gov]; Evans, David[Evans.David@epa.gov]
Cc: Kaiser, Russell[Kaiser.Russell@epa.gov]; Downing, Donna[Downing.Donna@epa.gov]
From: Pendergast, Jim
Sent: Tue 11/19/2013 2:02:04 PM
Subject: RE: Consequences of WUS Proposed Rule Considered as Economically Significant

Good news. Tomeka and Sandy talked to Ken, and Ken said it has been agreed we do not need an RIA. Let's leave this at that.

From: Pendergast, Jim
Sent: Tuesday, November 19, 2013 8:42 AM
To: Best-Wong, Benita; Evans, David
Cc: Kaiser, Russell
Subject: RE: Consequences of WUS Proposed Rule Considered as Economically Significant

Just got off the phone with Sandy and Tomeka. They say that Nancy and Ken know that an RIA may be necessary, but that there are some economically significant rules from EPA that haven't had an RIA. They are checking with OP to see if there was some agreement at the political level that we don't need to conduct an RIA. Geez.

From: Pendergast, Jim
Sent: Tuesday, November 19, 2013 8:28 AM
To: Best-Wong, Benita; Evans, David
Cc: Kaiser, Russell
Subject: Consequences of WUS Proposed Rule Considered as Economically Significant

Benita – We're following up on the info you passed on from the Nov. 15 OW office directors meeting regarding the proposed rule. You relayed to us that Greg Peck said the rule was now considered significant, and that OMB was unlikely to change that designation, and that what we needed to do was revise the economic analysis.

We double checked on this. Turns out that the rule is now considered as "economically significant" by OMB. We checked with Caryn Muellerleile of OP on what this means in terms of information that EPA has to deliver. Caryn informed us that under EPA guidance (see page 49 of the attached), EPA develops a Regulatory Impact Analysis for economically significant rules.

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So what is a Regulatory Impact Analysis? It is the information required by EO 12866 in section 6(a)(3)(C) which includes alternatives to the rule along with costs and benefits for those alternatives. In short hand, it's similar to conducting an EIS for the rule – alternatives and analysis. Of course, we have not scoped alternatives so this a quite a bit more than tweaking our current economic analysis. I've also attached the Executive Order along with OIRA's FAQs on RIAs so you can see that the EPA guidance also follows OIRA guidance.

I've calls into EAD to get a sense on how much time it takes to develop an RIA. I've personally never been involved in one so thus need to reach out to those with expertise.

I see a need to get this info up to Nancy ASAP. The Regulatory Agency is soon to be locked down and published, and it currently says the WUS rule is economically significant. Caryn tells us that we the Reg Agenda doesn't force us to agree to the rule being economically significant, but that it will be harder to get OMB to agree to a change once the Agenda is published.

Jim

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To: Neugeboren, Steven[Neugeboren.Steven@epa.gov]
From: Evans, David
Sent: Tue 11/5/2013 10:14:04 PM
Subject: RE: WOUS/EO 12866 issue for bob p triweekly tomorrow

Steve,

Economic assessment identified "indirect" costs that are well above $100 M/yr. I think EPA has claimed the indirect effects of a definitional rule should not be used to trigger that $ threshold identifying economically significant policy actions. Jim Laity seems to have decided otherwise. In any case, as you note, it was going through formal interagency review already, so impact not evident.

Dave Evans

David S. Evans, Acting Deputy Director

Office of Wetlands, Oceans and Watersheds

Phone: 202-566-0535

From: Neugeboren, Steven
Sent: Tuesday, November 05, 2013 5:10 PM
To: Evalenko, Sandy; Wendelowski, Karyn
Cc: Nelson, Tomeka; Lousberg, Macara; Corona, Joel; Srinivasan, Gautam; Wendelowski, Karyn; Mallory, Brenda; Peck, Gregory; Best-Wong, Benita; Evans, David; Pendergast, Jim
Subject: WOUS/EO 12866 issue for bob p triweekly tomorrow

I'm copying other relevant folks from WLO as well as Brenda Mallory, who should be attending the mtg with bob for OGC, and our cross-cutting issues lawyers and OWOW. OW is looking for any OGC advice as to whether categorizing the proposed waters of US rule as "economically significant" has legal implications.

As I understand it we have done an economic analysis and I assume the impacts are well below 100 million, but OWOW can inform. But I assume we have in the past sent rules like this to

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OMB under the rubric of its raising "novel legal and policy issues." So it's not clear to me whether/how this is raising a new issue but I'm teeing up for general group grope given the short timeline for OP's request to OW.

From: Evalenko, Sandy
Sent: Tuesday, November 05, 2013 4:56 PM
To: Wendelowski, Karyn; Neugeboren, Steven; Neugeboren, Steven
Cc: Nelson, Tomeka; Lousberg, Macara; Corona, Joel
Subject: Time sensitive question re WOUS
Importance: High

We received the email below from OP asking for OW's official position on whether we agree with OMB's determination that the WOUS rule is economically significant under E.O. 12866. Attached is a document that outlines some of the pros and cons associated with OMB's determination. Are there any legal consequences of OMB's economically significant determination for the WOUS rule a definitional rule? Would we set a precedent for EPA or OW by accepting their determination that the WOUS rule will have an effect of $100 million or more annually?

This issue will be discussed the Tri-Weekly tomorrow with Bob P. It is important that we know if there are any legal implications associated with OMB's determination. Please let me know if OGC has any comments on the attached document.

Thanks,

Sandy

From: Muellerleile, Caryn
Sent: Thursday, October 31, 2013 9:58 AM
To: Evalenko, Sandy; Nelson, Tomeka
Subject: WUS

Hi,

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Generally speaking, EPA does not write many definitional rules, but they are generally not considered to have "direct" impacts. Other rules, such as OAR's NAAQS, do set national air standards that the states then implement, and those are considered economically significant. However, since they are not definitional, but rather setting a specific standard, they are not equivalent in comparison.

OP requests that OW provides its official position on that WUS notice of proposed rulemaking should be – significant under EO 12866 as having "an annual effect on the economy of $100 million or more…" or as raising "novel legal or policy issues…" Note that the preamble that is under interagency review currently states the latter.

Please feel free to call if any questions!

Caryn Muellerleile

Regulatory Management Division

Office of Policy

US Environmental Protection Agency

1200 Pennsylvania Ave NW (1806A)

Washington, DC 20460

(202) 564-2855

muellerleile.caryn@epa.gov

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United States Senate
WASHINGTON, DC 20510

June 17, 2015

The Honorable Gina McCarthy
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Dear Administrator McCarthy,

We are concerned that the Environmental Protection Agency (EPA) is overlooking important consequences that will result if its proposal to significantly reduce National Ambient Air Quality Standards (NAAQS) for ground level ozone is finalized. As healthcare professionals we rely upon the most accurate health data. From this vantage, we believe that the proposal's harm outweighs its claimed benefits and are concerned that it could ultimately undermine our constituents' health. In light of the significant ongoing improvements to air quality, progress that will continue even without new regulations, we encourage EPA to maintain the existing NAAQS for ground level ozone.

We support better air quality and are proud of the progress on air quality that this country has made since Congress passed the Clean Air Act. According to EPA's data, emissions of ozone precursors have been cut in half since 1980, resulting in a 33 percent drop in ozone concentrations in the U.S.[1] EPA projects that air quality will continue to significantly improve as states implement federal measures already on the books, including the current ozone NAAQS set in 2008. We note that EPA delayed implementing that standard from 2010-2012 while it considered replacing it with standards similar to those it is now proposing – a reconsideration that the White House ultimately abandoned in light of the high economic impact.

In the face of this continuing improvement to air quality, EPA has asserted more stringent ozone standards are necessary to protect public health. For example, EPA has claimed that reducing ozone-forming emissions will counteract asthma prevalence. However, according to the EPA and the Centers for Disease Control and Prevention, asthma prevalence has increased by 15 percent since 2001[2], while ozone concentrations have decreased by 18 percent[3] during the same time period. This lack of correlation highlights important questions concerning the validity of EPA's conclusions.

Stakeholders have raised even more fundamental concerns regarding the science and estimated health benefits that are critical to the proposal's justification. For example, EPA

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[1] EPA. "National Trends in Ozone Concentrations in 1990-2013." http://www.epa.gov/airtrends/ozone.html.

[2] Centers for Disease Control and Prevention. "Trends in Asthma Prevalence 2001-2010." http://www.cdc.gov/nchs/data/databriefs/db94_tables.pdf#1.

[3] EPA. "National Trends in Ozone Concentrations in 1990-2013." http://www.epa.gov/airtrends/ozone.html.

concluded that four controlled exposure studies[4,5,6,7] where healthy young adults were exposed to ozone or filtered air for 6 hours during and after which their lung function was measured support lowering the ozone standard. EPA indicated that these studies support this conclusion, because the authors found temporarily reduced lung function and more respiratory symptoms at exposures below or equal to 0.072 ppm.[8] Each of these studies, however, evaluated fewer than 60 people. We believe the limited number of subjects studied impacts the quality of data needed to make informed health-based determinations. Importantly, few of these subjects experienced a loss of more than or equal to 10 percent of their baseline lung function in ozone exposures below 0.080 ppm. This is EPA's current benchmark for ozone response. Furthermore, one study reports that just three subjects had more than or equal to a 10 percent response at 0.060 ppm,[9] and in another study, only six subjects had such a response at 0.072 ppm.[10] These studies also involved individuals performing nearly constant exercise for long periods of time, leading to unrealistically high exposure scenarios not experienced by most people, including children and other sensitive subgroups, in the ordinary course of their lives. Thus, these studies' findings are again far too limited to be appropriately applied to the general U.S. population, or, for that matter, to groups of sensitive individuals in the population. As a whole, these controlled exposure studies do not support the necessity for a lower standard.

EPA also bases its decision to lower the current ozone standard in part on "a large number" of new epidemiology studies investigating health effects associated with both short- and long-term ozone exposures. EPA concluded that short-term ozone exposure causes respiratory effects and is "likely" associated with cardiovascular effects and all-cause mortality, while long-term exposure is "likely" associated with respiratory morbidity and mortality.[11] However, EPA concluded that a number of errors in the ozone epidemiology studies limit their use for risk assessment.[12] For these same reasons, we believe that these studies are not adequate and do not support a lower standard.

While the benefits from this proposal are questionable, the costs are real. EPA's proposed ozone standards are so stringent that they would not be met even in rural areas like the

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[4] Adams, WC. 2002. "Comparison of chamber and face-mask 6.6-hour exposures to ozone on pulmonary function and symptoms responses." *Inhal. Toxicol.* 14(7):745-764.

[5] Adams, WC. 2006. "Comparison of chamber 6.6-h exposures to 0.04-0.08 ppm ozone *via* square-wave and triangular profiles on pulmonary responses." *Inhal. Toxicol.* 18(2):127-136.

[6] Schelegle, ES; Morales, CA; Walby, WF; Marion, S; Allen, RP. 2009. "6.6-Hour inhalation of ozone concentrations from 60 to 87 parts per billion in healthy humans." *Am. J. Respir. Crit. Care Med.* 180(3):265-272.

[7] Kim, CS; Alexis, NE; Rappold, AG; Kehrl, H; Hazucha, MJ; Lay, JC; Schmitt, MT; Case, M; Devlin, RB; Peden, DB; Diaz-Sanchez, D. 2011. "Lung function and inflammatory responses in healthy young adults exposed to 0.06 ppm ozone for 6.6 hours." *Am. J. Respir. Crit. Care Med.* 183:1215-1221.

[8] EPA. 2014. "National Ambient Air Quality Standards for Ozone (Proposed Rule)." 40 CFR Parts 50, 51, 52, 53, and 58. Accessed at http://epa.gov/glo/actions.html#nov2014.

[9] Kim *et al.* (2011).

[10] Schelegle *et al.* (2009).

[11] 79 Fed. Reg. 75234 (Dec. 17, 2014)

[12] *Id. at* 75276

Yellowstone and Grand Canyon National Parks. Across the country, more than 2,000 parishes and counties, well over half the nation, could fall into nonattainment. Pushing regions of our states into nonattainment will lead to the loss of industry and economic development as well as federal highway and transit funding. In fact, this proposal affects the entire U.S. economy. The day it is finalized air permits needed to build or expand facilities and create jobs even in areas already in attainment will become more stringent. Overall, analysis done by NERA Economic Consulting indicates that the proposed rule could reduce the U.S. GDP by $140 billion per year and $1.7 trillion from 2017 to 2040, resulting in significant job losses through 2040 and making the proposal the most expensive regulation in U.S. history.[13]

If the true intent here is to improve public health, then the Agency should factor how its ozone proposal affects every aspect of human health – including impacts from unemployment, poverty, and reduced access to health insurance. Public health should not be viewed in a vacuum, but rather considered holistically, mindful of the correlation between health and the economy. For example, a recent study by Dr. Harvey Brenner shows there is sufficient scientific and macro-economic evidence to support the link between income and health. According to Dr. Brenner, the phenomenon known as the "social gradient" of health shows that illness and mortality rates, regardless of diagnostic cause, age, gender, ethnicity or nationality, are inversely related to one's socio-economic status (SES).[14] Dr. Brenner not only stresses the effects of regulatory activity on employment loss, but also finds that an individual's health declines from losses in household income. Specifically, Dr. Brenner's work states:

> *"Income is one of the key predictors of health and life expectancy that is observed in epidemiological studies of the impact of socio-economic status on illness and mortality. Socio-economic status, in turn, is the single most important predictor for individuals, for mortality rates, for all causes, in the U.S. and other industrialized countries."*

Dr. Brenner's findings echo those of a 1995 study by EPA, which found that:

> *"People's wealth and health status, as measured by mortality, morbidity, and other metrics are positively correlated. Hence those who bear a regulation's compliance cost may also suffer a decline in their health status, and if the costs are large enough, these increased risks might be greater than the direct risk-reduction benefits of the regulations."*[15]

According to 2013 U.S. Census Bureau data, of the 123 million households in the U.S., 8.9 million households have a pretax annual income of $10,000 or less.[16] In light of the link

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[13] NERA. "Economic Consulting: Economic Impacts of a 65 ppb National Ambient Air Quality Standard for Ozone."

[14] M. Harvey Brenner, University of North Texas Health Science Center and Johns Hopkins University, Bloomberg School of Public Affairs, "Impact of national unemployment and income on health in the United States and Europe: Recent evidence bearing on the potential impact of EPA regulations," (March 17, 2015).

[15] EPA, Economic Analysis and Innovations Division. "On the relevance of risk-risk analysis to policy evaluation," (August 16, 1995).

[16] U.S. Census Bureau. "Current Population Survey 2014 Annual Social and Economic Supplement," http://www.census.gov/hhes/www/cpstables/032014/hhinc/hinc01_000.htm.

between income and public health, we are concerned that EPA's proposal will severely impact low income families, potentially forcing them to sacrifice basic human needs such as food, clothing or medical care. While cost of compliance is not a factor in determining NAAQS, we believe costs should be considered when, as here, they result in loss income associated with negative health effects.

Studies show that income is a key factor in public health, a link confirmed by our first-hand experience as medical professionals caring for patients, including the low income and uninsured. As well, stakeholders have noted serious questions regarding the health benefits EPA claims to support the proposal, and we are concerned that the uncertain benefits asserted by EPA in its ozone proposal will be overshadowed by its harm to the economy and human health. In light of the long-term continuing trend towards cleaner air, as well as ongoing work by states toward further improvements under existing regulations, we encourage EPA to protect American jobs, the economy, and public health by maintaining the existing ozone NAAQS.

Sincerely,

Bill Cassidy, M.D.
United States Senate

Michael Burgess, M.D.
Member of Congress

John Barrasso, M.D.
United States Senate

John Boozman, O.D.
United States Senate

Rand Paul, M.D.
United States Senate

Earl Carter, Pharm.D.
Member of Congress

Phil Roe, M.D.
Member of Congress

John Fleming, M.D.
Member of Congress

Diane Black, R.N.
Member of Congress

Ralph Abraham, M.D.
Member of Congress

Brian Babin, D.D.S.
Member of Congress

Dan Benishek M.D.
Member of Congress

Charles Boustany, M.D.
Member of Congress

Larry Bucshon, M.D.
Member of Congress

Scott DesJarlais, M.D.
Member of Congress

Renee Ellmers, R.N.
Member of Congress

Paul Gosar, D.D.S.
Member of Congress

Andy Harris, M.D.
Member of Congress

Tim Murphy, PhD.
Member of Congress

Tom Price, M.D.
Member of Congress

Mike Simpson, D.M.D.
Member of Congress

Brad Wenstrup, D.P.M.
Member of Congress

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