TESTIMONY OF
MICHAEL O. LEAVITT
ADMINISTRATOR
U.S. ENVIRONMENTAL PROTECTION AGENCY
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SUBCOMMITTEE ON CLEAN AIR, CLIMATE, AND NUCLEAR SAFETY

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Mr. Chairman and Members of the Subcommittee, I appreciate the opportunity to come before you today to discuss the status of the Environmental Protection Agency's (EPA) progress in implementing the National Ambient Air Quality Standards for fine particle (PM2.5) and ground-level ozone pollution. I am proud to say that our implementation of these standards demonstrates that we are increasing the velocity of environmental progress. As an Agency and as a country, I believe we have initiated the most productive period of air quality improvement in the history of our Nation.

On April 15 of this year, I am required by consent decree to tell certain local areas across the country that their air quality does not meet federal health-based ozone standards. Later this year, pursuant to the schedule Congress enacted in the Consolidated Appropriations Bill of FY2004, I will do the same for those areas that do not meet federal health-based fine particle standards. As a former governor, I understand what this means.

That is why I also want to tell the affected state and local governments, and their citizens, that the federal government is doing its part to help them meet these standards and improve air quality. That is why the Agency is moving forward with both the Interstate Air Quality Rule (IAQR) that we proposed last December and the proposed nonroad rule for construction, agricultural and industrial diesel equipment. Those two programs, as proposed, combined with other existing programs, including the Tier 2/gasoline sulfur standards for cars and light trucks, the NOx SIP Call Rule to reduce interstate ozone transport, and the Clean Diesel Program for new trucks and buses, would bring well over half of counties now monitoring nonattainment into attainment with the fine particle and ozone standards between now and 2015.

In 1997, EPA adopted health-based standards for fine particles and ozone. At the time, the standards were controversial, especially the fine particle standards. Numerous parties challenged the standards in the courts. After several decisions, including a Supreme Court decision, the legal questions surrounding the standards were largely resolved in EPA's favor. Since the standards were issued, the scientific understanding of the fine particle problem has grown and deepened – independent reviews of the scientific basis for EPA's decision, and additional research, have affirmed the need to regulate fine particles.

With the legal issues settled, and our understanding of the science even further advanced, we are focusing on implementation of the standards. When the PM2.5 and 8-hour ozone standards were adopted, some raised significant concerns about whether it was possible to reduce air pollution enough to meet the standards at a reasonable cost. The picture is much improved since 1997. Today we already have proposed or adopted national programs that will bring many areas in the country into attainment with these standards at a reasonable cost. Our past experience under the Clean Air Act suggests that the development of cleaner technologies, which is continuing on many fronts, will help even the areas with the most difficult pollution problems make progress at a reasonable cost in new ways we cannot identify today.

My testimony will focus on two different aspects of implementing these standards. First, in the Clean Air Act, Congress established a framework for attaining air quality standards. This framework includes milestones for defining the scope of the problem, setting forth solutions, and measuring progress. Today I will report on where we are in meeting these milestones. The second major aspect of implementation is identifying and achieving the emission reductions necessary for communities to meet the standards. We are doing this in a better way than we have done in the past. Even though we are at a relatively early stage in the implementation process (State plans are not due until 2007), we have already identified major steps that EPA needs to take at a federal level and are well on our way to adopting these measures. We are also working with our State, Tribal and local partners to address ozone and fine particle problems in a coordinated manner. We have put together a package of actions – combining federal action on stationary, mobile and nonroad sources – that put us on the way towards meeting the national standards for fine particles and ozone.

BACKGROUND

Before discussing what we are doing to reduce fine particle and ozone pollution, I would like to explain why we need to reduce this pollution to bring healthy air to our communities.

Of the many air pollutants regulated by EPA, fine particle pollution is perhaps the greatest threat to public health. Dozens of studies in the peer reviewed literature have found that these microscopic particles can reach the deepest regions of the lungs. Although it is difficult to establish causality, exposure to fine particles is associated with premature death, as well as asthma attacks, chronic bronchitis, decreased lung function, and respiratory disease. Exposure is also associated with aggravation of heart disease, leading to increased hospitalizations, emergency room and doctor visits, and use of medication. Based on 2000-02 data, 65 million people live in counties showing violations of the fine particle standards (see Figure 1). At the present time, PM2.5 violations are occurring primarily in California and in the eastern half of the United States.

Particulate matter is the general term used for a mixture of solid particles and liquid droplets found in the air. PM2.5 describes the “fine” particles that are less than or equal to 2.5 micrometers in diameter. PM2.5 is formed mostly through atmospheric chemical reactions. These reactions involve a number of precursor gases including

sulfur dioxide (SO2) from power plants and industrial facilities; nitrogen oxides (NOx) from power plants, automobiles, diesel engines, and other combustion sources; carbon formed from organic compounds, including a number of volatile organic compounds from automobiles and industrial facilities; and ammonia from animal husbandry. These chemical reactions take place in the hot summer and cooler autumn and winter seasons. PM2.5 can also be emitted directly from certain sources, such as industrial facilities, diesel engines and fire. PM2.5 concentrations can be elevated at all times of the year, not just in the summertime. Changing weather patterns contribute to yearly differences in PM2.5 concentrations from region to region. Also, PM2.5 can also be transported into an area from sources found hundreds or thousands of miles upwind.

Ground-level ozone continues to be a pollution problem in many areas of the United States. Ozone (a major component of smog) is a significant health concern, particularly for people with asthma and other respiratory diseases, and children and adults who are active outdoors in the summertime. Ozone can exacerbate respiratory symptoms, such as coughing and pain when breathing deeply. Ozone may reduce lung function and inflame the linings of the lung. Ozone has also been associated with increased hospitalizations and emergency room visits for respiratory causes. Repeated exposure over time may permanently damage lung tissue. Based on 2000-02 data, more than 110 million people live in counties that have monitors registering violations of the 8-hour ozone standard (see Figure 1).

Ozone is rarely emitted directly into the air but is formed by the reaction of volatile organic compounds (VOCs) and NOx in the presence of sunlight. Ground-level ozone forms readily in the atmosphere, usually during hot summer weather. VOCs are emitted from a variety of sources, including motor vehicles, chemical plants, refineries, factories, consumer and commercial products, other industrial sources, and biogenic sources. NOx is emitted from motor vehicles, power plants, and other sources of combustion. Changing weather patterns contribute to yearly differences in ozone concentrations from region to region. Ozone and the pollutants that form ozone also can be transported into an area from pollution sources found hundreds of miles upwind.

CLEAN AIR ACT FRAMEWORK – MILESTONES FOR ASSESSING PROGRESS

The Clean Air Act establishes a joint federal and state process for air quality management. The process starts when EPA sets (or revises) National Ambient Air Quality Standards (NAAQS.) These standards are based on the best available scientific information and are to be set at a level requisite to protect public health with an adequate margin of safety and to protect public welfare from adverse effects. Although States are given primary responsibility for developing plans to meet the standards, EPA also issues federal rules that will result in emission reductions at a national or regional level.

In 1997, EPA set fine particle standards. Although EPA had previously issued standards governing particle pollution, this was the first time that EPA specifically regulated particles 2.5 microns or smaller. At the same time, EPA also set a new ozone standard, measured over eight hours instead of one hour, that is more protective of public health. Setting these standards triggers federal, state and local actions to ensure

that all areas in the country meet these standards. Although some of these actions were delayed due to litigation, we are now implementing these standards.

The first phase in implementing these standards is to assess and define the scope of the problem by designating areas with respect to their attainment status. The Clean Air Act requires that those areas that violate the standards, or contribute to a violation, be designated "nonattainment" areas. All other areas are attainment or unclassifiable. States, Tribes, and EPA collect data from air quality monitors and evaluate the results. The calculation for determining whether an area is violating the ozone or fine particle standard is based on three-years of air quality data. Based on this data, States and Tribes recommend to EPA each area's designation and, considering additional factors, also recommend to EPA each area's boundaries. EPA responds to the recommendations and explains any modifications to the State and tribal recommendations. Then, EPA issues a final action setting each area's boundaries and its designation. As part of this process for many ozone areas, EPA also sets the date by which each nonattainment area must come into attainment. Air quality designations inform citizens living and working in an area of the quality of air that they are breathing.

Under the Clean Air Act, once an area's designation as a nonattainment area becomes effective, a number of Clean Air Act provisions designed to bring areas into attainment are triggered. States, some Tribes, and local governments develop implementation plans that contain enforceable measures to reduce emissions and demonstrate that nonattainment areas will come into attainment. These plans can rely on a combination of federal, state and local measures to achieve the necessary air quality improvements. These plans generally are due three years after the effective date of the designation of a nonattainment area. EPA reviews these plans to ensure that they meet the minimum Clean Air Act requirements.

Progress on Milestones for Fine Particles

We are in the process of designating areas with respect to their fine particle attainment status. These designations will be based on data from a new monitoring network that Congress funded and that EPA and the States installed after the fine particle standards were set. Under the Consolidated Appropriations Bill of FY2004, States and Tribes were to give us their recommendations for designations of areas as attainment, nonattainment or unclassifiable and for the boundaries of those areas in February 2004. As of March 19th, 44 States and 2 Tribes have submitted their recommendations. In late summer, we will send letters to the States responding to their recommendations. The public will have an opportunity to submit additional information before EPA designates areas in December 2004.

Fine particle State Implementation Plans (SIPs) will be due in February 2008. EPA intends to propose a rule this June that would describe the minimum elements required for a fine particle SIP, and intends to finalize this rule later this year or early in 2005. The Clean Air Act requires areas to attain the fine particle standards as expeditiously as practicable. Given the guidance in the Clean Air Act, attainment dates for PM2.5 are expected to range from about 2010 to 2015 depending on the severity of the air quality problem and other factors.

Progress on Milestones for Ozone

We are farther along in designating areas with respect to their ozone attainment status because we already had an ozone monitoring network in place when we issued the revised ozone standards in 1997. States and Tribes have submitted their recommendations, EPA has provided initial responses to those recommendations and given the public an opportunity to comment on them. No later than April 15, 2004, EPA will issue a final action designating all areas of the country with respect to their 8-hour ozone attainment status. (This date is set forth in a consent decree entered to resolve a lawsuit).

As a former governor, I know that, for many nonattainment areas, setting the area's boundaries is not a decision to be made lightly. I have already spent much time talking to representatives of specific areas and States to ensure that EPA is adequately taking specific local circumstances into account. In setting boundaries, EPA started with the presumption that they should mirror the boundaries of the consolidated metropolitan statistical area (CMSA) or metropolitan statistical area (MSA) (as defined in 1999). The presumed boundaries can be adjusted, however, based on eleven factors that EPA negotiated with the States. These factors include traffic and commuting patterns, meteorology, population density, and location and size of emissions sources. EPA's role is to ensure that the law is applied consistently across the country, while taking into account the particular facts in each area. Decisions about nonattainment areas in one State or Tribal area can impact our choices in other areas. We are working with our Regional offices and the various Tribes and States now to ensure that the designations I make are fair and defensible.

After areas are designated nonattainment, they will have three years to submit plans demonstrating that they will attain the 8-hour ozone standard. The Clean Air Act requires areas to attain the ozone standards as expeditiously as practicable. Given the guidance in the Clean Air Act, attainment dates are expected to range from 2007 to 2019 depending on the severity of the ozone problem and other factors.

In response to the Supreme Court decision on the NAAQS, EPA is issuing an 8-hour ozone implementation rule to clarify the Clean Air Act requirements that apply to state plans for meeting the 8-hour ozone standard. We proposed this rule in June 2003, and will issue it as a final rule in two parts. The States, affected sources, environmental organizations, as well as the public at large, have offered substantial input in the development of this rule. The first phase of the rule contains a system for categorizing areas based on the severity of their air quality problem, sets deadlines for attaining the standards, defines when EPA will revoke the 1-hour ozone standards, and defines requirements to avoid "backsliding" or losing progress in air quality improvements as we make the transition from implementing the 1-hour standard to the 8-hour standard. We intend to issue this phase no later than April 15, 2004. We intend to finalize a second phase of this rule late this summer. After publication of the second phase of the rule, we anticipate providing an outreach program to facilitate States' understanding of the provisions of the rule.

IMPLEMENTING THE STANDARDS – PROGRAMS TO REDUCE OZONE AND FINE PARTICLE POLLUTION

The Clean Air Act sets up the framework for assessing our air quality problems and our progress in addressing them, but in large part it leaves open what I believe is the most interesting and most pressing issue – how do we reduce pollution to make the air cleaner so that the standards are met. I am very pleased to report that we already have a plan to bring many areas of the country into attainment with these standards, even though we are just at the beginning of the time period that the Clean Air Act set up for the development of attainment plans. While we know that in some places local controls will be key for areas to attain the standards, EPA is focusing on the two major sources of pollution that are best controlled at the national level – power plants and new mobile sources. By controlling these sources, we will eliminate or significantly reduce the fine particle or ozone pollution problem across large parts of the country. Thus, states will know the scope of the air quality issue they need to address, which will help them focus their planning efforts.

We have initiated as an agency and as a country what I believe will be the most productive period of air quality improvement in the history of our Nation. EPA projects that adopted and proposed regulatory measures, combined with other existing federal and state programs, will bring well over half of the areas of the country into attainment with the fine particle and ozone standards between now and 2015. With these programs, even before new local controls are considered, our projections indicate that the number of Eastern counties in the United States violating the ozone and fine particle standards in 2015 will drop from 317 to 39, as highlighted in Figure 2. In addition to the health benefits of reducing fine particle and ozone pollution, these programs will also help improve visibility, decrease acid rain, and reduce eutrophication of our lakes, streams and rivers.

This tremendous progress is possible because we are putting forward a suite of air quality improvements that are about to become effective or will soon be adopted:

- the proposed interstate air quality rule, which should make even more dramatic cuts in power plant pollution;
- the NOx SIP Call, which States are implementing to reduce power plant emissions;
- standards for new cars, and light duty trucks and the fuels they use;
- standards for heavy-duty on-road diesel engines and the fuels they use;
- the proposed standards for new heavy-duty nonroad diesel engines (used in construction, agricultural, mining, airport service, etc.) and the fuels they use;
- voluntary diesel retrofit and idling programs to reduce emissions from the existing fleet, including school buses.

Power Plants

EPA has proposed the Interstate Air Quality Rule, which would cap power plant emissions of sulfur dioxide and nitrogen oxides in the East by 70 and 65 percent

respectively below 2000 levels. This would go a long way to help many areas attain the fine particle standards and, to a lesser extent, the ozone standards.[1] Power plants emit 63 percent of the country's SO2 emissions, which are a major contributor to fine particle pollution. They also emit 22 percent of man-made NOx emissions, which contribute to fine particle pollution year-round and to ozone pollution in the summer. We proposed that power plants reduce these emissions through a cap-and-trade program, which would tell industry what level of reductions are required but allow them to make them in the most economical way. Although we would prefer that Congress pass the President's proposed Clear Skies Act, the emission reductions are so important that we are moving forward to cut emissions administratively. I signed the proposed Interstate Air Quality Rule (IAQR) last December and intend to finalize it later this year. This rule will dramatically reduce fine particle pollution. We estimate that, in 2015, the IAQR as proposed would avoid 13,000 premature deaths and 1.3 million lost work days annually. Based on the most recent data (2000-02), 99 counties with monitors in the Eastern United States violate the fine particle standard. EPA projects that the proposed Interstate Air Quality Rule and other Clean Air Act programs would bring 86 of these violating counties into attainment.

This year, EPA and 19 States and the District of Columbia will be complying with the NOx SIP Call, a 1998 rule pursuant to which power plants and large industrial sources will significantly reduce NOx emissions in the summer. Full implementation of the NOx SIP Call in 2007 (including Phase II, as proposed) is expected to achieve about a 1 million ton NOx emissions decrease annually. Compliance with the NOx SIP Call requirements will bring many areas into attainment with the 8-hour ozone standard, and the IAQR will further help the remaining nonattainment areas meet the standards.

Since 1995, EPA has been implementing the Acid Rain Program to reduce SO2 and NOx emissions from power plants nationwide. The centerpiece of the program is an innovative, market-based "cap-and-trade" approach to achieve a nearly 50% reduction in SO2 emissions from 1980 levels. The results of the program have been dramatic – and unprecedented. Compliance has been nearly 100 percent. Reductions in power plant SO2 emissions were larger and earlier than required, providing earlier human health and environmental benefits. Now, in the tenth year of the program, we know that the greatest SO2 emissions reductions were achieved in the highest SO2-emitting states; acid deposition dramatically decreased over large areas of the eastern United States in the areas where reductions were most critically needed; trading did not cause geographic shifting of emissions or increases in localized pollution (hot spots); and the human health and environmental benefits were delivered broadly. The compliance flexibility and allowance trading has reduced compliance costs by 75 percent from initial EPA estimates.

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[1] To achieve the required reductions in the most cost effective way, the proposal suggests that States regulate power plants under a cap and trade program similar to EPA's highly successful Acid Rain Program. Emissions would be permanently capped and could not increase.

Cars, trucks, school buses and other mobile sources

Emissions of NOx and other pollutants will decrease significantly as a result of a series of EPA regulations controlling emissions from new mobile sources and the fuels they use.

EPA has proposed, and will finalize in the near future, new emission standards for nonroad diesel engines used in construction, agricultural, and industrial operations. These engine standards will be combined with requirements limiting sulfur in the fuel for these engines, which will allow optimal performance of the engines' pollution control equipment. EPA's proposed nonroad standards are estimated to reduce 127,000 tons of PM and 826,000 tons of NOx in 2030, which is estimated to prevent annually in 2030 9,600 premature mortalities, 16,000 non-fatal heart attacks, over 8,300 hospital admissions, and 5.7 million days when adults must restrict their activity because of pollution related respiratory symptoms.

The benefits of the proposed nonroad rule will be added to those from two other mobile source rules. With this model year (2004), 25% of cars and light trucks must comply with the Tier II program, announced in 1999, which established tighter tailpipe standards for new passenger vehicles and limited the amount of sulfur in gasoline. The program will be fully phased in by 2009. The heavier light-trucks have a slightly delayed phase-in schedule, with 100% by 2009. This rule required for the first time that larger vehicles like SUVs, minivans and pick-up and trucks meet the same standards as cars. The associated gasoline sulfur standards will ensure the effectiveness of low emission-control technologies in vehicles. These new standards require passenger vehicles to be 77 to 95 percent cleaner than those on the road today.

Fine particle and ozone pollution will also decrease as a result of a rule announced in 2000 to clean up pollution from new diesel trucks and buses. When fully in effect, these rules will result in diesel trucks and buses being 95% cleaner than today's models for smog-causing emissions and 90 percent cleaner for particulate matter. The rule also requires very low sulfur diesel fuel to enable the use of advanced aftertreatment technologies. As a result of this program, there will be a dramatic transformation of diesel engines over the next decade. We estimate that this program will prevent 8,300 premature deaths and 1.5 million lost work days.

Although EPA's mobile source standards will reduce pollution from new mobile sources, they do not require reductions from existing vehicles and equipment. Given the long life span and high level of emissions from existing diesel engines, significant air quality benefits are possible by reducing these emissions. EPA is working with state and local governments on creative, voluntary programs to reduce emissions from existing engines. For example, the President has requested $65 million in FY2005 funding for the Clean School Bus USA program, which would assist school districts across the country in replacing or retrofitting school buses.

Clean School Bus USA addresses the growing concerns about children's exposure to diesel exhaust. The vast majority of the nation's schools buses are older technology diesel buses that produce as much as six times the pollution as a new

school bus. Since school buses can remain in service for 30 years, today's kindergartner will have graduated from college by the time the full benefits of the new engine standards are fully realized. Some of the cleaner technologies that will be used to meet future diesel emission standards are available now and are practical for use in today's school buses**.** Clean School Bus USA is designed to jump-start the process of upgrading the fleet so that today's generation of school children can reap the benefits of technologies that are available now to reduce emissions.

CONCLUSION

Bringing healthy air to our communities is a responsibility we all share. I am proud to report that EPA is doing its part to bring areas into attainment with the fine particle and ozone standards by issuing tight controls on power plants and new mobile sources. We are looking forward to continuing to work with state and local governments to ensure that all communities have healthy air.

Figure 1: Counties Exceeding the 8-Hour Ozone and PM2.5 NAAQS (2000-2002)

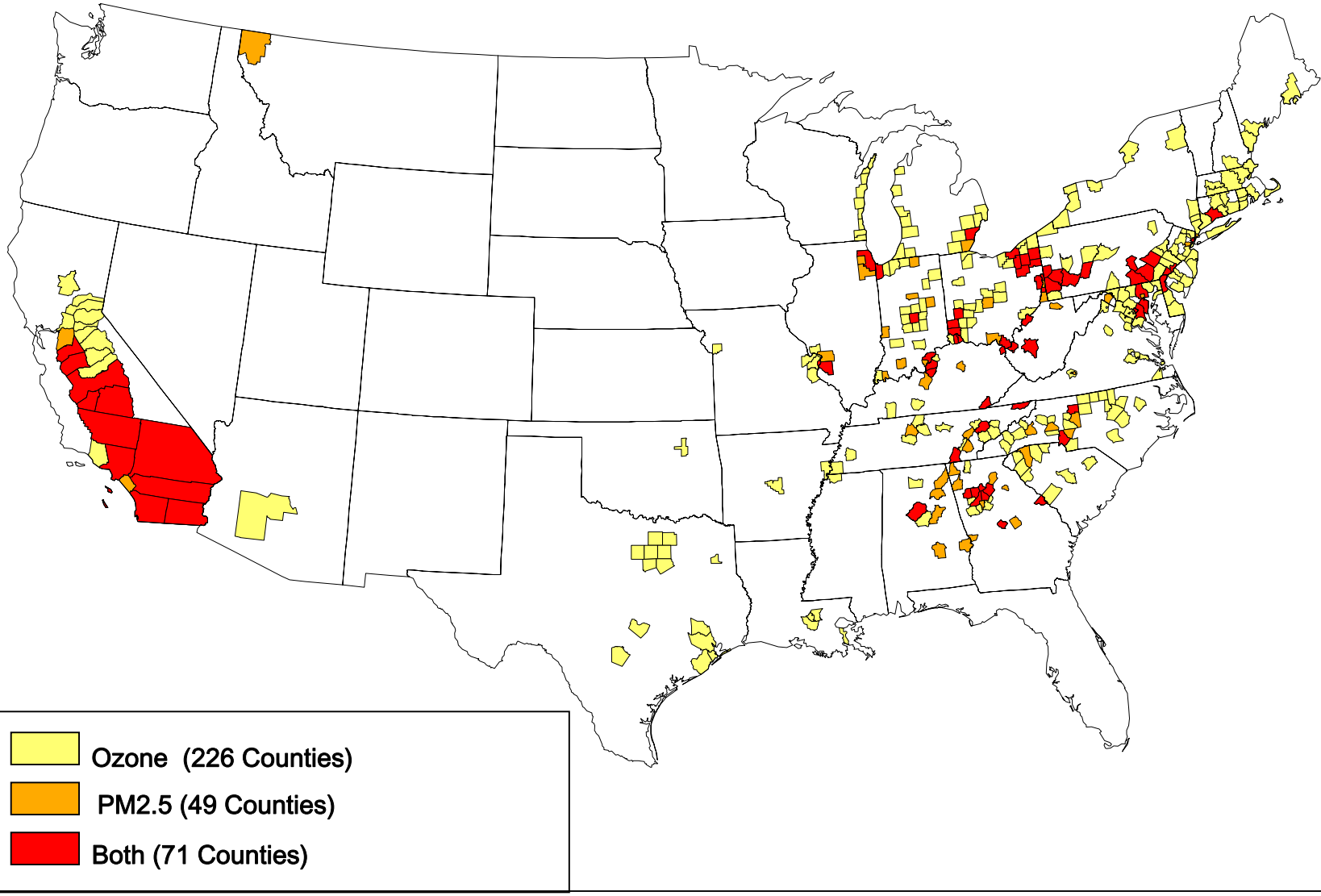
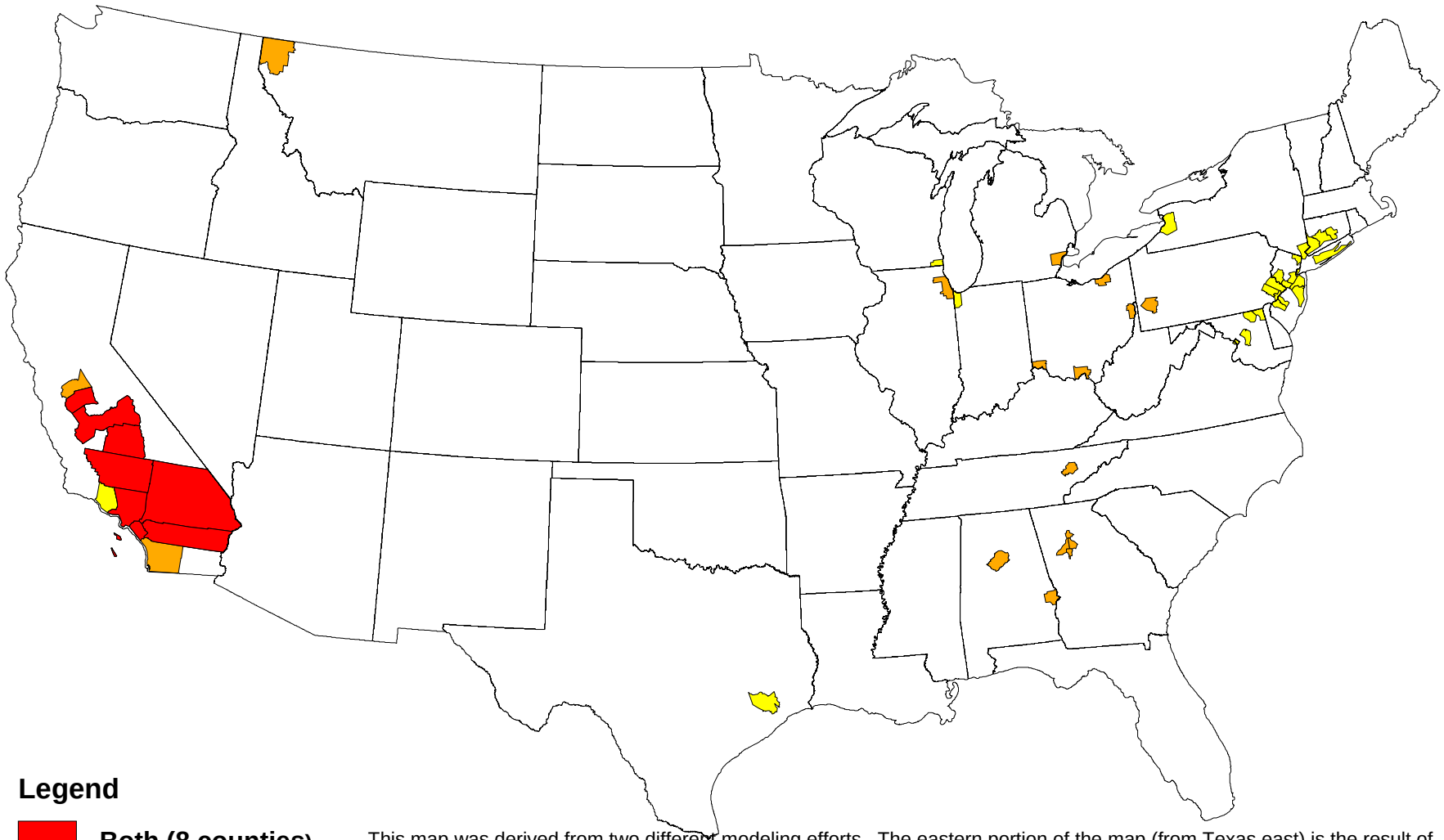


Figure 2: 2015: Counties Projected to Exceed the 8-Hour Ozone and PM2.5 NAAQS Without Additional Local Measures



Legend

- **Both (8 counties)**
- **PM2.5 (16 counties)**
- **Ozone (27 counties)**

This map was derived from two different modeling efforts. The eastern portion of the map (from Texas east) is the result of modeling that was done for 2015 assuming implementation of the proposed Interstate Air Quality Rule, the proposed nonroad diesel rule, and existing control programs. The projections depicted for California and Arizona were derived by interpolating modeling for 2010 and 2020 assuming implementation of the proposed nonroad rule and existing control programs.