

TESTIMONY OF BRYCE BIRD ON “STATE IMPACTS OF A REVISED PM2.5 NATIONAL AMBIENT AIR QUALITY STANDARD” BEFORE THE UNITED STATES HOUSE SUBCOMMITTEE ON ENVIRONMENT, MANUFACTURING, AND CRITICAL MATERIALS, SEPTEMBER 19, 2023

Good morning, Chair Johnson, Ranking Member Tonko, Chair Rodgers and Ranking Member Pallone and members of the Subcommittee. My name is Bryce Bird and I currently serve as the Director of the Utah Division for Air Quality within the Utah Department of Environmental Quality. I am honored to testify today and thank you for this opportunity to share a state's perspective related to "Examining EPA's Proposed PM2.5 Rule" under the Clean Air Act. In addition to my work with the Utah Division for Air Quality, I also serve as the Past President for the Association of Air Pollution Control Agencies. Our association is a national, nonpartisan, consensus-driven organization focused on improving air quality. The Association represents more than 45 state and local air agencies.

I have been invited to join you today to provide a state perspective on EPA's recently proposed revisions to the annual National Ambient Air Quality Standard (NAAQS) for fine particulate matter PM 2.5. For the purposes of this subcommittee hearing, I will also provide some context about the impacts of those changes to how we must regulate business and manufacturing within our potential non-attainment areas in the near future.

Particulate air pollution is a major health concern in Utah. The foundational correlation studies that linked particulate pollution levels with health outcomes began in Utah. It is clear that the burden of particulate air pollution should be reduced and it is also clear that past regulatory efforts in Utah have resulted in lower pollutant concentrations. Utah's industry has been a

partner in reducing their emissions through the installation of updated emissions controls as a direct result of Utah's implementation of the Utah Air Conservation Act and the delegated implementation of the federal Clean Air Act.

The mandatory requirements of the Clean Air Act and the implementing regulations of the United States Environmental Protection Agency (EPA) should be updated and improved under cooperative federalism in order to provide for attainable standards under the regulatory structure and timely attainment of health standards. A few examples that should be a focus for needed adjustments to these programs are highlighted below.

### **Utah's Experience with Attaining Particulate Matter Standards**

Let me begin by providing a brief history about the efforts the State of Utah has made to improve air quality related to fine particulate matter particularly along Utah's metropolitan Wasatch Front.

To provide some context for any listeners who have not yet visited the beautiful Salt Lake area, the Wasatch Front is located in a mountain valley bounded by 11,000 ft peaks at the eastern edge of the Great Basin. Although Utah is a large Western State, because the majority of the state consists of public lands controlled by the federal land agencies, settlement and economic development is limited to areas with available private land. The result is that Utah is one of the most urbanized states in the nation despite its large size and natural attractions. The majority of Utah's population lives along the Wasatch Front, with 90 percent of the population occupying 1.1% of the land area of the state.

Utah is situated favorably in the center of the western half of the continental United States. As such it is a Crossroads with major interstates and rail lines meeting in the state that connect the west coast and central portions of the United States, as well as being a major traffic route between Canada and Mexico.

The Salt Lake area is home to 5 petroleum refineries that serve the Great Basin and intermountain west with motor fuels. Utah is also a center for manufacturing particularly in aerospace and defense industries.

The Wasatch Front is home to mining and extraction industries that provide copper, magnesium, and other minerals that are critical to our domestic manufacturing economy.

Utah is the second driest state in the nation and recent droughts have resulted in large areas that are subject to becoming airborne during wind events, including the exposed lakebed of the Great Salt Lake, the namesake and directly adjacent to Salt Lake City.

Finally, as has been evident throughout the country this year, the drying west and forest fuel loading has resulted in lengthy wildfire impacts and increased impacts from prescribed fires that are necessary to reduce the fuel load. Past forest management decisions have increased the rate and scope of wildfires on the federally managed forest. Smoke from wildfires causes the highest monitored values of fine particulate matter PM2.5 that impact public health. Monitored levels of air pollution during wildfire smoke events are tens to hundreds of times higher than are typically attributable to local regulated sources of air pollution in Utah. The current treatment of natural and exceptional events increases the costs born by states to implement the Clean Air Act programs. Utah is collecting and evaluating wildfire information to be used in future exceptional events demonstrations for months-long smoke events over multiple years.

Air pollution has been a focus of regulatory actions by Utah's government since the early 1900s. Utah has unique challenges with topography and meteorology that enhance and trap particulate pollution in the mountain valleys that contain the population centers of the state. Despite these challenges, the state has successfully attained each of the past particulate standards.

The Wasatch Front is subject to strong persistent winter temperature inversions where warm air above the typically snow-covered valley surface traps a cold pool of air and air pollutants. Under these conditions, complex chemistry pathways result in the formation of secondary pollutants that represent the majority of monitored particulate matter during winter inversion periods. Throughout the year, the formation of secondary particulate and ozone pollution is enhanced by natural and transported pollutants (from other states and internationally) that represent a background level of air pollution that is greater than the contribution from the portion of the emissions inventory that can be regulated by the state.

**The mission of the Department of Environmental Quality (DEQ) is Safeguarding and improving Utah's air, land and water through balanced regulation.**

As co-regulators with EPA, states play a key role in implementing the NAAQS to reduce harmful pollutants, improve air quality, and ultimately protect public health in their state. We appreciate EPA's efforts and support reliance on current scientific information to conform with the Clean Air Act. The state/federal partnership has resulted in meaningful improvements to air quality in Utah and has played a role in improving the quality of life and fast-paced growth in Utah's metropolitan centers.

Utah has had a long history of addressing air pollution as impacts to public health have been better understood and the standards have become more protective over time. Utah developed effective State Implementation Plans (SIPs) for total suspended particulate (TSP), particulate matter PM10 and both a “moderate” and “serious” designations under the 24-hour standard for fine particulate pollution PM2.5. In each case the plans were successful and all areas in Utah are currently meeting all particulate standards.

The predominant local source of emissions that are responsible for Utah's particulate concentrations within the non-attainment areas are transportation sources from both light and heavy-duty vehicles operating on roadways and nonroad mobile sources (construction equipment and trains). Utah is preempted from requiring controls on mobile sources by the Clean Air Act. The second largest category are the area sources that include consumer and commercial activities of homes, institutions and businesses. There are few reasonably available controls that are effective at reducing area source emissions beyond what Utah has already required. The major (smokestack) industries represent approximately 13% of the current emissions inventory within our non-attainment areas.

The Wasatch Front area of Utah has also been designated in non-attainment for the 2015 revised standard for ground level ozone. Over the past two years the state has worked with stakeholders and Industry to craft a “moderate” SIP that addresses emissions of oxides of nitrogen (NOx) and volatile organic compounds (VOC).

Each time a standard is revised a new baseline date is established which the state must use to identify additional available controls in order to improve air quality conditions and meet that standard. This pattern provides particular challenges when past regulatory actions have already been implemented but were done so before the baseline date for emissions reductions and

therefore are no longer creditable toward the required emissions reductions of the new standard. This leads to increasing costs of compliance on sources that have already reduced emissions and have become much less important as a percentage of the overall inventory.

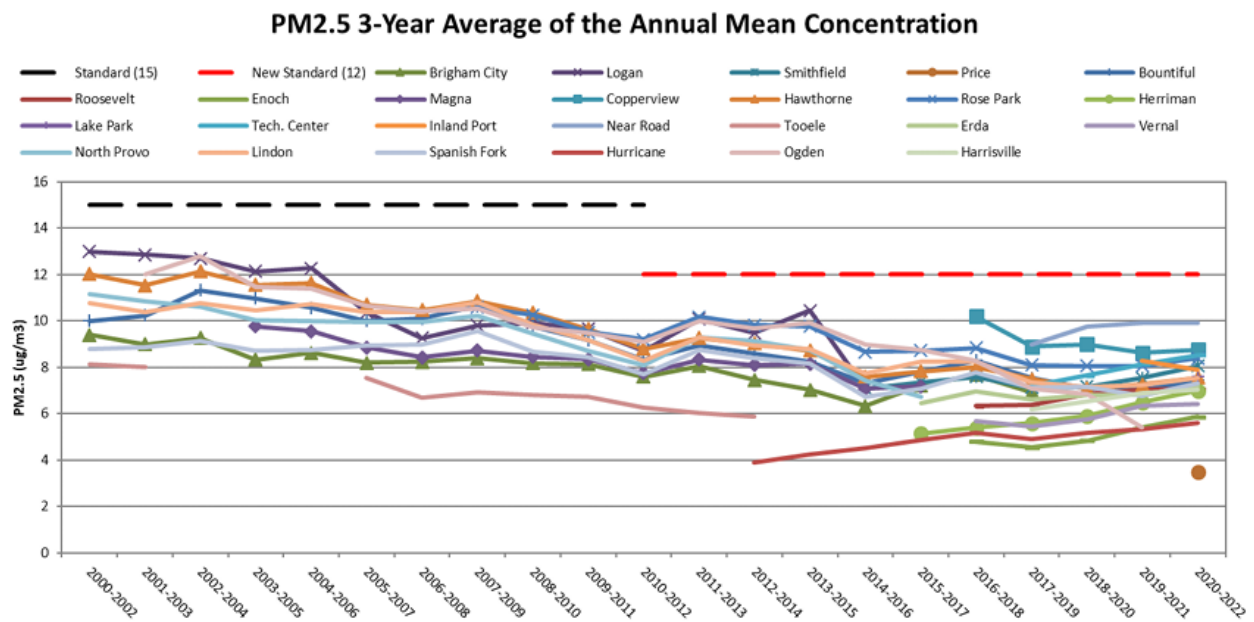
Because of this long history of addressing particulate air pollution, the strategies in Utah have resulted in levels of control that are beyond many other areas of the country. For example, Utah is only one of two areas that require ultra-low NOx water heaters for residential and commercial use, and has required the most stringent controls on the VOC content of consumer products, all the way down to hairspray and nail polish. Recent SIP rulemaking has required the installation of retrofit controls on existing industrial sources that cost the companies nearly \$40,000 per ton of emissions reduced. Despite these past efforts, EPA's proposed new standards for annual fine particulate matter PM2.5 will require looking to again develop new state plans to address this new standard.

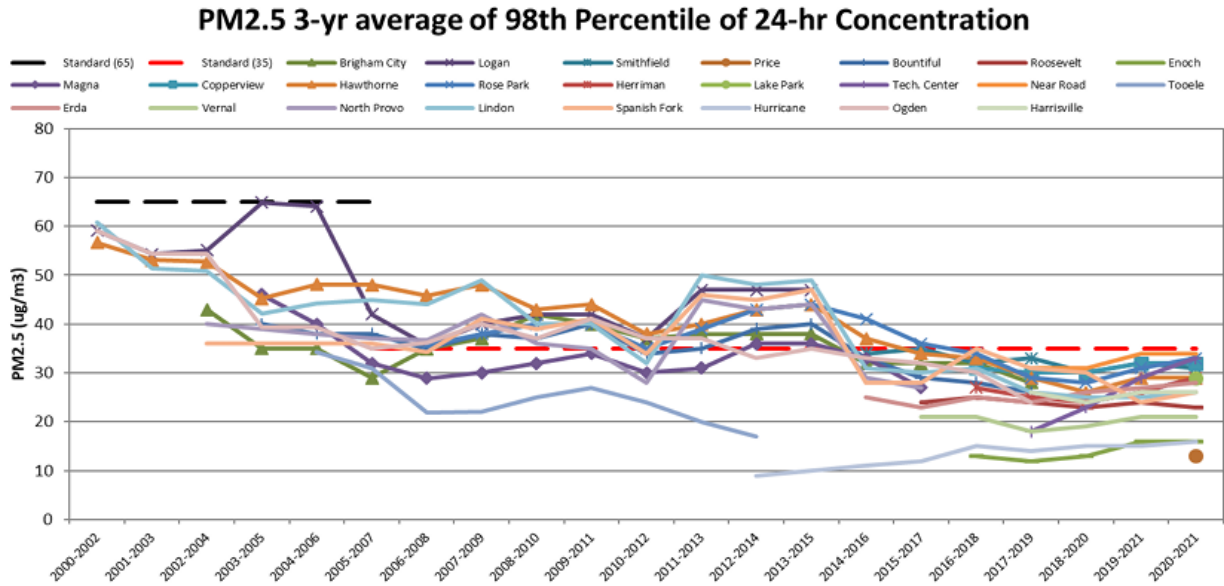
Unlike Utah's original efforts that resulted in major technology upgrades and large reductions in emissions, because the majority of the sources of air pollution are beyond our regulatory control, we are at risk of overregulating those sources for which we do have regulatory authority to require additional controls. Utah requires permits for new construction of sources of air pollution down to five tons of emissions per year and requires the installation of best available control technology (BACT) for all new sources of pollution being constructed in the state. The low hanging fruit has been picked and new controls will be more costly in dollars per ton of emissions reduced with ultimately fewer reductions at that cost.

Once under the scope of non-attainment, the permitting of major sources of emissions becomes infeasible due to the requirements for offsetting new emissions through the retirement of credits under the emissions trading programs.

Transportation improvements are at risk of failing to conform to the new air quality requirements that will impact the ability of the state to respond to the demand for roads resulting from growth.

In short, the mandatory requirements of the Clean Air Act for an area that has a long history emission reduction result in more costly and less effective controls that target a very small portion of the remaining inventory that states can directly regulate.





## State concerns with EPA’s process in proposing a new fine particulate standard

### Standards Review Process

Clean Air Act Section 109(d)(2)(A) requires the Administrator to appoint this committee, which is to be composed of “seven members including at least one member of the National Academy of Sciences, one physician, and one person representing State air pollution control agencies.”

The latest PM review was conducted by the 7-person Chartered Clean Air Science Advisory Committee (CASAC) plus 15 additional panel members (22 total). Twenty were university research professors. Only one person represented State air pollution control agencies and nobody represented industry. State and Local air regulatory agencies have hands-on experience with the implementation of the NAAQS and can provide a unique perspective that research professors can’t. With local experience and an eye on practical implementation, those with the ability to affect the necessary reductions as co-regulators are uniquely qualified to review the relevant health data in that context. The Chartered CASAC and panels need a better



balance of university research professors, state/local air regulators, and industry representatives.

For example, those with regulatory experience can focus the setting of health standards on practical implementation regarding transport, natural background, co-pollutants represented by the inventory, and the availability of controls. Monitoring data that include exceptional events such as wildfire in the correlated health outcomes should be better addressed when setting the standard because the implementation provides for exclusion when addressing the standard. This places an even heavier burden on the sources that the state can regulate such as manufacturing businesses.

### **Clean Air Act Issues and Inconsistency in Interpretation**

The Clean Air Act was promulgated with the intention of improving and maintaining air quality and public health. While there is no doubt that the act has been successful, there is room for improvement in regard to loosening some state implementation plan requirements while tightening others.

With a new PM<sub>2.5</sub> NAAQS, states will get locked into a years-long SIP process. In our experience, by the time the EPA reviews SIP revisions submitted by the state, EPA has changed their interpretation of what SIP approvability is and the state subsequently spends extra resources to make changes that don't actually benefit air quality. This takes valuable resources away from focusing on actually improving public health. EPA's Clean Air Act interpretation is at the whim of changing administrations and the inconsistency creates excessive burden to states with no tangible positive outcome for citizens. EPA needs to thoughtfully codify some SIP details and leave less up to interpretation to give states planning consistency.

Conversely, some of the Clean Air Act SIP requirements are too rigid and fall short of actually reducing pollutant concentrations in the ambient air. For example, EPA requires contingency measures for an airshed that is not even able to fulfill the emission reductions or actually reach attainment. There are also pollutant reduction requirements for some NAAQS that state's must implement even if a reduction in that pollutant doesn't help the airshed attain the standard. Naturally, a law that underwent its last major amendments over 30 years ago, needs to be updated periodically to fit the current regulatory landscape.

EPA, or a revised Clean Air Act should provide more flexibility and autonomy for states to create plans that are effective and cost effective to move an area back to attainment rather than the current system of checklists and overly prescriptive regulations and guidance. States are best suited to effectively improve air quality, and should be encouraged to do so.

### **Source Regulatory Jurisdiction and Timely Implementation Guidance**

Secondary particulate matter formation is a complicated chemical process that includes a variety of different source emissions. While the SIP process allows states to focus on solutions for specific airsheds, there are still emission sources that states do not have regulatory authority over. EPA should further address direct particulate matter and precursors from sources that the state has limited regulatory authority over, including all on-road and non-road sources.

If areas are found to be out of compliance with the new NAAQS, a state has an obligation to submit a SIP that demonstrates attainment of the NAAQS. EPA guidance is an important planning tool for states to follow as SIPs are compiled. Expedited release of PM NAAQS implementation guidance will benefit states in their SIP planning process. EPA must release the relevant guidance at the same time designations are proposed so that the state and local air agencies can have the time necessary to prepare an approvable SIP.

### **New monitoring requirements**

There are unfunded new requirements for the siting of air monitors. In EPA's latest proposal to revise the annual fine particulate standards, the states have concerns with the process, outcome and implementation processes that EPA has proposed. In this action, EPA proposes to "modify the PM2.5 monitoring network design criteria to include an environmental justice factor that accounts for proximity of populations at increased risk of adverse health effects from PM2.5 exposures to sources of concern" (88 FR 5673). EPA further states that "communities with relatively higher proportions of sub-populations at greater risk from PM2.5 exposure within the jurisdiction of a state or local monitoring agency should be considered 'at-risk communities'" (88 FR 5673). State and Local monitoring agencies will need guidance from EPA on how to identify and prioritize one at-risk community over another at-risk community, and when establishing new monitoring sites near at-risk communities should be prioritized over the continuity at historical monitoring sites.

### **EPA should not make designations until all EPA and state efforts to evaluate air monitoring has been accomplished**

EPA has incentivized states to move to more real-time particulate air monitoring in order to provide timely information to the public about particulate concentrations. This move required the use of Federal Equivalent Method monitors (FEM) rather than the Federal Reference Method (FRM) filter-based monitoring (that was the basis of the health studies that were used to evaluate if the current standard is protective of public health with an adequate margin of safety). In practice, the FEM monitors have over-reported particulate concentrations without correction factors added to the software by the equipment manufacturer. EPA is required to designate areas as expeditiously as practicable, but in no case later than 2 years from the date of promulgation of a new standard. EPA should take the time necessary, up to the full 2 years, for

designations as allowed under the Clean Air Act (CAA) due to the time it will take states to analyze and adjust FEM data to be more comparable to FRM data, the time it will take states to assemble multiple exceptional event demonstrations, and the time it will take EPA to review complex state submittals. If the designation timeline is shortened, it will result in states losing the opportunity to submit comprehensive designation recommendations and will result in EPA not having adequate time to fully evaluate the state recommendations and associated exceptional events demonstrations.

**More work is needed at the federal level to reduce emissions under their sole regulatory control from increased wildfire smoke with burdensome exceptional events process**

EPA has stated in a fact sheet on the proposed PM<sub>2.5</sub> NAAQS revisions that “Wildland fires—including both wildfires and prescribed fires—account for 44% of the nation’s primary emissions of fine particulate matter.” This is an ideal place for EPA to act as a coregulator to work with other federal agencies and congress to reduce this impact. This can extend to international partners in the effort to reduce exposure to fire smoke.

EPA needs to streamline the exceptional events approval process and allow demonstrations to be submitted for all exceptional events that have regulatory significance regardless of whether the measured PM<sub>2.5</sub> concentrations are above or below the level of a daily or annual standard. In addition, the removal of 24-hour PM<sub>2.5</sub> data identified as exceptional events from EPA’s annual design value calculations (due to regulatory significance) must also be removed from EPA’s daily design value calculations (even if the removal of the data does not have regulatory significance) so that the annual and daily design values are based on a consistent dataset.

**Near-Road Monitoring Data Should not be used for NAAQS Compliance**

EPA required the placement of near-road monitors to measure NO<sub>2</sub> concentrations by high traffic roadways in urban centers throughout the U.S., as these locations were believed to characterize worst-case human exposures to traffic-related air pollutants. Consequently, these monitors are categorized as source monitors. Near-road monitoring stations are also required to include PM<sub>2.5</sub> monitoring.

40 CFR Part 58 specifies the requirements for ambient air quality surveillance monitoring by State or Local Air Monitoring Stations (SLAMS). SLAMS network design criteria are specified in 40 CFR Part 58 Appendix D and are specifically designed to determine compliance with the NAAQS. The siting criteria for the SLAMS network precludes the use of special monitoring or source monitoring because these types of monitors do not reflect ambient conditions.

EPA provided supporting evidence on page 5571 of the proposed reconsideration (88FR 5558) that near-road source monitors do not reflect ambient conditions:

“The recent deployment of PM<sub>2.5</sub> monitors near major roads in large urban areas provides information on PM<sub>2.5</sub> concentrations near an important emissions source. For 2016–2018, Gantt et al. (2021) reported that 52% and 24% of the time near-road sites reported the highest annual and 24-hour PM<sub>2.5</sub> design value in the CBSA, respectively. Of the CBSAs with the highest annual design values at near-road sites reported by Gantt et al. (2021), those design values were, on average, 0.8 µg/m<sup>3</sup> higher than at the highest measuring non-near-road sites (range is 0.1 to 2.1 mg/m<sup>3</sup> higher at near-road sites). Although most near-road monitoring sites do not have sufficient data to evaluate long-term trends in near-road PM<sub>2.5</sub> concentrations, analyses of the data at one near-road like site in Elizabeth, NJ,<sup>35</sup> show that the annual average near-road increment has generally decreased between 1999 and 2017 from about 2.0 µg/m<sup>3</sup> to about 1.3 µg/m<sup>3</sup>.”

In the event that the PM2.5 standard is lowered, near road monitors could create false NAAQS exceedances and place a groundless burden on states to come into compliance while implementing EPA's mandatory near-road program.

EPA should codify in the PM2.5 rulemaking that near-road monitors cannot be used for NAAQS compliance.

### **Data Substitution of Co-located Monitors for Design Value Calculations**

EPA should allow data substitution of co-located PM10 monitors for design value calculations. Where resources allow, we attempt to co-locate Federal Reference Method and/or Federal Equivalent Method PM10 monitors. Allowing for data substitution will result in a more complete data set while not penalizing the design value when there are varying sampling frequencies, for example: 1-in-3 days or 1-in-6 days.

### **Designation Process**

- State's designation recommendations due one year after effective date of new NAAQS.  
Based on Five Factors
  1. Air Quality Data (likely 2021-2023)
  2. Emissions and Emissions-Related Data
  3. Meteorology
  4. Geography/Topography
  5. Jurisdictional Boundaries
- EPA's Final Designations due two years after the effective date of the new NAAQS.  
Based on newer data (2022-2024). EPA will issue a "120-day letter" to state governors with proposed designations for that state. This will initiate a 120-day period for states to provide additional information to EPA to inform their final designations. EPA will also

open a 30-day public comment period for interested parties to provide input on these designations.

All areas designated nonattainment must submit an Attainment SIP to EPA

- Base emissions inventory (EI), Future EI, Control Strategy, Attainment Modeling, Reasonable Future Progress (RFP), Motor Vehicle Emissions Budgets (MVEBs), Quantitative Milestones, Contingency Measures, and Nonattainment NSR Plan
- Due 18 months after effective date of designations
- “Moderate” attainment date: 6 years after designations

All states must submit an Infrastructure SIP

- Documents the state’s ability to implement, maintain, and enforce the new NAAQS including interstate transport, aka “Good Neighbor SIP”
- Due 3 years after the effective date of new NAAQS

Conformity Requirements

- Transportation Conformity

o Demonstrate that federally funded transportation projects (DOT, FHWA) will not cause new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS

- General Conformity

o Demonstrate that actions taken by federal agencies do not interfere with a state’s plans to attain and maintain the NAAQS.

o Low-income housing (HUD) and airports (FAA)

- Transportation and general conformity must continue for 20 years after the area is redesignated back to attainment!!

Permitting

- Permitting in Attainment Areas

o For Prevention of Significant Deterioration (PSD) projects, new NAAQS applies upon the effective date of the new standard. No grandfathering of PSD projects that were submitted before the effective date.

o Lack of headroom (difference between the standard and the background levels) – makes it very difficult to pass cumulative PSD modeling

- Permitting in Nonattainment Areas

o Includes PM 2.5, SO 2, VOC, NH 3, NOx, VOC, and NH 3 can be removed as precursor pollutants if the state submits an insignificance demonstration and EPA approves it.

o Reasonably Available Control Measures/Technology (RACM/RACT) (existing sources)

o Lowest Achievable Emissions Rate (LAER) (new sources)

o Emission offsets for major modifications at existing major sources and all new major sources of emissions

- Can have a significant impact on economic development. Companies avoid nonattainment areas and attainment areas with little headroom for PSD modeling.

In closing, the Utah Department of Environmental Quality is committed to protecting the health of our citizens through attaining air quality standards. We work closely with our communities and impacted businesses to reduce emissions while providing the goods and services necessary for a vibrant and growing economy. Again, thank you for the opportunity to testify today, and I look forward to any questions or comments you may have regarding my testimony.



