BEFORE THE ADMINISTRATOR OF THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PETITION FOR RULEMAKING TO REDESIGNATE ADA AND CANYON COUNTIES, IDAHO AS NONATTAINMENT FOR THE 2006 24-HOUR FINE PARTIULATE MATTER ($PM_{2.5}$) NATIONAL AMBIENT AIR QUALITY STANDARDS

Submitted by the Idaho Conservation League
February 6, 2015

I. Introduction & Rulemaking Request

The Idaho Conservation League (ICL) hereby petitions the Administrator of the United States Environmental Protection Agency (Administrator or EPA) pursuant to the Administrative Procedure Act (APA), 5 U.S.C. § 551 *et seq.*, the Clean Air Act, 42 U.S.C. § 7401, *et seq.*, and EPA's regulations implementing the Clean Air Act to redesignate Ada and Canyon Counties, Idaho, and all appropriate surrounding areas, as nonattainment for fine particulate matter ($PM_{2.5}$) pursuant to Section 107(d)(3) of the Clean Air Act, 42 U.S.C. § 7407(d)(3).

High levels of fine particulate matter pollution are a persistent problem in the Treasure Valley, particularly in Ada and Canyon Counties, which are home to more than 600,000 people and include Idaho's three most populous cities. Air quality monitoring data submitted by the State of Idaho Department of Environmental Quality (DEQ) and confirmed by EPA show that fine particulate matter pollution in Ada and Canyon Counties has skyrocketed in recent years and regularly fails to meet EPA standards designed to protect human health and the environment. From 2011-2013, short-term fine particulate concentrations in Ada County were the fourth highest in the nation. High levels of fine particulate matter pollution like those experienced in Ada and Canyon Counties are associated with visible haze, lung and heart disease, and early death. Due to projected population growth in the Treasure Valley, this problem is likely to get worse.

As set forth below, DEQ monitoring data show that Ada County is failing to meet the 2006 primary and secondary 24-hour $PM_{2.5}$ National Ambient Air Quality Standards. The standard is 35 micrograms per cubic meter ($\mu g/m^3$) of $PM_{2.5}$. EPA considers an area to be in attainment if the area's "design value" is equal to or below the 35 $\mu g/m^3$ standard. The design value is the three-year average of the 98^{th} percentile concentration of $PM_{2.5}$ for each year. Over the most recent three-year period (2011-2013), Ada County's design value was 53 $\mu g/m^3$—over 51 percent higher than the standard. Data and other information also show that Canyon County is near nonattainment now, is likely to go into nonattainment in the future, and is contributing to nonattainment in Ada County. Accordingly, EPA must use its Clean Air Act authorities to redesignate Ada and Canyon Counties as nonattainment, as well as any surrounding areas contributing to nonattainment. Until EPA takes such action, Treasure Valley residents will continue to breath and view unacceptably high levels of fine particulate matter.

II. The Idaho Conservation League

Petitioner ICL is a non-profit conservation organization based in Boise, Idaho, whose mission is to protect Idaho's clean water, clean air, healthy families, and unique way of life. ICL has approximately 20,000 supporters. Many ICL board members, staff, and supporters live, work, recreate, and breath the air in Ada and Canyon Counties and are adversely impacted by high levels of $PM_{2.5}$ pollution and will continue to be harmed until EPA takes action as requested in this petition.

III. Background on Particulate Pollution

A. Particulate Matter Pollution

Particulate matter is the generic term for a broad class of chemically and physically diverse substances that exist as discrete particles (liquid droplets or solids) over a wide range of sizes in the air. Particles originate from a variety of anthropogenic stationary and mobile sources as well as from natural sources. Particles may be emitted directly or formed in the atmosphere by transformations of gaseous emissions.

Based on differences in sources, properties, and atmospheric behavior, EPA treats fine particulate matter ($PM_{2.5}$) and coarse particulate matter (PM_{10}) as separate subclasses of particulate matter pollution. Fine particulate matter refers to the smallest particles with a nominal aerodynamic diameter less than or equal to 2.5 μm. Coarse particulate matter is larger but still small enough to be inhaled and generally includes particles with a nominal aerodynamic diameter greater than 2.5 μm and less than or equal to 10 μm. Fine particles can remain suspended in the atmosphere for days to weeks and can be transported thousands of kilometers, whereas coarse particles generally deposit rapidly on the ground or other surfaces and are not readily transported across urban or broader areas.

Fine particle pollution is produced primarily by combustion processes and by atmospheric reactions of various gaseous pollutants. Sources of fine particle pollution include motor vehicles, power generation, combustion sources at industrial facilities, and residential fuel burning.[1] Coarse particle pollution is primarily emitted directly as particles as a result of mechanical processes that crush or grind larger particles or the resuspension of dusts. Sources of coarse particle pollution include traffic-related emissions, such as tire and break lining materials; emissions from industrial operations, construction, and demolition activities; and agricultural and mining operations.

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[1] In Idaho, sources of fine particulates include dust, soot, smoke, and combustion. Secondary fine particulates form from chemical reactions between nitrogen oxides, sulfur dioxide, ammonia, and/or volatile organic compounds. Nitrogen oxide sources include vehicles and construction and farm equipment. Ammonia sources include waste from dairies and other animal operations. Sulfur dioxide sources include large industrial facilities, such as power plants and industrial boilers. Volatile organic compound sources include wildfires, prescribed burning, and woodsmoke. *See* Idaho Department of Environmental Quality, *Air Quality in Idaho*, "Fine Particulate Matter ($PM_{2.5}$): How particulate pollution affects our view, our health, and air quality" (https://www.deq.idaho.gov/media/63887-fine_particulate_matter_pm2.5.pdf).

B. Adverse Impacts of Fine Particulate Matter Pollution

As EPA has recognized, health studies demonstrate significant associations between exposure to $PM_{2.5}$ pollution and premature death from heart and lung disease. *See*, *e.g.*, 74 Fed. Reg. 58,688, 58,688 (Nov. 13, 2009). Due to the small particle size, $PM_{2.5}$ can penetrate deeply into the lungs when inhaled and can accumulate, react, or be absorbed into the body. At high levels, $PM_{2.5}$ is lethal. Even at very small concentrations, however, $PM_{2.5}$ can cause a myriad of adverse health impacts including:

- Increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing.
- Decreased lung function.
- Aggravation of heart and lung diseases.
- Cardiovascular symptoms.
- Cardiac arrhythmias.
- Heart attacks.
- Respiratory symptoms.
- Asthma attacks.
- Premature death.
- Bronchitis.

Id. The effects may result in increased hospital admissions, emergency room visits, absences from school or work, and restricted activity days. *Id.* According to EPA, people with lung disease, children, older adults, and even active adults are likely to be more sensitive to the impacts of fine particulate matter. *Id.*

In addition to human health impacts, fine particulate matter has negative environmental impacts. For example, EPA determined that $PM_{2.5}$ impairs visibility in various locations across the country, including urban areas and Class I Federal areas such as national parks and wilderness areas. 71 Fed. Reg. 61,144, 61,203 (Oct. 17, 2006). In addition, particulate matter contributes to adverse effects on vegetation, ecosystems, and climate, and causes damage to and deterioration of property. *Id.* at 61,209. Specifically, excess particulate nitrate and sulfate can lead to acidifying deposition to foliage, accelerated weathering of leaf and cuticular surfaces, increased permeability of leaf surfaces to toxic materials, water, and disease agents, increased leaching of nutrients and foliage, and altered reproductive processes. *Id.* Ultimately these impacts weaken trees and render them susceptible to other stresses. *Id.* PM deposited on terrestrial and aquatic ecosystems contributes to adverse impacts on species shifts, loss of diversity, and alteration of native fire cycles. *Id.* Ambient particles impact climate by scattering and absorbing radiation, changing the number and size distribution of cloud droplets, and altering the amount of ultraviolet solar radiation penetrating the atmosphere to ground level. *Id.*

IV. Regulation of Fine Particulate Matter Pollution Under the Clean Air Act

A. National Ambient Air Quality Standards

The Clean Air Act directs EPA to identify criteria air pollutants that may reasonably be anticipated to endanger public health and welfare. *See* 42 U.S.C. § 7408(a)(1). Once a criteria air pollutant is identified, EPA must promulgate NAAQS for the pollutant. *See* 42 U.S.C. § 7409(a). EPA is obligated to establish "primary" NAAQS for each criteria pollutant at a level "requisite to protect the public health" with "an adequate margin of safety." 42 U.S.C. § 7409(b)(1). EPA is also obligated to establish "secondary" NAAQS for each criteria pollutant at a level "requisite to protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air." 42 U.S.C. § 7409(b)(2).

In 1987, EPA identified particulate matter as a criteria air pollutant and established NAAQS for coarse particulate matter (PM_{10}). In 1997, EPA revised the NAAQS for particulate matter, adding two new standards for fine particulate matter ($PM_{2.5}$)–an annual standard and a 24-hour standard–based on the link to serious health problems from both long-term and short-term exposure to fine particulate matter pollution. 62 Fed. Reg. 38,652, 38,652 (Jul. 18, 1997).

For the annual fine particulate matter standard, EPA originally set both the primary (health-based) and secondary (public welfare-based) standards at 15 $\mu g/m^3$ based on the 3-year average of annual arithmetic mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors. *Id.* In 2012, EPA revised this annual standard to 12 $\mu g/m^3$ to provide increased protection against health effects associated with long term exposure to $PM_{2.5}$, including premature mortality, increased hospital admissions and emergency department visits, and development of chronic respiratory disease. *See* 78 Fed. Reg. 3,086 (Jan. 15, 2013).

For the 24-hour fine particulate matter standard, EPA originally set both the primary and secondary $PM_{2.5}$ standards at 65 $\mu g/m^3$ based on the three-year average of the 98th percentile of 24-hour $PM_{2.5}$ concentrations at each population-oriented monitor within an area. 62 Fed. Reg. at 38,652. In 2006, EPA lowered this daily standard to 35 $\mu g/m^3$ in response to significant evidence and numerous health studies demonstrating that serious health effects are associated with short-term exposure to $PM_{2.5}$. 71 Fed. Reg. at 61,144. The 24-hour $PM_{2.5}$ standard is met whenever the three-year average of the annual 98th percentile of values at a monitoring site is less than or equal to 35 $\mu g/m^3$. *See* 40 C.F.R. § 50.13.

B. Nonattainment Areas

After a NAAQS is established, the Clean Air Act directs EPA to identify those areas that are violating the NAAQS, and those nearby areas that are contributing to violations, and designate them as "nonattainment" areas. *See* 42 U.S.C. § 7407(d). Areas designated nonattainment must undertake specific planning and pollution control

activities to attain the NAAQS "as expeditiously as practicable, but no later than 5 years from" the date of nonattainment designation. 42 U.S.C. § 7502(a)(2). After nonattainment designations, states must submit revisions to their Clean Air Act State Implementation Plans (SIPs) by date certain. 42 U.S.C. § 7502(b). State plans must: provide for attainment of NAAQS; provide for implementation of all reasonably available control measures as expeditiously as possible, including application of reasonably available control technology (RACT) to existing sources; include a comprehensive, accurate, current inventory of actual emissions for all sources of $PM_{2.5}$ pollution. 42 U.S.C. § 7502(c). For major new or modified sources of air pollution, the plan must expressly identify and quantify the emissions, if any, of $PM_{2.5}$ that will be allowed and require implementation of the lowest achievable emissions rate ("LAER") through permitting requirements. 42 U.S.C. § 7502(c)(4), (5). Finally, the plan must include enforceable emission limitations, control measures, means or techniques, and schedules and timetables as necessary to provide for NAAQS attainment, as well as contingency measures to be undertaken in case the area fails to make reasonable further progress or attain the NAAQS by date certain. 42 U.S.C. § 7502(c)(6). Where a state fails to make required SIP submissions or to adequately implement a SIP to attain the NAAQS in a nonattainment area, EPA may impose sanctions. 42 U.S.C. § 7509(a). Specifically, EPA may restrict highway funding or impose a more stringent emissions offset ratio for new or modified sources. 42 U.S.C. § 7509(b).

In 2009, EPA made initial nonattainment area determinations for the 24-hour $PM_{2.5}$ NAAQS. 74 Fed. Reg. 58,688 (Nov. 13, 2009). While the Clean Air Act itself does not define what constitutes a violation of the NAAQS, EPA's 2007 guidance concerning how to determine boundaries for nonattainment areas for the 2006 24-hour $PM_{2.5}$ NAAQS states that the three most recent calendar years of air quality monitoring data for $PM_{2.5}$ be used to identify a violation of the 24-hour $PM_{2.5}$ NAAQS. *See* Memorandum from Robert J. Meyers, Acting Assistant Administrator, to EPA Regional Administrators Regions I-X, "Area Designations for the Revised 24-Hour Fine Particle National Ambient Air Quality Standard" (June 8, 2007). This 3-year average is often referred to as the "design value." EPA relied on the design value to make area designations under the 2006 24-hour $PM_{2.5}$ NAAQS in 2009. *See* 74 Fed. Reg. at 58,693.

The initial designation for an area remains in effect until the area is redesignated. 42 U.S.C. § 7407(d)(1)(B)(iv). EPA has authority to redesignate areas when air quality data, planning and control considerations, or any other air quality related considerations indicate that an area designation should be revised. 42 U.S.C. § 7407(d)(3)(A). EPA redesignates areas to nonattainment either on its own initiative or in response to a petition. To redesignate an area, EPA must first notify the Governor of the state "that available information indicates that the designation of any area or portion of any area . . . should be revised." 42 U.S.C. § 7407(d)(3)(A). Such notification triggers a 120-day deadline by which the Governor must submit a redesignation to EPA. 42 U.S.C. § 7407(d)(3)(B). If the Governor submits a redesignation, EPA shall promulgate the redesignation within 120 days, making such modifications EPA deems necessary. 42 U.S.C. § 7407(d)(3)(C). If the Governor fails to submit a redesignation, EPA must promulgate an appropriate redesignation. *Id.*

C. State Implementation Plans

Each state is required to adopt and submit to EPA a plan which provides for implementation, maintenance, and enforcement of the NAAQS. 42 U.S.C. § 7410(a)(1). Each SIP shall, among other requirements, include enforceable emission limitations and other control measures as well as schedules and compliance timetable as may be necessary; provide for monitoring, compiling, and analyzing air quality data; and develop a permit program for new and modified stationary sources of air pollution to assure NAAQS are achieved. *See* 42 U.S.C. § 7410(a)(2). The SIP must also provide for revision of the plan from time to time as may be necessary to account for revisions of the NAAQS or the availability of improved or more expeditious methods of attaining the NAAQS; and when EPA finds based on available information that the SIP is substantially inadequate to attain the NAAQS or to otherwise comply with any additional requirements for such plans. 42 U.S.C. § 7410(a)(2)(H).

When a state adopts and submits a SIP or SIP revisions, EPA is required to follow a proscribed timeframe to determine whether the SIP is complete and meets the requirements of the Clean Air Act, in which case EPA is to approve the SIP. *See* 42 U.S.C. § 7410(k). EPA "shall require the State to revise" its SIP to correct inadequacies whenever EPA finds the SIP to be "substantially inadequate" to attain or maintain the NAAQS, to adequately mitigate interstate pollutant transport, or to otherwise comply with Clean Air Act requirements. 42 U.S.C. § 7410(k)(5).

The State of Idaho has been delegated authority by EPA to issue air quality permits and to enforce air quality regulations under the Clean Air Act. Idaho submitted its original SIP in 1980. The SIP is a living document which has undergone numerous revisions. Idaho's SIP includes the Rules for Control of Air Pollution in Idaho, Idaho Administrative Procedure Act 58.01.01 *et seq.*, as well as site-specific nonattainment area plans for Northern Ada County, Pinehurst, Sandpoint, Portneuf Valley, and Cache Valley.

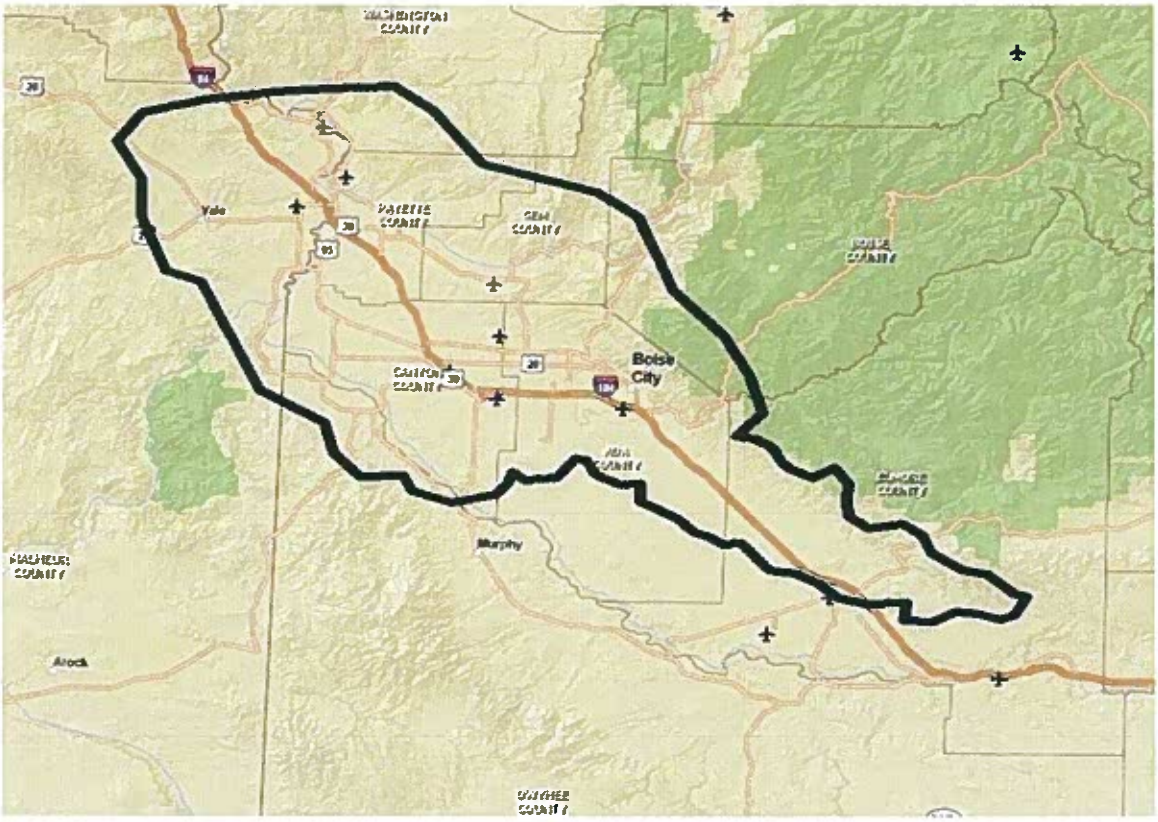
V. Fine Particulate Matter Pollution in Ada and Canyon Counties, Idaho

A. The Treasure Valley Airshed

Ada and Canyon Counties are located in Southwest Idaho's Treasure Valley, shown below in Figure 1. "Treasure Valley" is the term commonly used to refer to the western part of the Snake River Plain in Southwest Idaho and a small portion of Eastern Oregon. The Valley is about 40 to 50 kilometers wide, slopes downward from southeast to northwest, and is bordered to the south by the Owyhee Mountains and to the north by the foothills of the Boise Front and Central Idaho Mountains. The Treasure Valley encompasses the Boise-Nampa Metropolitan Statistical Area (MSA), which is the state's largest designated MSA and is the third largest MSA in the U.S. Pacific Northwest. As of 2010, the Boise-Nampa MSA had a population over 600,000 and represented nearly 40 percent of Idaho's population. Most of the Treasure Valley's population, emission sources, and most heavily-travelled transportation corridors are located in Ada and

Canyon Counties. These are the states two most populous counties and are home to the state's three largest cities: Boise, Nampa, and Meridian. At the end of 2013, Ada and Canyon Counties had a combined population around 615,000 people.[2]

Figure 1. DEQ Map of the Treasure Valley Airshed.



Meteorological analyses and modeling results show that the Treasure Valley is a single airshed, with shared pollution problems that impact both Ada and Canyon Counties.[3] Due to topography and weather patterns, the Treasure Valley is subject to severe wintertime "inversions" or air stagnation periods.[4] During a temperature inversion, a layer of cold, heavier air is trapped under a layer of warmer air, resulting in

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[2] Idaho Department of Labor, "Boise Metro Area: Workforce Trends" (Dec. 2014) (https://labor.idaho.gov/publications/lmi/pubs/BoiseMSAprofile.pdf).

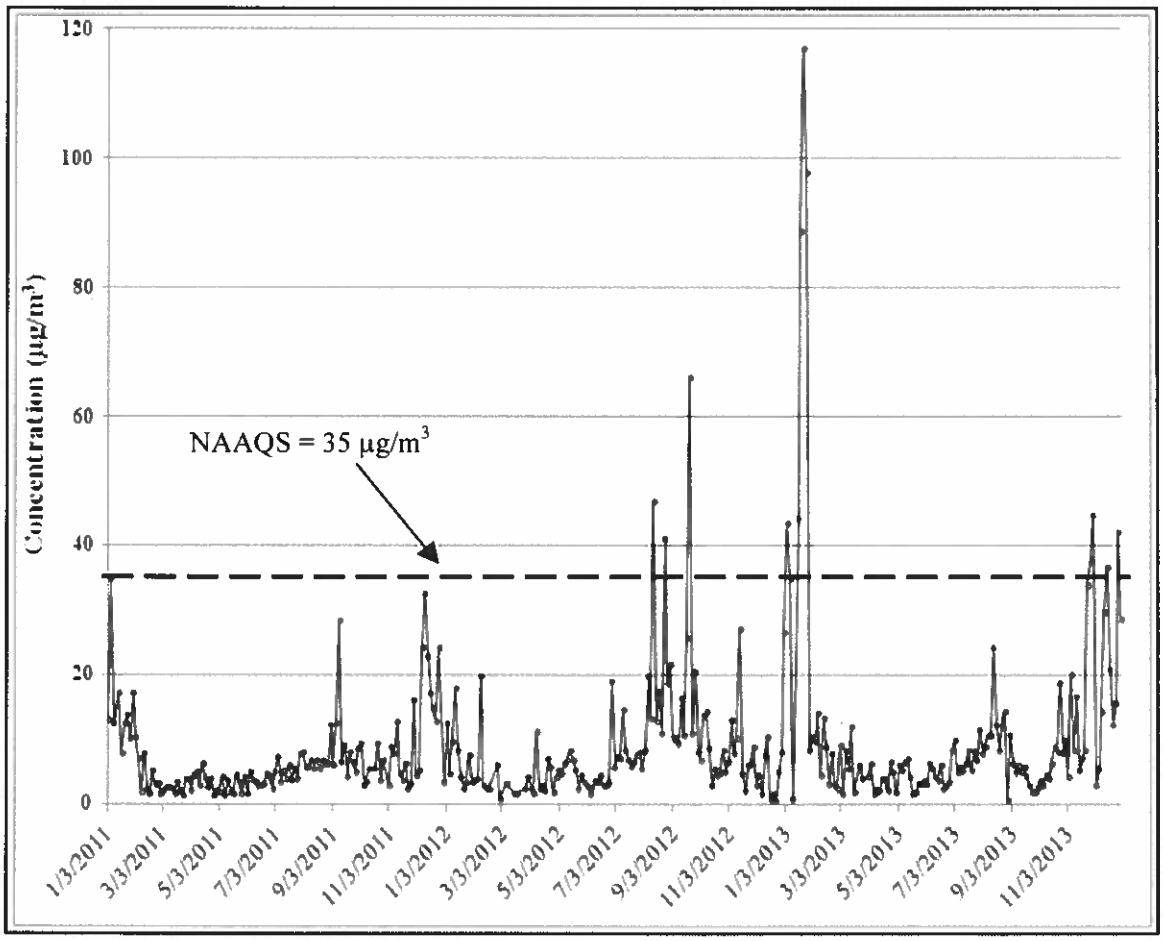
[3] *See* Ilias G. Kavouras, *et al*, Desert Research Institute, Ozone and its Precursors in the Treasure Valley, Idaho, Final Report, (May 2008) (https://www.deq.idaho.gov/media/352767-ozone_treasure_valley_report.pdf). *See also* George R. Mwankiki, *et al.*, Atmospheric Pollution Research, "Factors contributing to elevated concentrations of PM2.5 during wintertime near Boise, Idaho" (Apr. 2014) (http://www.researchgate.net/publication/266376382_Factors_Contributing_to_Elevated_Concentrations_of_PM2.5_during_Wintertime_near_Boise_Idaho).

[4] *See* Idaho Department of Environmental Quality, *Air Quality in Idaho*, "Fine Particulate Matter ($PM_{2.5}$): How particulate pollution affects our view, our health, and air quality" (http://www.deq.idaho.gov/media/63887-fine_particulate_matter_pm2.5.pdf). *See also* Mwankiki, *et al* (2014) at 1–2.

very stable, stagnant atmospheric conditions in the valley for several days at a time, until the arrival of a storm front strong enough to break up the inversion. These conditions trap pollutants emitted just before and during the inversion, including primary $PM_{2.5}$ emitted directly from sources and secondary $PM_{2.5}$ formed by complex chemical reactions involving other pollutants such as oxides of nitrogen and sulfur (NO_x and SO_x), ammonia, and volatile organic compounds (VOCs) that result in the formation of fine particulates (secondary $PM_{2.5}$).

One study found episodes of increased $PM_{2.5}$ concentrations are common in the Treasure Valley during winter months and can last several days or more.[5] Figure 2 below shows that high $PM_{2.5}$ concentrations measured in the Treasure Valley during the most recent three-year monitoring period (2011-2013) have typically occurred during colder months from November to March, although spikes in $PM_{2.5}$ concentrations have also been observed during September and October.

Figure 2. Measured 24-hour $PM_{2.5}$ Concentrations at St. Luke's Meridian Monitor, Site ID 160010010, from 2011-2013.[6]



[5] *Mwankiki, et al* (2014) at 1.

[6] Data reported in the figure above reflect 24-hour duration monitoring for parameter $PM_{2.5}$ from EPA Air Data "Annual Summary Files" available at http://www.epa.gov/airdata/ad_data.html.

The Treasure Valley has a history of struggling to meet and maintain the NAAQS. Northern Ada County was identified as an area of concern for coarse particulate matter (PM_{10}) in 1987 and was formally designated as a moderate PM_{10} nonattainment area upon passage of the 1990 Clean Air Act amendments. *See* 79 Fed. Reg. 59,435 (Oct. 2, 2014) (approving Northern Ada County Second Ten-Year Maintenance Plan for PM_{10}). In 1991, Northern Ada County was designated as a nonattainment area for carbon monoxide. *See* 77 Fed. Reg. 45,962 (approving Northern Ada County's second ten-year maintenance plan for carbon monoxide). Northern Ada County is currently a maintenance area for PM_{10} and carbon monoxide.

The Treasure Valley continues to face challenges in meeting and maintaining NAAQS as standards are strengthened and the Valley's population continues to grow. DEQ has designated Ada and Canyon Counties as an "Area of Concern" for ozone pollution.[7] In recent years, there have been many daily instances where ozone levels violated the NAAQS.[8] DEQ's ozone monitoring shows that ozone levels in the Treasure Valley may exceed the revised ozone NAAQS currently being developed by EPA. DEQ also designated Ada and Canyon County an Area of Concern for $PM_{2.5}$, because like with ozone, DEQ recognized that the area is likely to go into nonattainment if not adequately addressed.[9]

Currently, three DEQ ambient (outdoor) air quality monitoring sites are located in Ada and Canyon Counties. Two of these sites monitor $PM_{2.5}$. The Meridian monitor (Site ID 160010010) is located in Ada County approximately eleven kilometers west of central Boise, and the Nampa monitor (Site ID 160270004) is located in Canyon County seventeen kilometers southwest of the Meridian monitor.[10]

B. Fine Particulate Matter Trends and Violations in the Treasure Valley

As set forth below, both daily and annual $PM_{2.5}$ pollution have increased to unhealthy levels in the Treasure Valley. During the last two years of reporting (2012 and 2013), $PM_{2.5}$ concentrations measured in both Ada and Canyon Counties violated the 24-hour NAAQS on multiple occasions, and Ada County no longer meets EPA's definition of attainment for this standard. And for 2013, Canyon County violated the annual $PM_{2.5}$ NAAQS, and Ada County was barely under that standard.

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[7] *See*, Exhibit 1, Idaho Department of Environmental Quality, "Administrative Boundaries for Areas with Sensitive Air Quality" (http://www.deq.idaho.gov/media/662796-nonattainment_map.pdf).

[8] Kavouras, *et al.* (May 2008) (noting instances of NAAQS violations).

[9] *See* Exhibit 1, Mwankiki, *et al.* (2014) at 1–2.

[10] *See* Exhibit 2, Idaho Department of Environmental Quality, "Idaho DEQ Air Monitoring Network for 2014" (http://www.deq.idaho.gov/media/1118302/air-monitoring-network-map-2014.pdf).

1. 24-Hour $PM_{2.5}$ in Ada County

In 2006, EPA set the primary and secondary 24-hour $PM_{2.5}$ NAAQS at 35 $\mu g/m^3$. That year, Ada County was close to nonattainment. As shown in Table 1, in 2006 the Meridian monitor in Ada County reported an annual 98th percentile of daily mean $PM_{2.5}$ concentration of 34.5 $\mu g/m^3$ (98.6 percent of the standard). This same measurement (the annual 98th percentile of daily mean $PM_{2.5}$) dipped at the Meridian monitor during the great recession but rose substantially each year from 2011 through 2013. In 2012 and 2013, the Meridian monitor exceeded the standard, reaching 41.1 $\mu g/m^3$ in 2012 (117 percent of the standard) and 88.8 $\mu g/m^3$ in 2013 (253 percent of the standard). During 2012, 24-hour $PM_{2.5}$ levels recorded at the Meridian monitor exceeded the NAAQS on 3 instances, which represents 2.6 percent of all valid 24-hour measurements reported by DEQ from that site that year. During 2013, 24-hour $PM_{2.5}$ levels exceeded the NAAQS on 9 instances, or 7.6 percent of all valid 24-hour measurements reported that year.

Table 1. $PM_{2.5}$ 24-hour Monitoring at St. Luke's Meridian Monitor, Site ID 160010010, from 2006-2013.[11]

Year	# Observations	# NAAQS Exceedances	First Max Value ($\mu g/m^3$)	Second Max Value ($\mu g/m^3$)	Third Max Value ($\mu g/m^3$)	Fourth Max Value ($\mu g/m^3$)	98th Percentile ($\mu g/m^3$)	Annual Weighted Arithmetic Mean ($\mu g/m^3$)
2013	119	9	117.1	97.9	88.8	44.9	88.8	11.95
2012	115	3	66.0	46.8	41.1	27.1	41.1	8.44
2011	117	0	34.8	32.5	28.5	24.3	28.5	6.89
2010	122	0	25.3	15.9	12.3	12.3	12.3	5.03
2009	117	0	30.4	19.3	17.0	16.6	17.0	6.27
2008	79	0	29.4	29.0	18.8	17.5	29.0	7.91
2007	42	0	20.9	17.3	16.8	16.8	20.9	6.78
2006	15	0	34.5	17.0	14.9	14.1	34.5	9.62

[11] This table was created using data from EPA's Annual Summary Files from EPA AirData (available at http://www.epa.gov/airdata/ad_data.html). Data reported in the table above reflect 24-hour duration monitoring for parameter "$PM_{2.5}$ - Local Conditions." In 2012 and 2013 EPA concurred with DEQ excluded events, and the data in this table.

Table 2. $PM_{2.5}$ 24-hour Design Values at St. Luke's Meridian Monitor, Site ID 160010010.[12]

Three-year Period	2004-06	2005-07	2006-08	2007-09	2008-10	2009-11	2010-12	2011-13
Design Value ($\mu g/m^3$)	35*	28*	28*	22	19	19	27	53

Data from the Meridian monitor show that Ada County is no longer in attainment with the 24-hour $PM_{2.5}$ NAAQS. As shown above in Table 2, during the most recent three-year period (2011-2013), the design value at the Meridian monitor was 53 $\mu g/m^3$—more than 150 percent of the 35 $\mu g/m^3$ standard. Over this period (2011-2013), Ada County had the fourth highest 24-hour fine particulate matter pollution in the nation, as measured by the design value and shown in Exhibit 3, which is a table of the areas with the highest 24-hour $PM_{2.5}$ design values in the nation for the 2011-2013 period.

2. Mean Annual $PM_{2.5}$ in Ada County

As shown above in Table 1 above, Ada County's annual $PM_{2.5}$ trends are similar to its 24-hour $PM_{2.5}$ trends from 2006 through 2013. Mean annual $PM_{2.5}$ values at the Meridian monitor dipped during the great recession but have risen each year from 2011 through 2013. And while Ada County has not exceeded the annual mean 12.0 $\mu g/m^3$ standard for $PM_{2.5}$, it is getting close to doing so. In 2013, the annual mean $PM_{2.5}$ concentration at the Meridian monitor was 11.95 $\mu g/m^3$–or 99.6 percent of the standard.

3. 24-Hour $PM_{2.5}$ in Canyon County

As shown in Table 3, 24-hour $PM_{2.5}$ trends at the Nampa monitor in Canyon County are similar to trends in neighboring Ada County. At the Nampa monitor, the 98th percentile of daily mean 24-hour $PM_{2.5}$ dipped during the great recession but has risen substantially each year from 2011 through 2013. While the Nampa monitor has not exceeded the design value for the 24-hour NAAQS over a three year average, the Nampa monitor significantly exceeded the NAAQS in 2013, reporting a 98th percentile of the 24-hour mean value of 49.9 $\mu g/m^3$ (143 percent of the standard). And during 2012, 24-hour $PM_{2.5}$ levels recorded at the Nampa monitor exceeded the NAAQS once, which is 1.67 percent of all 24-hour measurements reported that year. And during 2013, 24-hour $PM_{2.5}$ levels exceeded the NAAQS on 4 instances, or 7.1 percent of all valid 24-hour measurements reported that year.

[12] EPA Design Values 2006 through 2013: $PM_{2.5}$ Detailed Information (updated Aug. 38, 2014) (available at http://epa.gov/airtrends/values.html). Asterisk indicates these data did not meet minimum completeness and/or quality assurance criteria.

Table 3. $PM_{2.5}$ 24-hour Monitoring at Nampa Monitors, Site ID 160270004 (Northwest Nazarene University) and Site ID 160270002 (Nampa Fire Station) from 2006-2013.[13]

Year	# Observations	# NAAQS Exceedances	First Max Value ($\mu g/m^3$)	Second Max Value ($\mu g/m^3$)	Third Max Value ($\mu g/m^3$)	Fourth Max Value ($\mu g/m^3$)	98th Percentile ($\mu g/m^3$)	Annual Weighted Arithmetic Mean ($\mu g/m^{3)}$
Site ID 160270002, Nampa Fire Station, June 20, 2008 through 2013								
2013	59	4	120.4	49.9	45.1	44.8	49.9	12.86
2012	60	1	56.1	26.5	25.3	24.6	26.5	10.57
2011	61	0	29.7	22.5	21.6	21.0	22.5	8.94
2010	60	0	22.7	14.9	13.8	12.9	14.9	5.84
2009	61	0	18.8	18.3	17.8	17.3	18.3	7.46
2008	43	0	26.7	17.2	17.0	16.9	26.7	9.01
Site ID 160270004, NNU, January 2006 through June 17, 2008								
2008	63	0	34.7	29.8	27.6	24.2	29.8	7.25
2007	243	1	51.8	29.1	27.4	26.2	26.1	7.67
2006	105	0	26.7	24.1	22.4	20.7	22.4	7.65

4. Mean Annual $PM_{2.5}$ in Canyon County

As shown above in Table 3, mean annual $PM_{2.5}$ levels in Canyon County increased significantly from 2011 through 2013. In 2013, Canyon County exceeded the NAAQS, reporting an annual mean $PM_{2.5}$ of 12.86 $\mu g/m^3$, or 107 percent of the standard.

[13] This table was created using data from EPA's Annual Summary Files from EPA AirData (available at http://www.epa.gov/airdata/ad_data.html). Data reported in the table above reflect 24-hour duration monitoring for parameter "$PM_{2.5}$ - Local Conditions." In 2012 and 2013 EPA concurred with DEQ excluded events, and the data in this table.

VI. EPA Must Redesignate Ada and Canyon Counties to Nonattainment for $PM_{2.5}$

EPA must redesignate Ada County as nonattainment for the 2006 primary and secondary 24-hour $PM_{2.5}$ NAAQS. EPA has authority to redesignate areas when air quality data, planning and control considerations, or any other air quality related considerations indicate that an area designation should be revised. 42 U.S.C. § 7407(d)(3)(A). Air quality monitoring data from the Meridian monitor shows that Ada County has violated the NAAQS on multiple occasions, and the design value at this monitor substantially exceeded the NAAQS over the most recent three-year period (2011-2013). In fact, 24-hour $PM_{2.5}$ levels were so high during 2012 and 2013 that the design value is guaranteed to exceed the NAAQS again during the next three-year period (2012-2014). And the design value will likely violate the NAAQS yet again during the following period (2013-2015) unless values are drastically reduced to an average of 8.1 $\mu g/m^3$ each year in 2014 and 2015, which is very unlikely, as this is far below any design value reported at the Meridian monitor from 2006-2013.

Nonattainment areas must include any and all areas not meeting the standard and any nearby contributing areas. While Canyon County has not exceeded the design values for the annual or 24-hour NAAQS, $PM_{2.5}$ levels are high in Canyon County and contribute to nonattainment in Ada County. Canyon County has violated both the annual and 24-hour NAAQS for $PM_{2.5}$ in recent years, and Canyon County is likely to go into nonattainment in the near future as the population continues to grow. Canyon County is adjacent to and generally upwind of Ada County, and both counties are part of the Treasure Valley airshed. Therefore, EPA must include Canyon County in this nonattainment designation, as well as any other contributing areas in or near the Treasure Valley airshed.

EPA action to redesignate this area nonattainment is critical. The State of Idaho's current regulation of fine particulate matter pollution is inadequate. Even though DEQ recognized Ada and Canyon Counties as $PM_{2.5}$ Areas of Concern, fine particulate matter pollution has skyrocketed in both counties in recent years and is now among the worst in the nation. The Treasure Valley is not the only area in Idaho where DEQ has been unable to adequately control $PM_{2.5}$. During the most recent reporting period (2011-2013), two additional areas in Idaho failed to attain the NAAQS. As a result, three of the 23 areas nationwide that failed to attain the 24-hour $PM_{2.5}$ NAAQS are located in Idaho.[14] Until EPA takes action to redesignate Ada and Canyon Counties, residents of Idaho's largest metropolitan area will continue to breath unacceptably high levels fine particulate matter pollution and experience serious health and environmental impacts and costs.

[14] *See* Exhibit 3.

Conclusion

ICL petitions the EPA Administrator to redesignate Ada and Canyon Counties, Idaho, and all appropriate surrounding areas, as nonattainment for the 2006 primary and secondary $PM_{2.5}$ NAAQS pursuant to Section 107(d)(3) of the Clean Air Act, 42 U.S.C. § 7407(d)(3). Specifically, ICL requests that EPA notify the Governor of the State of Idaho that available information indicates that the designation of Ada and Canyon Counties should be revised, as required by Section 107(d)(3). Petitioners further request that, EPA promptly promulgate an appropriate redesignation either upon receiving a redesignation from the Governor or upon the expiration of the 120-day deadline for the Governor to submit a redesignation.

Sincerely,

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Table of Exhibits

Exhibit 1: Idaho Department of Environmental Quality, "Administrative Boundaries for Areas with Sensitive Air Quality" (http://www.deq.idaho.gov/media/662796-nonattainment_map.pdf)

Exhibit 2: Idaho Department of Environmental Quality, "Idaho DEQ Air Monitoring Network for 2014" (http://www.deq.idaho.gov/media/1118302/air-monitoring-network-map-2014.pdf)

Exhibit 3: Table of areas with the highest 24-hour PM2.5 design value for the 2011-2013 period created using data available at EPA's website: http://epa.gov/airtrends/values.html.

Exhibit 1

Administrative Boundaries for Areas with Sensitive Air Quality

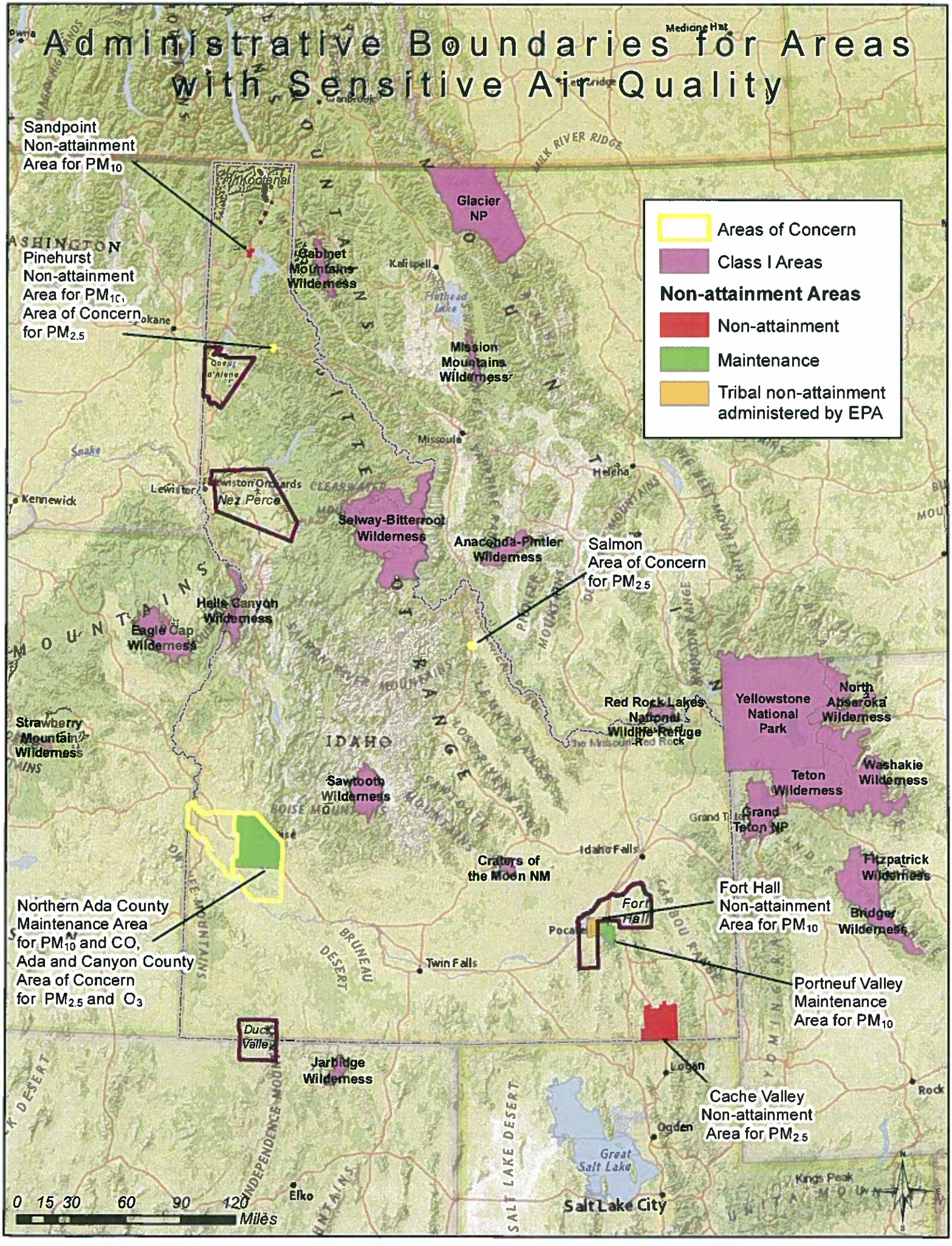

Exhibit 2

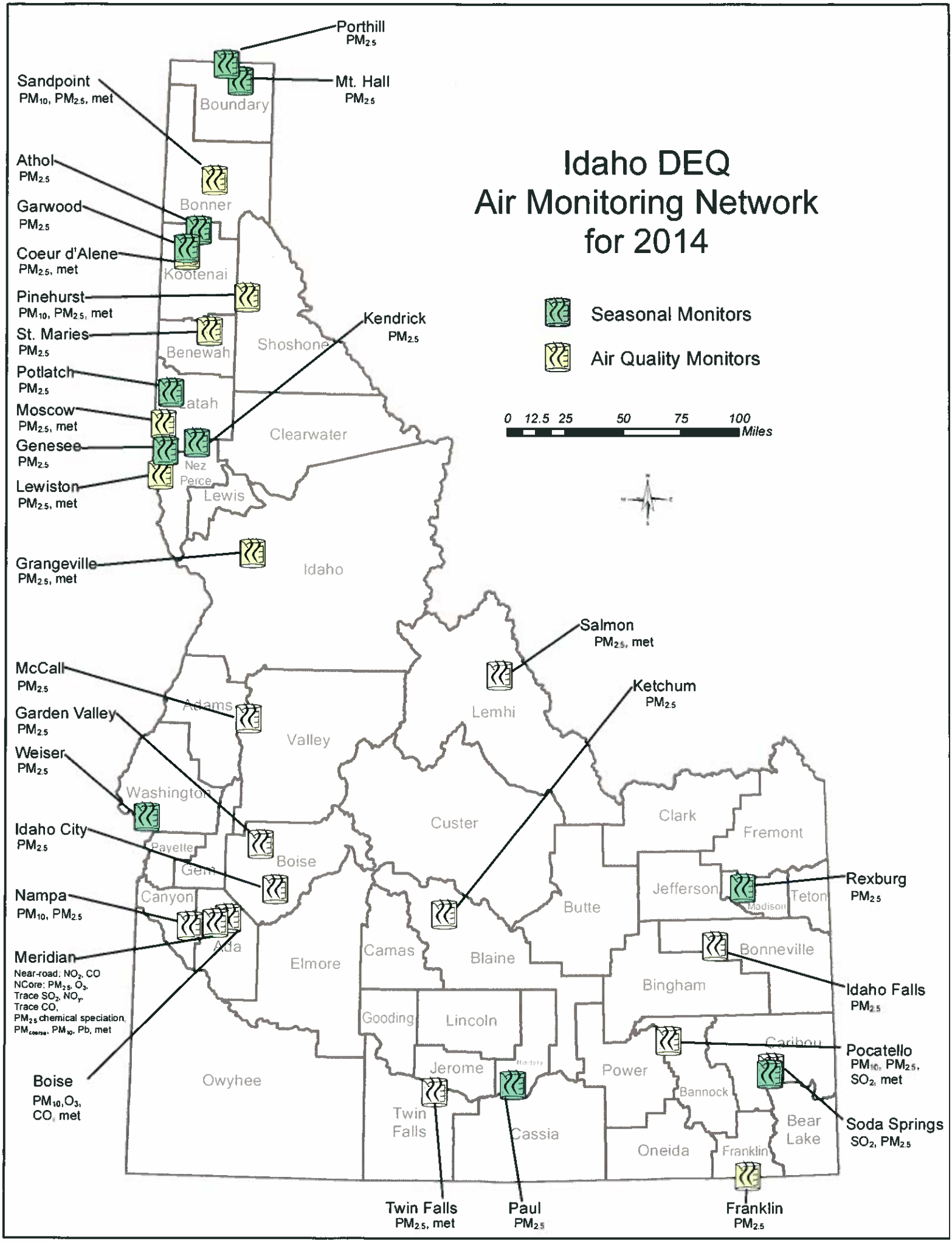
Idaho DEQ
Air Monitoring Network
for 2014
Seasonal Monitors
Air Quality Monitors
0 12.5 25 50 75 100
Miles
Porthill
PM2.5
Mt. Hall
PM2.5
Sandpoint
PM10, PM2.5, met
Athol
PM2.5
Garwood
PM2.5
Coeur d'Alene
PM2.5, met
Pinehurst
PM10, PM2.5, met
St. Maries
PM2.5
Potlatch
PM2.5
Moscow
PM2.5, met
Genesee
PM2.5
Lewiston
PM2.5, met
Kendrick
PM2.5
Grangeville
PM2.5, met
McCall
PM2.5
Garden Valley
PM2.5
Weiser
PM2.5
Idaho City
PM2.5
Nampa
PM10, PM2.5
Meridian
Near-road: NO2, CO
NCore: PM2.5, O3,
Trace SO2, NOy,
Trace CO,
PM2.5 chemical speciation,
PMcoarse, PM10, Pb, met
Boise
PM10, O3,
CO, met
Salmon
PM2.5, met
Ketchum
PM2.5
Rexburg
PM2.5
Idaho Falls
PM2.5
Pocatello
PM10, PM2.5,
SO2, met
Soda Springs
SO2, PM2.5
Twin Falls
PM2.5, met
Paul
PM2.5
Franklin
PM2.5
Boundary
Bonner
Kootenai
Shoshone
Benewah
Latah
Clearwater
Nez
Perce
Lewis
Idaho
Adams
Valley
Washington
Payette
Gem
Canyon
Ada
Boise
Elmore
Owyhee
Lemhi
Custer
Camas
Blaine
Gooding
Lincoln
Jerome
Minidoka
Twin
Falls
Cassia
Clark
Fremont
Jefferson
Madison
Teton
Butte
Bonneville
Bingham
Caribou
Power
Bannock
Oneida
Franklin
Bear
Lake

Exhibit 3

Table Ex. 3. Areas with the Highest 24-hour $PM_{2.5}$ Design Value for 2011-2013 Three-year Period

Designated Area (2006 NAAQS)	State	County	EPA Region	Designation Status or Site ID	2011-2013 24-hour Design Value ($\mu g/m^3$)	Met 2006 NAAQS?	National Ranking for $PM_{2.5}$ Design Value, 2011-2013
San Joaquin Valley	CA		09	Nonattainment	65	no	1
	MT	Ravalli	08	300810007	63	no	2
	OR	Lake	10	410370001	56	no	3
CBSA: Boise City-Nampa, ID	ID	Ada	10	160010010	53	no	4
Logan	UT-ID		08, 10	Nonattainment	46	no	5
Provo	UT		08	Nonattainment	46	no	5
Fairbanks	AK		10	Nonattainment	45	no	7
Imperial Co [6]	CA		09	Nonattainment	42	no	8
CBSA: Medford, OR	OR	Jackson	10	410290133	42	no	8
Salt Lake City	UT		08	Nonattainment	41	no	10
Klamath Falls	OR		10	Nonattainment	40	no	11
Oakridge	OR		10	Nonattainment	40	no	11
(Silver Valley, Pinehurst)	ID	Shoshone	10	160790017	40	no	11
CBSA: Butte-Silver Bow, MT	MT	Silver Bow	08	300930005	39	no	14
CBSA: Prineville, OR	OR	Crook	10	410130100	39	no	14
Los Angeles	CA		09	Nonattainment	38	no	16
CBSA: Bishop, CA	CA	Inyo	09	060271003	38	no	16
	CA	Plumas	09	060631010	38	no	16
(Salmon, Lemhi County)	ID	Lemhi	10	160590004	38	no	16
CBSA: Missoula, MT	MT	Missoula	08	300630024	37	no	20
Liberty-Clairton	PA		03	Nonattainment	37	no	20
Sacramento	CA		09	Nonattainment	36	no	22
	CA	Plumas	09	060631006	36	no	22

Table Ex. 3 shows the areas with the highest 24-hr $PM_{2.5}$ design value concentrations for the period 2011 through 2013. These values were taken from the EPA Design Values spreadsheet (available at http://epa.gov/airtrends/values.html), which was based on an August 8, 2014 AQS Query last updated by EPA on August 28, 2014. The spreadsheet is available at http://epa.gov/airtrends/values.html (last accessed on November 11, 2014). The Table 1b worksheet, *Areas Previously Designated Nonattainment for the 2006 $PM_{2.5}$ 24-hour NAAQS,* was sorted by the 24-hr Design Value from highest to lowest. Inserted rows, shown as shaded in Table E-1, were taken from Table 2b, *Other 24-hr Violators.* The 2006 24-hour NAAQS for $PM_{2.5}$ is 35 micrograms per cubic meter ($\mu g/m^3$). The design value for the 24-hour $PM_{2.5}$ NAAQS is the 3-year average of the 98th percentile concentration for each year.