ORAL ARGUMENT REQUESTED

IN THE UNITED STATES COURT OF APPEALS FOR THE TENTH CIRCUIT

Consolidated Case Nos. 09-9561, 10-9501, 10-9502

ATK LAUNCH SYSTEMS, INC., et al.,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,

Respondent.

ON PETITION FOR REVIEW OF FINAL ACTION BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

RESPONDENT'S FINAL RESPONSE BRIEF

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GLOSSARY

APA Administrative Procedure Act

Environmental Services, Alliant Techsystems, Inc., ATK

Launch Systems, Oct. 2, 2008, Index 164-165

CAA Clean Air Act or Act

Letter

Letter to Utah

CBSA Core-Based Statistical Area

CES Contributing Emissions Score

CSA Combined Statistical Area

Designations Air Quality Designations for the 2006 24-Hour Fine

Rule Particles (PM_{2.5}) National Ambient Air Quality

Standards, 74 Fed. Reg. 58,688 (Nov. 13, 2009)

EPA Environmental Protection Agency

EPA Modification Letter to Hon. J. Huntsman, Governor, from C. Rushin,

Acting Regional Administrator, Providing the

Environmental Protection Agency's Response to Utah's Dec. 18, 2007 Recommendations for the Boundaries of Areas Attaining and Not Attaining the 2006 24-Hour National Ambient Air Quality Standards, Aug. 18, 2008,

Index 524

Guidance EPA memorandum on Area Designations for the Revised

24-Hour Fine Particle NAAQS, June 8, 2007, Index 479

JA Joint Appendix

NAAQS National Ambient Air Quality Standard or Standards

NH₃ Ammonia

NO₃ Nitrate

Doc.

NO_x Nitrogen Oxides

PM_{2.5} Fine Particles

PM2.5 Design Spreadsheet Presenting PM_{2.5} Design Values

Values 1999-2001 Determined for the 3-year Periods from 1999-2001 to

to 2006-2008 2006-2008, Aug. 31, 2009, Index 704

Public Comment Summary and Response Document on

EPA's Recommended Area Designations for the 2006

24-Hour PM_{2.5} Designation Recommendations, Dec. 22,

2008, Index 671

Sept. 9, 2009 Mem. Mem. From C. Roberts to 24-Hour PM_{2.5} Designations

Dkt., Sept. 9, 2009, Index 703

SIP State Implementation Plan

SO_x Sulfur oxides

State Comment State and Tribal Comment Summary and Response

Doc. Document on EPA's Recommended Area Designations

for the 2006 24-Hour PM_{2.5} Designation Recommendations, Dec. 22, 2008, Index 670

Supplemental TSD September 2009 Supplemental Technical Support

Document, Ch. 2, (2006-2008 Design Values), Index 675

TPY Tons Per Year

TSD Technical Support Document for 2006 24-Hour PM_{2.5}

NAAQS Designations, December 2008, Index 583-669

μg/m³ Micrograms Per Cubic Meter

Utah DAQ Utah Division of Air Quality

Utah Letter from J. Huntsman, Jr., Governor, to R. Roberts,

Recommendation USEPA Region VIII Administrator Submitting

Letter Utah's Recommendations for the Boundaries of Areas

that are Attaining and Not Attaining the 2006 Revised

24-Hour PM_{2.5} NAAQS, Dec. 18, 2007, Index 463

VOCs Volatile Organic Compounds

VMT Vehicle Miles Traveled

STATEMENT OF RELATED CASES

ATK Launch Sys. Inc. v. EPA, No. 10-1004, filed Jan. 12, 2010 (D.C. Cir.), consolidated with Box Elder County, Utah, et al. v. EPA, No. 10-1005, filed Jan. 12, 2010 (D.C. Cir.); and Tooele County, Utah, et al. v. EPA, No. 10-1006, filed Jan. 12, 2010 (D.C. Cir.).

JURISDICTION

Petitioners challenge the Environmental Protection Agency's ("EPA's")

"Air Quality Designations for the 2006 24-Hour Fine Particle National Ambient
Air Quality Standards," 74 Fed. Reg. 58,688 (Nov. 13, 2009). The rule is

"nationally applicable" and EPA published its finding that the rule is based on
determinations of "nationwide scope or effect." Pursuant to the Clean Air Act

("CAA" or the "Act"), 42 U.S.C. § 7607(b)(1), such actions may only be reviewed
in the Court of Appeals for the District of Columbia Circuit ("D.C. Circuit").

Therefore, this Court lacks jurisdiction. Additionally, the Court lacks jurisdiction
over Petitioners' challenge to the Tooele County nonattainment designation
because no Petitioner has demonstrated sufficient standing under Article III of the
Constitution to challenge this designation.

STATEMENT OF ISSUES

- 1. Whether this case should be dismissed or transferred to the D.C. Circuit because this Court lacks jurisdiction under 42 U.S.C. § 7607(b)(1).
- 2. Whether any Petitioner has demonstrated Article III standing to challenge the nonattainment designation for parts of Tooele County.

- 3. Whether EPA reasonably and consistently applied its nine-factor analysis to determine that eastern Box Elder and Tooele Counties contribute to nonattainment in nearby areas.
- 4. Whether EPA correctly analyzed wind data and other factors to conclude eastern Box Elder contributes to nonattainment in nearby areas and reasonably selected the Promontory Mountains as the nonattainment area boundary.

STATEMENT OF THE CASE AND FACTS

This case involves a fundamental aspect of EPA's statutory mission to protect the public from dangerous and unhealthy air. The CAA directs EPA to establish National Ambient Air Quality Standards ("NAAQS" or "standards") for criteria pollutants that are harmful to public health and the environment, 42 U.S.C. §§ 7408-7409, and then to designate areas as in "attainment" or "nonattainment" with the NAAQS, <u>id.</u> § 7407(d)(1). A "nonattainment" designation triggers subsequent actions that States, EPA, and others must take to achieve the NAAQS "as expeditiously as practicable." <u>Id.</u> § 7502(a)(2)(A). The statute requires that nonattainment areas include both areas that violate the NAAQS and areas that contribute to nearby NAAQS violations, so that emissions within those areas will be addressed and the NAAQS will be achieved. <u>Id.</u> § 7407(d)(1).

In 2009, EPA promulgated a nationwide "Designations Rule," designating 31 nonattainment areas for the 2006 24-Hour NAAQS for fine particulate matter or "PM_{2.5}." 74 Fed. Reg. 58,688. Studies have shown significant impacts from PM_{2.5} exposure, including premature death from heart and lung disease and other serious adverse health effects. <u>Id.</u>

Petitioners – a local emissions source and several local governments – challenge inclusion of the eastern portions of Tooele and Box Elder Counties within the Salt Lake City nonattainment area. The petitions should be dismissed because CAA section 307(b)(1), 42 U.S.C. § 7607(b)(1), limits review to the D.C. Circuit. If the Court reaches the merits, however, the record demonstrates that EPA reasonably concluded that eastern Box Elder and Tooele contribute to nonattainment in the Salt Lake City area and properly designated these areas nonattainment. Therefore, the Court should deny the petitions.

I. STATUTORY BACKGROUND

The CAA, 42 U.S.C. §§ 7401-7671q, establishes a joint state and federal program to address air pollution. Pursuant to Title I, EPA identifies pollutants that may reasonably be anticipated to endanger public health and welfare, and formulates NAAQS that specify the maximum permissible concentrations of those pollutants in the ambient air. <u>Id.</u> §§ 7408-7409. EPA has promulgated NAAQS for several pollutants, including PM_{2.5}. 40 C.F.R. pt. 50.

Once it promulgates a new or revised NAAQS, section 107(d)(1) requires that EPA designate areas as "attainment," "nonattainment," or "unclassifiable" under the NAAQS. 42 U.S.C. § 7407(d)(1). "Nonattainment" areas violate the NAAQS or contribute to NAAQS violations in a "nearby" area; "attainment" areas meet the NAAQS; and "unclassifiable" areas are those for which EPA lacks sufficient information to determine whether the NAAQS are met. <u>Id.</u> § 7407(d)(1)(A)(i)-(iii).

Section 107(d)(1) prescribes the designation process. States first must submit to EPA their recommended "initial designations" for all areas within their borders. <u>Id.</u> § 7407(d)(1)(A). EPA, in turn, must notify States of its proposed modifications and then promulgate the designations with any modifications "the Administrator deems necessary." <u>Id.</u> § 7407(d)(1)(B)(ii). EPA is not required to undertake notice-and-comment, although EPA may elect to do so. <u>See id.</u> §§ 7407(d)(2)(b), 7607(d).

Once EPA makes designations, states must adopt and implement state implementation plans ("SIPs") to attain, maintain, and enforce the NAAQS, through, *inter alia*, enforceable emissions limitations and other control measures applicable to pollutant sources. <u>Id.</u> § 7410. For nonattainment areas, SIPs must include measures to provide for attainment of the NAAQS "as expeditiously as practicable," including measures to reduce emissions of relevant pollutants, <u>id.</u>

§ 7502(a)(2); 40 C.F.R. §§ 51.1000-1012. SIPs for attainment or unclassifiable areas must include measures to "prevent significant deterioration of air quality," among other things. 42 U.S.C. § 7471.

II. REGULATORY BACKGROUND

A. PM_{2.5} NAAQS and Prior PM_{2.5} Designations

In 1997, EPA introduced both "annual" and "24-hour" NAAQS for PM_{2.5}—i.e., particles with an aerodynamic diameter no greater than 2.5 microns. 62 Fed. Reg. 38,652 (July 18, 1997). EPA designated areas under the 1997 PM_{2.5} NAAQS on January 5, 2005. 70 Fed. Reg. 944 (Jan. 5, 2005).

Multiple petitioners challenged EPA's designations for the 1997 annual PM_{2.5} NAAQS, attacking EPA's statutory interpretation, analytical approach, and technical judgments. The D.C. Circuit generally upheld the rule, finding that "EPA both complied with the statute and, for all but one of the 225 counties or partial counties it designated as nonattainment, satisfied – indeed, quite often surpassed – its basic obligation of reasoned decisionmaking." <u>Catawba County.</u> N.C. v. EPA, 571 F.3d 20, 25 (D.C. Cir. 2009).

On October 17, 2006, EPA promulgated a revised 24-hour $PM_{2.5}$ NAAQS, strengthening the standard from 65 micrograms per cubic meter ($\mu g/m^3$) to 35

μg/m³. 71 Fed. Reg. 61,144 (Oct. 27, 2006). The revised NAAQS triggered the section 107(d) designations process relevant here.

B. Designations for the 2006 24-Hour PM_{2.5} NAAQS

On June 8, 2007, EPA initiated the designations process for the 2006 24-hour PM_{2.5} NAAQS by issuing guidance regarding the timeline and process for the designations. EPA Memorandum on Area Designations for the Revised 24-Hour Fine Particle NAAQS, Index 479, Joint Appendix ("JA") 197-201. The Guidance also announced EPA's intention to evaluate nonattainment boundaries using a similar analytical approach to that used for the 1997 PM_{2.5} NAAQS designations and upheld in <u>Catawba</u>, 571 F.3d at 20.

The Guidance explained that nonattainment areas should cover a sufficiently large area to include both areas that violate the NAAQS and areas that contribute to these violations. To identify violating areas, EPA would consider the three most recent calendar years of air quality monitoring data. To determine what areas "contribute" to violations in "nearby" areas, EPA would undertake a case-by-case analysis of each area with violations, considering information related to nine factors identified in the guidance and other relevant information. As a starting point, EPA would consider all counties within, and one to two adjacent rings beyond, the core-based statistical area ("CBSA") or Combined Statistical Area

The annual PM_{2.5} NAAQS are not relevant here.

("CSA"), as defined by the Office of Management and Budget.² 74 Fed. Reg. 58,694; Technical Support Document for 2006 24-Hour PM_{2.5} Designations ("TSD") 3.1.4, Index 585, at 3-6, JA320.

Most states submitted recommended designations on December 18, 2007.

On August 19, 2008, EPA notified states of proposed modifications to the states' recommended designations. See, e.g., EPA Modification Letter to Utah, Index 524, JA202-292. Subsequently, EPA invited public comment on the designations. 73 Fed. Reg. 51,259 (Sept. 2, 2008).

EPA promulgated final nationwide designations on November 13, 2009. 74

Fed. Reg. 58,688; 40 C.F.R. pt. 81. Relevant here, EPA designated a Salt Lake

City nonattainment area consisting of Davis, Salt Lake, and portions of Weber,

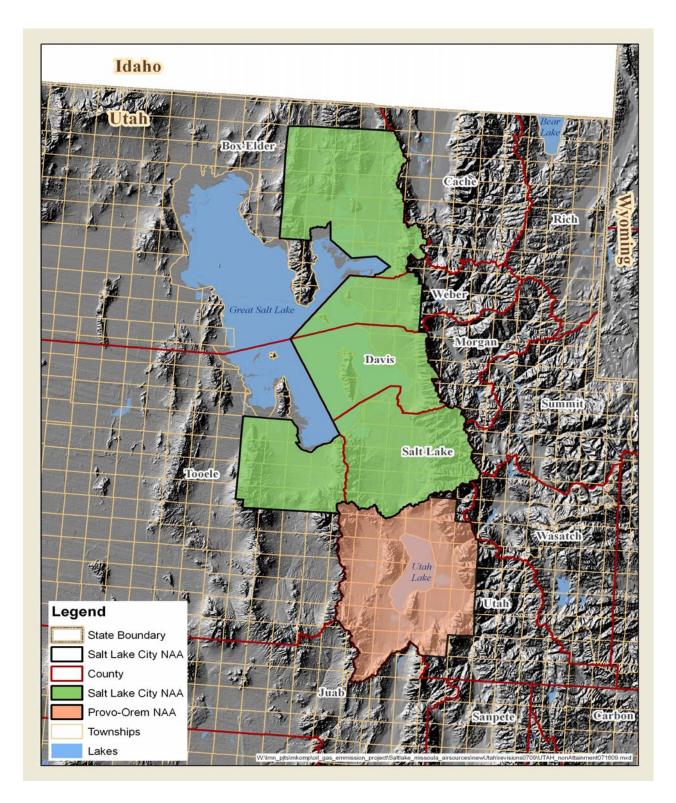
Box Elder and Tooele Counties. TSD 4.8.2, Index 612, at 24-25, JA452-53. Of

the 31 nonattainment areas designated nationwide, the Box Elder and Tooele

designations are the only designations challenged.

The Salt Lake City nonattainment area appears below:

² CBSAs are established for collection of statistical data on recognized population centers and adjacent communities. 65 Fed. Reg. 82,228 (Dec. 27, 2000). Combined statistical areas ("CSAs") include one or more CBSAs.



Supplemental TSD, Ch. 9, Index 727, JA1005.

III. KEY ASPECTS OF THE DESIGNATIONS

A. The Nature of $PM_{2.5}$

PM_{2.5} consists of airborne particles roughly one-thirtieth the thickness of a human hair. 74 Fed. Reg. 58,690. PM_{2.5} can penetrate deeply into the lungs, where it can accumulate, react, or be absorbed into the body. <u>Id.</u> Exposure to PM_{2.5} may cause serious human health effects, aggravation of respiratory and cardiovascular disease, lung disease, decreased lung function, asthma, heart attacks, and premature death. <u>Id.</u> Older adults, people with heart and lung disease, and children are particularly sensitive to PM_{2.5}. <u>Id.</u>

PM_{2.5} is a complex mixture of liquid and solid particles such as ammonium sulfate, ammonium nitrate, carbonaceous PM (including organic carbon and elemental carbon), and crustal material. <u>Id.</u> "Primary" particles (such as carbonaceous soot from diesel emissions) are released directly into the air; "secondary" particles arise from complex chemical reactions of chemical precursors that sources emit, including sulfur dioxide, nitrogen oxides, volatile organic compounds, and ammonia. Id.

Multiple sources emit $PM_{2.5}$ and its precursors, including power plants and other industrial sources, animal feeding operations and fertilizer production, reentrained road dust, agriculture, mining, diesel and gasoline powered engines in mobile sources and heavy equipment, wildfires, and waste burning. <u>Id.</u> Direct and

secondary PM_{2.5} can be transported many miles from the source, depending on meteorological conditions and winds. <u>Id.</u> Wind direction, speed, and strength all vary over the course of a single day, by season, and over the entire year. <u>Id.</u>

Consequently, the proportion of primary versus secondary particles and of different species of particles found in any geographic area, can vary widely, depending upon factors including the mix of sources, the mix of PM_{2.5} precursors, and meteorology. <u>Id.</u> Additionally, depending on the area, PM_{2.5} may include primary and secondary PM_{2.5} emissions from sources in that area, nearby areas, or areas farther away. <u>Id.</u>

B. EPA's Nine-Factor Analysis

Confronted with the complex nature of PM_{2.5}, its serious adverse health impacts, multiple precursors, numerous sources, meteorological considerations, and the need to distinguish between local and non-local sources at any monitor, EPA concluded that a bright-line or numeric standard would be inappropriate for identifying areas that "contribute" to nonattainment in nearby areas. 74 Fed. Reg. 58,693. Instead, EPA developed a case-by-case approach that considers the circumstances of each area. Id.

EPA's case-by-case approach involved an analysis of nine factors:

- (1) emissions data;
- (2) air quality data;
- (3) population density and degree of urbanization;

- (4) traffic and commuting patterns;
- (5) expected growth, including extent, pattern, and rate of growth;
- (6) meteorology (weather and transport patterns);
- (7) geography and topography (e.g., mountain ranges or other airshed boundaries);
- (8) jurisdictional boundaries (e.g., counties, air districts); and
- (9) level of existing controls on emission sources.

Id. 58,694; see generally TSD 3.0, Index 585, JA315-27.

The nine factors were neither mandatory nor exhaustive, but rather, were intended as guidance regarding the types of information that might be appropriate for consideration in a given area. 74 Fed. Reg. 58,694-95. The factors were intentionally general and open-ended to facilitate an analysis of the facts of each area. <u>Id.</u> at 58,695. EPA considered information related to these factors and other relevant information states submitted in determining nonattainment area boundaries. <u>Id.</u>

C. Data and Analytical Tools

EPA's nine-factor analysis incorporated specialized data and analytical tools, described below.

1. Monitoring Data

To identify areas violating the 24-hour PM_{2.5} NAAQS, EPA considered air quality monitoring data for 2006-2008. <u>Id.</u> The 24-hour PM_{2.5} standards are met when the average of a monitor's 98^{th} percentile values for three consecutive years is $35 \,\mu\text{g/m}^3$ or less. TSD 3.0, at 3-2, JA316. This means that for each monitor, the 98th percentile value for each of three consecutive years is averaged to arrive at a three-year "design value" that is compared against the standard. A "violation" occurs when the three-year design value exceeds the standard.

Where available, EPA also examined data from PM_{2.5} speciation monitors. 74 Fed. Reg. 58,695; TSD 3.0, at 3-3—3-4, JA317-18. The speciated data indicates the relative proportions of the component materials of PM_{2.5} (e.g., sulfates, nitrates, carbonaceous or crustal particles) at a monitor. These data provide insights as to likely emissions sources contributing to PM_{2.5} concentrations at a violating monitor, allowing EPA to better evaluate which nearby areas have emissions that are contributing to the violations.

2. Contributing Emissions Score

The contributing emissions score ("CES") is a metric that considers emissions data, meteorological data, and air quality monitoring information to provide a relative ranking of the potential contribution from counties near a specific county with a violating monitor. See generally TSD Appx. H, Index 663,

JA519-60. It considers frequency, speed, and direction of air masses passing through a county on high PM_{2.5} days, and uses county-based emissions inventories, assuming that the emissions are distributed uniformly throughout the county. The CES is one tool that EPA used for considering data; it was not intended as the deciding factor for determining designations. 74 Fed. Reg. 58,695 n.16. Further, because an area's CES is relative to other counties in the particular metropolitan area, it cannot be compared to CES scores for an entirely separate metropolitan area. <u>Id.</u> at 58,695.

The CES metric has some limitations relevant to areas in the western United States. TSD Appx. H at 9-10, JA527-28. The assumption that emissions are distributed uniformly throughout the county could be inaccurate in counties with isolated, densely populated areas or with large rural areas. <u>Id.</u> Additionally, the CES cannot adequately account for the effects of mountainous terrain that could split a county into different parts, each having potentially different effects on the violating county. <u>Id.</u> As will be discussed, EPA took such limitations into account in making the designations at issue here.

3. Pollution Roses and Back Trajectories

EPA's "pollution roses" combine data from ambient monitoring sites in or near potential nonattainment areas with available same-day meteorological wind speed and wind direction. <u>See generally</u> TSD 3.0, at 3-7—3-10, JA321-24. Each

rose provides a visual indication of the predominant wind direction and speed on each PM_{2.5} sample day. The center of each rose represents the monitor location. Colored symbols (triangles and dots) depicting the 24-hour reported average PM_{2.5} concentrations are plotted around the monitor with their relative position denoting the 24-hour average resultant wind speed and direction.

EPA also used wind trajectories as a more refined consideration of the transport of PM_{2.5} and PM_{2.5} precursor emissions to violating monitors. See generally id. at 3-6—3-7, JA320-21. Using the National Oceanic and Atmospheric Administration's HYSPLIT trajectory model, EPA calculated wind trajectories backward in time from a violating monitor. The resulting "back trajectories" show the path air masses took on their way to a violating monitor.

IV. TECHNICAL BASIS FOR THE SALT LAKE CITY AREA'S NONATTAINMENT DESIGNATION

Petitioners challenge the inclusion of Box Elder and Tooele Counties within the Salt Lake City-Ogden-Clearfield CSA ("Salt Lake City") nonattainment area. Within this area, EPA designated Davis, Salt Lake, and Weber Counties because they violate the 24-hour PM_{2.5} NAAQS. EPA evaluated Box Elder, Tooele, and other counties in the CSA, to determine which counties contribute to violations in Davis, Salt Lake, and Weber. Based on its analysis, EPA concluded that the eastern portions of Box Elder and Tooele contribute to the area's nonattainment.

Salt Lake City's unique topography and meteorology – factors 6 and 7 in EPA's nine-factor analysis – were especially important factors for this area. High concentrations of PM_{2.5} and PM_{2.5} precursors occur during winter temperature inversions, which create a vertical barrier that traps PM_{2.5} in the area. TSD 4.8.2 at 40, JA468.³ At the same time, winter weather conditions produce ideal conditions for the formation of secondary PM_{2.5}. <u>Id.</u>

The topography essentially defines the area affected by high PM_{2.5} concentrations during the inversions. <u>Id.</u> at 47, JA475. The Wasatch Mountains mark the eastern boundary; the Great Salt Lake and the Oquirrh Mountains mark western boundaries. <u>Id.</u> at 48, JA476. The Promontory and North Promontory Mountains serve as a western airshed barrier in Box Elder, as do the Stansbury Mountains in Tooele. <u>Id.</u> The mountain ranges and the Great Salt Lake trap air and emissions within the low-lying areas and allow PM_{2.5} and PM_{2.5} precursors to build up during inversions. <u>See id.</u> at 47-48, JA475-76. The topography also has concentrated people and emissions sources in these low-lying areas. <u>Id.</u> at 48, JA476.

EPA's wind analysis showed that the "highest concentrations [of $PM_{2.5}$] were with light winds from the NW and SE directions and ... showed the highest

Under normal conditions, air temperature becomes cooler with altitude. Temperature inversions occur when areas of high pressure in the atmosphere create a warm layer that traps cooler air near the earth's surface.

monitored values with light wind speeds typically four miles per hour or less." <u>Id.</u> at 39, JA467. EPA concluded that "with very light wind speeds with both a northern and southern component, the [direct and secondary] emissions [of] PM_{2.5} [], oscillate along the entire Wasatch front region and are influenced by both the diurnal effects of the Great Salt Lake⁴ and extended periods of light to stagnant wind conditions." <u>See id.</u> at 39, JA467. In other words, during inversions, the stagnant air mass and light winds cause emissions to slosh back-and-forth within the contained airshed, in a northwesterly-southeasterly direction.

EPA concluded that the extreme topography and meteorology allow emissions from eastern Box Elder to mix with emissions oscillating along the Wasatch Front region and contribute to the Salt Lake City area's nonattainment.

Id. at 39-41, 53, JA467-69, JA481; see also Mem. from C. Roberts to 24-Hour PM_{2.5} Designations Dkt., Sept. 9, 2009 ("Sept. 9, 2009 Mem."), Index 703, at 5-6, JA987-88. EPA found "there is no physical impediment to the back and forth movement of air masses in this area as the area is essentially flat and also borders on the northern section of the Great Salt Lake." TSD 4.8.2 at 41, JA469; see also id. at 48, JA476. EPA found that eastern Tooele's emissions move out over the

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This refers to the daily flow of cold air that moves down toward the low point, the Great Salt Lake, from surrounding valleys at night, and flows up from this low point into surrounding valleys and urbanized areas as sunlight heats the ground during the day.

Lake and are "transported eastward . . ., with a NW wind component, to the Wasatch Front area and contribute to elevated concentrations of PM_{2.5}." <u>Id.</u> at 41, JA469; <u>see also id.</u> at 48, JA476. EPA confirmed its analysis using back trajectories, which showed some degree of transport from Box Elder and Tooele into the Salt Lake City and Ogden areas on days where the NAAQS were exceeded. Id. at 41-47 (Fig. A.3-5—A.3-10), JA469-75.

EPA's analysis of the first and second factors – emissions and air quality monitoring data – supported the conclusion that eastern Box Elder and Tooele contribute emissions to high PM_{2.5} concentrations in nearby areas. Box Elder and Tooele's total emissions each exceeded 15,000 tons per year (tpy), similar to nonattaining Weber County, and much higher than attainment counties Morgan, Summit, and Wasatch. Id. at 32 (Table A.3-2), JA460. Further, both Box Elder and Tooele generate emissions of direct PM_{2.5} and precursors that were particular problems for the area: Tooele had the second highest direct carbon emissions (id.); Box Elder had 33% of the total ammonia emissions (id.; Public Comment Doc., Index 671 at 164, JA936); Box Elder and Tooele emit 8% and 9%, respectively, of the total 5-county NOx emissions (Sept. 9, 2009 Mem. at 2, JA984).

Box Elder and Tooele's emissions sources were concentrated in the eastern third of these counties, while the western portions were "sparsely-inhabited desert areas." TSD 4.8.2 at 32, JA460. As a result, EPA considered only the eastern

third of these counties as candidates for contribution and EPA revised their contributing emissions scores accordingly, resulting in a CES of 7 for Box Elder and 2 for Tooele. <u>Id.</u> (Table A.3-2, n.1), JA460.⁵

Air quality data showed that although Box Elder and Tooele were not currently violating the 24-hour NAAQS, the areas were close to the 35 μg/m³ standard. Specifically, Box Elder's design values were 35 μg/m³ in 2004-2006 and 2006-2008; Tooele's design value was 31 μg/m³ in 2005-2007. Id. at 53, JA481; Supplemental TSD (Oct. 8, 2009), Index 675, at 2-12, JA973. Additionally, Box Elder showed significant daily exceedances of the 24-hour NAAQS and historically, Box Elder's design value exceeded 35 μg/m³.6 TSD 4.8.2 at 53, JA481; PM_{2.5} Design Values 1999-2001 to 2006-2008, Index 704, at 20, 35, 110, 185, 247, 331, 412, 497, 581, JA995-1003. Thus, EPA reasonably concluded that "these areas are subject to poor air quality at times, and it is likely that these high concentrations [of PM_{2.5}] contribute to violations in adjacent counties on days

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The CES calculation included a distance weighting, which accounts for decreasing emissions concentrations that occur as emissions move downwind and disperse. <u>Id.</u> Appx. H at 41, JA559. EPA adjusted the distance inputs for Box Elder and Tooele to account for the smaller size of these partial counties.

Because a "violation" of the 24-hour PM_{2.5} NAAQS is measured based on a three-year average of a monitor's 98th percentile values, an area may have some daily exceedances without actually violating the standard.

when winds blow from this direction towards the rest of this area, and contribute to area wide ambient levels during inversions." TSD 4.8.2 at 53, JA481.

Factors 3, 4, and 5 in the nine-factor analysis confirmed eastern Box Elder and Tooele's contribution to nonattainment. These partial counties had relatively high population densities, high percentages of commuters traveling to Salt Lake, Davis, and Weber, high projected population growth and growth in vehicle miles traveled ("VMT"). Id. at 34-39, JA462-67. Box Elder and Tooele are predicted to have growth increases of 22.3% and 61.4%, respectively, and accompanying sizeable increases in VMT. Id. at 37-38 (Tables A.3-6, A.3-7), JA465-66. These data demonstrate Box Elder and Tooele's emissions-generating potential and an integral connection to the urban area, both of which indicate contribution. See id.

Regarding jurisdictional boundaries (factor 8), the Salt Lake City area had no existing PM_{2.5} nonattainment areas. However, EPA concluded that the Utah Division of Air Quality ("Utah DAQ") and Utah Air Quality Board have statewide SIP planning and development authority to develop and implement control measures to address PM_{2.5} nonattainment issues throughout the Salt Lake City area. Id. at 52, JA480. EPA's analysis of the level of control of emissions sources (factor 9) was based on reductions already incorporated into the emissions data. Utah provided no information regarding additional substantial emissions reductions relevant to the area. Id.

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Based on its nine-factor evaluation and other information, EPA included eastern Box Elder and Tooele within the Salt Lake City nonattainment area.

STANDARD OF REVIEW

The Designations Rule is subject to judicial review under the APA, which provides that the Court may set aside any action found to be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). The court must affirm as long as EPA considered all relevant factors and articulated a "rational connection between the facts found and the choice made." Burlington Truck Lines v. United States, 371 U.S. 156, 168 (1962). While the court's inquiry is to be "searching and careful, [its] review is ultimately a narrow one." Maier v. EPA, 114 F.3d 1032, 1039 (10th Cir. 1997). The court will uphold agency action on the basis of even "a less-than-ideal explanation as long as the agency's decisionmaking process may reasonably be discerned." Ariz. Pub. Serv. Co. v. EPA, 562 F.3d 1116, 1123 (10th Cir. 2009). Where the petitioner's complaints reflect a mere difference in view from that of the agency, the agency action must be upheld. See id. at 1130-31.

A court's deference is "especially strong where the challenged decisions involve technical or scientific matters within the agency's area of expertise." <u>Utah Envtl. Congress v. Bosworth</u>, 443 F.3d 732, 739 (10th Cir. 2006) (citation omitted). Such deference is "especially appropriate in our review of EPA's

administration of the complicated provisions of the Clean Air Act." <u>Catawba</u>, 571 F.3d at 41 (citation omitted).

Questions of statutory interpretation are governed by the two-step test set forth in Chevron U.S.A. Inc. v. NRDC, Inc., 467 U.S. 837, 842-45 (1984). If the statute is clear, the court "'appl[ies] its plain meaning' and the inquiry ends." Ariz. Pub. Serv. Co., 562 F.3d at 1123 (citation omitted). If, however, the statute is silent or ambiguous, the court "defer[s] to the authorized agency and 'appl[ies] the agency's construction so long as it is a reasonable interpretation of the statute." Id. (citation omitted).

ARGUMENT SUMMARY

The Designations Rule represents EPA's coordinated rulemaking under CAA section 107(d)(1), 42 U.S.C. § 7407(d)(1), to designate areas nationwide under the 2006 24-Hour PM_{2.5} NAAQS. The designations are based on EPA's reasonable interpretation of the CAA and thorough and methodical analysis of information regarding each area. The Court should reject Petitioners' challenge to EPA's designation of eastern Box Elder and Tooele within the Salt Lake City nonattainment area for several reasons.

First, this Court lacks jurisdiction and should dismiss the petitions or transfer them to the D.C. Circuit. The Designations Rule is "nationally applicable," and contains EPA's express finding that the rule has "nationwide scope and effect."

Pursuant to section 307(b)(1), 42 U.S.C. § 7607(b)(1), such rules may only be reviewed in the D.C. Circuit. Additionally, the Court lacks jurisdiction over Petitioners' challenge to the Tooele County nonattainment designation because no petitioner has demonstrated standing to challenge this designation.

If this Court reaches the merits, however, the Court should reject the petitions because Petitioners fail to show that EPA's determinations regarding eastern Box Elder and Tooele are unreasonable or unsupported by the record.

Under the APA review standard, Petitioners have a high burden to demonstrate that EPA was arbitrary or failed to consider relevant facts. Because Petitioners challenge technical and scientific judgments within EPA's expertise, their burden is especially high.

Petitioners' first argument relies on an inappropriate comparison of Box Elder and Tooele with two east coast counties – Hartford, Connecticut and Warren, New Jersey. Petitioners fail to demonstrate how Box Elder and Tooele are similarly situated to Hartford and Warren. Most notably, Box Elder and Tooele are affected by the mountainous topography and wintertime meteorology absent from Hartford or Warren. The topography and meteorology define the area subject to high PM_{2.5} concentrations in the Salt Lake City area, including eastern Tooele and Box Elder, and support EPA's determination that these counties contribute to nearby PM_{2.5} violations. EPA applied its nine-factor contribution analysis and

other analytical factors consistently and Petitioners' criticisms rely on a selective and inaccurate reading of the record.

Petitioners' second and third arguments simply reflect their disagreements with EPA's technical and scientific judgments regarding meteorological and topographical data. Petitioners' arguments fail because EPA thoroughly analyzed the relevant wind data, topography, and other information relevant to Box Elder's contribution to nearby nonattainment areas and reasonably concluded that eastern Box Elder is subject to wind flow that would transport emissions of PM_{2.5} and PM_{2.5} precursors to violating monitors to the south-southeast of Box Elder. Further, the data support EPA's judgment that the Promontory Mountains form a topographic airshed barrier and thus are an appropriate western nonattainment boundary for Box Elder. Petitioners' mere disagreement with judgments within EPA's expertise is insufficient to invalidate EPA's reasoned conclusions.

ARGUMENT

I. THIS COURT LACKS JURISDICTION.

"[J]urisdiction is a threshold question which an appellate court must resolve before addressing the merits of the matter before it." Timpanogos Tribe v.

Conway, 286 F.3d 1195, 1201 (10th Cir. 2002) (citation omitted). The Court should not reach the merits here because Petitioners filed in the wrong court.

Pursuant to CAA section 307(b)(1), 42 U.S.C. § 7607(b)(1), "nationally

applicable" actions and actions EPA has found to have "nationwide scope or effect," such as the Designations Rule, may only be reviewed in the D.C. Circuit. Additionally, the Court lacks jurisdiction over petitions challenging the designation for portions of Tooele County because no petitioner has demonstrated standing to challenge this designation.

A. Section 307(b)(1) Limits Review of Nationally Significant Actions to the D.C. Circuit.

Under section 307(b)(1), final action under the CAA that is "nationally applicable" may be reviewed only in the D.C. Circuit. <u>Id.</u> Likewise, even an action that is in some aspects "locally or regionally applicable," may only be challenged in the D.C. Circuit "if such action is based on a determination of *nationwide scope or effect* and ... the [EPA] Administrator finds and publishes that such action is based on such a determination." Id. (emphasis added). The only

EPA raised this issue in its Motion to Dismiss or Transfer, filed December 23, 2009, and EPA's Motion for Reconsideration of the Court's February 19, 2010 Order Referring EPA's Motion to Dismiss or Transfer to the Merits Panel, filed March 5, 2010. On February 19, 2010, and March 29, 2010, the Court referred EPA's motion to the merits panel.

Petitioners failed to address jurisdiction in their opening brief, other than a cursory nod to the minimum procedural requirements of Fed. R. App. P. 28(a)(2)(4). Petitioners' failure is unfair to EPA and the Court. It deprives EPA the opportunity to respond to Petitioners' arguments on a threshold issue that EPA raised and Petitioners have the burden to establish. It deprives the Court of the benefit of having the arguments sharpened through briefing. See Headrick v. Rockwell Int'l Corp., 24 F.3d 1272, 1278 (10th Cir. 1994).

EPA actions under the CAA reviewable in a regional circuit are "locally or regionally applicable" actions that EPA has not determined to be of "nationwide scope or effect." <u>Id.</u>

Section 307(b)(1) reflects Congress's intent to create consistency and uniformity in interpretation and application of nationally applicable rules, especially in the context of technically complex statutes like the CAA.

Accordingly, all nationally significant actions, including "nationally applicable" actions and actions with "nationwide scope or effect," are subject to exclusive D.C. Circuit review.

Additionally, section 307(b)(1) delegates to *EPA* the task of identifying those locally or regionally applicable actions that have "nationwide scope or effect." Thus, if there is any question regarding the type of action at issue, EPA's "nationwide scope or effect" finding resolves it and the D.C. Circuit is the statutorily designated forum. As noted in section 307(b)(1)'s legislative history, "if an action of the Administrator is *found by [her]* to be based on a determination of nationwide scope or effect …, then *exclusive* venue for review is in the [D.C. Circuit]." H.R. Rep. No. 95-294, at 323-24 (1977), <u>reprinted in</u>, 1977 U.S.C.C.A.N. 1402-03 (emphasis added).

B. The Designations Rule Is "Nationally Applicable" and Has "Nationwide Scope or Effect" and Thus Review in the D.C. Circuit Is Exclusive.

On its face, the Designations Rule is "nationally applicable." The rule designates areas under the 24-hour PM_{2.5} NAAQS from Alabama to Wyoming, including the U.S. territories. 74 Fed. Reg. 58,701-81. At "the core of this rulemaking" is EPA's nationally applicable interpretation of "nonattainment" and other terms in section 107(d)(1), 42 U.S.C. § 7407(d)(1). <u>Id.</u> at 58,700, 58,693-94. Further, in making the designations, EPA applied a consistent analytical approach across the country. <u>Id.</u> at 58,700, 57,694-96 (explaining nine-factor analysis, "contributing emissions score," and other analytical tools).

For these same reasons, EPA expressly found that the Designations Rule is based on determinations of "nationwide scope or effect." 74 Fed. Reg. 58,700. It is well-settled that "where, as here, Congress has specifically designated a forum for judicial review of administrative action … that forum is exclusive." Anaconda Co. v. Ruckelshaus, 482 F.2d 1301, 1304-05 (10th Cir. 1973). Accordingly, the D.C. Circuit is the exclusive forum for the petitions.

That Petitioners claim their arguments are limited to the impact of the rule on Box Elder and Tooele Counties is irrelevant for purposes of section 307(b)(1). Jurisdiction under section 307(b)(1) turns on the nature of the agency action, and not the issues particular petitioners might raise. Indeed, Petitioners' position runs

counter to <u>Natural Resources Defense Council v. Thomas</u>, 838 F.2d 1224 (D.C. Cir. 1988) ("<u>NRDC"</u>), which expressly rejected the notion that classification of EPA action as nationally or locally applicable could turn on the de facto scope of the action. <u>See also Am. Petroleum Inst. v. EPA</u>, No. 09-1085, slip op. at 2 (D.C. Cir. Mar. 15, 2010) (reaffirming <u>NRDC</u>).

NRDC, 838 F.2d at 1249, involved a challenge to EPA's decision not to exempt previously compliant sources that happened to be located in certain areas from demonstrating compliance with new source requirements. The court found that whatever the distribution of affected sources, the "nationwide scope of the regulation is controlling." Id. Similarly, the nationwide scope of the Designations Rule is what matters under section 307(b)(1), not the local incidence of any one designation.

Petitioners' view is contrary to section 307(b)(1). To conclude that the "nationwide scope or effect" of a rule should be viewed in retrospect based on what parties challenge the rule or the purported scope of their challenge would render section 307(b) largely meaningless because every national CAA rule has localized effects. Moreover, Petitioners' interpretation undermines the consistency and uniformity contemplated by section 307(b)(1), and would lead to duplicative litigation and protracted disputes regarding the appropriate court for review of actions EPA properly classified as having "nationwide scope or effect." See id.

("If the jurisdictional provision turns on the de facto scope of the regulation, choice of the correct forum might raise complex factual and line-drawing problems.").

Given EPA's "unambiguous" finding that the Designations Rule has "nationwide scope and effect," section 307(b)(1) limits review to the D.C. Circuit. Alcoa, Inc. v. EPA, No. 04-1189, 2004 WL 2713116, at *1 (D.C. Cir. Nov. 24, 2004) (per curium) (order denying motion to transfer given EPA's "nationwide scope and effect" finding). Cases suggesting petitioners may challenge "local" aspects of a nationwide rule in the regional circuit are therefore inapposite.⁸ Petitioners provide no basis for this Court to second-guess EPA's "nationwide" scope or effect" finding. Congress clearly delegated the task of making a "nationwide scope or effect" finding to EPA, not to Petitioners, and not to a court. Cf. Sierra Club v. Leavitt, 368 F.3d 1300, 1308 n.12 (11th Cir. 2004) (it is for "EPA, not th[e] Court, to judge whether EPA has made a determination of nationwide scope"). Congress's explicit delegation to EPA demonstrates Congress's intent to avoid protracted jurisdictional disputes by relying on EPA's expertise and familiarity with the rules it promulgates.

Indeed, section 307(b)(1) suggests EPA's "nationwide scope or effect" finding is "committed to agency discretion by law" and thus unreviewable under the APA, 5 U.S.C. § 701(a)(2). An action is committed to agency discretion "if the

⁸ E.g., Western Oil & Gas Ass'n v. EPA, 633 F.2d 803 (9th Cir. 1980).

statute is drawn so that a court could have no meaningful standard against which to judge the agency's exercise of discretion." Heckler v. Chaney, 470 U.S. 821, 830 (1985); Sierra Club v. Yeutter, 911 F.2d 1405, 1411 (10th Cir. 1990). Section 307(b)(1) neither defines "nationwide scope or effect" nor identifies the factors relevant to such findings. Further, because a "nationwide scope or effect" finding requires the agency to determine the nature of its own action, it is inherently an administrative, as opposed to judicial, act. As the agency charged with administering the CAA, EPA is "far better equipped" than a court to determine whether an action has "nationwide scope or effect." See Chaney, 470 U.S. at 831. Even if EPA's "nationwide scope or effect" finding is reviewable, for the reasons already explained, EPA's finding that the Designations Rule has "nationwide scope and effect" is, at the very least, a reasonable interpretation of the statute that is entitled to deference under Chevron, 467 U.S. at 842-45. See supra 27-28.

That EPA considered the particular facts and circumstances of each nonattainment area does not diminish the nationwide character of the rule. The rule reflects EPA's uniform interpretation of section 107(d)(1) and relies on an analytical approach that EPA applied consistently across the country. EPA need not adopt a bright-line or numerical standard for its interpretation to be uniform

Of course, if Petitioners challenge EPA's "nationwide scope and effect" finding, they were required to raise those arguments in their opening brief. Having failed to do so, such arguments are waived. Headrick, 24 F.3d at 1277-78.

and consistent. <u>See Catawba</u>, 571 F.3d at 39-40, 46 (upholding EPA's totality-of-the-circumstances test as a reasonable interpretation of section 107(d) and finding EPA consistently applied that interpretation).

Petitioners' merits argument that EPA's Box Elder and Tooele designations are inconsistent with two east coast counties (Pet. Br. 25-55) implicitly challenges EPA's case-by-case, weight-of-the-evidence approach, attacking the heart of EPA's nationwide interpretation of "contribute" in section 107(d)(1). Similarly, Petitioners' criticisms of EPA's use of the CES, pollution roses, back trajectories and other analytical tools attack EPA's nationwide approach. Section 307(b)(1) directs challenges of such nationwide action to the D.C. Circuit.

In fact, petitions for review of EPA's 1997 PM_{2.5} Designations Rule were consolidated in the D.C. Circuit, even though the petitioners challenged individual area designations. <u>Catawba</u>, 571 F.3d at 20. Notably, the Seventh Circuit summarily rejected an attempt by one <u>Catawba</u> petitioner to bring a separate challenge to the designations in that court. <u>Dynegy Midwest Generation v. EPA</u>, No. 05-1536, slip op. (7th Cir. May 26, 2005).

EPA is unaware of any case invalidating an EPA "nationwide scope or effect" determination. EPA's "nationwide scope and effect" determination in this

case is reasonable and more than sufficient for section 307(b)(1). Accordingly, the Court should dismiss the petitions or transfer them to the D.C. Circuit. ¹⁰

C. Local Government Petitioners Have Not Demonstrated Article III Standing to Challenge the Designation for Eastern Tooele.

The local government petitioners' standing is not self-evident, nor is it evident from Petitioners' brief. Unlike Petitioner ATK, which may become subject to more stringent "New Source Review" permitting requirements upon a nonattainment designation, or the State and its designated air quality planning bodies, which acquire additional SIP responsibilities upon a nonattainment designation, the local governments do not appear to be the "object" of the Designations Rule. Further, the local governments have not alleged any concrete, particularized injury specific to them as a result of the Designations Rule.

The local government petitioners based their standing entirely on claims that an area's nonattainment status may discourage local businesses from locating or expanding in a nonattainment area and make it more difficult to get federal transportation funds. Pets. Br. 22-23. These speculative and conclusory assertions

Petitioners' D.C. Circuit petitions are stayed pending this Court's decision regarding jurisdiction. <u>ATK Launch Sys., Inc. v. EPA</u>, No. 10-1004, et al (D.C. Cir.). Therefore, it makes little practical difference whether the instant petitions are dismissed or transferred. EPA believes dismissal is the proper remedy because Petitioners' failure to file in the proper court presents a jurisdictional defect. However, EPA also recognizes that the D.C. Circuit itself characterized issues such as "venue" as not jurisdictional, making transfer appropriate. <u>See Tex. Mun.</u> Power Agency v. EPA, 89 F.3d 858, 867 (D.C. Cir. 1996).

are insufficient to carry Petitioners' burden of demonstrating their Article III standing purposes. First, any economic disadvantage to local governments is derivative of an injury to the local businesses and thus is essentially a parens patriae argument unavailable to local governments in suits against the federal government. See Wyoming v. Lujan, 969 F.2d 877, 882-83 (10th Cir. 1992); see also, e.g., Ctr. for Biological Diversity v. DOI, 563 F.3d 466, 477 (D.C. Cir. 2009). Second, any loss of local revenue or federal transportation funding are dependent upon the actions of third parties (i.e., the businesses moving elsewhere or the state's allocation of transportation funding) and therefore are insufficient for Article III standing purposes. Third, these arguments are speculative and unsupported by any concrete evidence presented by Petitioners.

While courts may decline to examine the standing of each petitioner, once at least one petitioner has established standing, see, e.g., Massachusetts v. EPA, 549 U.S. 497, 516-18 (2007), Article III requires a party with standing for each particular claim. Donahue v. Boston, 304 F.3d 110, 115-16 (1st Cir. 2002) (citing Adarand Constructors, Inc. v. Pena, 515 U.S. 200, 210-11 (1995)). Petitioner ATK may have standing to challenge eastern Box Elder's nonattainment designation, but it would lack standing to challenge eastern Tooele's nonattainment designation.

Because the local governments have not demonstrated standing to challenge the eastern Tooele designation, the Court lacks jurisdiction over that claim.

II. EPA APPLIED ITS WEIGHT-OF-THE-EVIDENCE APPROACH NATIONWIDE AND PETITIONERS' SELECTIVE COMPARISON OF DISSIMILAR COUNTIES DOES NOT ESTABLISH ANY INCONSISTENCY.

Petitioners' first argument is that EPA's treatment of Box Elder and Tooele Counties is inconsistent with EPA's treatment of Hartford and Warren Counties because EPA allegedly applied different standards to Box Elder and Tooele. Petitioners take this line of attack from the previous PM_{2.5} designations litigation, Catawba, 571 F.3d at 46. This argument was largely unsuccessful in Catawba, and Petitioners here fare no better.

In <u>Catawba</u>, 571 F.3d at 46, the D.C. Circuit generally upheld EPA designations under the 1997 PM_{2.5} NAAQS, finding that regarding EPA's approach as a whole and all individual counties challenged save one, EPA consistently applied its nine-factor test and adequately explained its decisions based on record evidence. The court remanded EPA's determination with regard to Rockland County, New York because the court found that EPA treated it differently than other counties in the same metropolitan area. <u>Id.</u> at 51. This case does not fit the anomalous circumstances of Rockland County. Box Elder and Tooele are not similarly situated to Warren and Hartford – they are not in the same metropolitan area or even in the same geographic region of the country. Further, Petitioners fail to show that EPA applied different standards to Box Elder and

Tooele. To the contrary, EPA reasonably and consistently applied the nine factors to Box Elder and Tooele.

A. EPA Used a Weight-of-the-Evidence Test that Applied the Same Factors Nationwide and Did Not Rely on Any Bright-Line Tests or Numerical Standards.

Petitioners fundamentally misunderstand and mischaracterize EPA's approach to determining what areas "contribute" to nonattainment in nearby areas under section 107(d)(1). EPA did not interpret "contribute" to require a bright-line test or threshold for any factor or analytical tool, such as the contributing emissions score. 74 Fed. Reg. 58,693. Nor did EPA interpret "contribute" to mean "cause," because doing so would "require a degree of certainty and precision that is inherently unreasonable for evaluating violations that result from the impact of many different sources of PM_{2.5} and PM_{2.5} precursors" and would undermine the purpose of designations. Id. at 58,694. Similarly, EPA did not interpret "contribute" to mean "significantly contribute" or otherwise attempt to quantify the level of contribution necessary for "nonattainment." Id. Rather, EPA concluded an "assessment of the 'causation' and 'materiality' of contribution ... is best accomplished through a more careful evaluation of the relevant information on an area-by-area basis." Id.

EPA found a case-by-case approach especially appropriate for $PM_{2.5}$ in light of the multiple precursors, numerous sources, meteorological considerations, and

need to distinguish between impacts of local and non-local sources at any given violating monitor. <u>Id.</u> 58,693. Accordingly, EPA applied a "weight-of-the-evidence" approach to all areas, considering information related to nine factors and any other relevant information. <u>See, e.g.</u>, TSD 4.8.2 at 23, JA451; TSD 4.2.1, Index 587, at 2, JA364; TSD 4.1.1, Index 586, at 1-2, JA328-29. The factors are open-ended, recognizing that the data for each area of the country could vary and not all factors would be equally relevant in each area. 74 Fed. Reg. 58,695.

The D.C. Circuit upheld EPA's interpretation of "contribute" in <u>Catawba</u>, noting an "agency is free to adopt a totality-of-the-circumstances test to implement a statute that ... lacks a definite 'threshold' or 'clear line of demarcation to define an open-ended term." 571 F.3d 38-39 (citation omitted). The court further found EPA reasonably interpreted "contribute" to mean "sufficiently contribute" as determined by EPA's nine-factor test. <u>Id.</u>

EPA expressly adopted the same approach approved in <u>Catawba</u> for the 2006 24-hour PM_{2.5} designations. 74 Fed. Reg. 58,691 n.4. Because EPA did not reopen these issues in the Designations Rule at issue here, Petitioners may only challenge EPA's contribution analysis as applied. Petitioners fail to show that EPA inconsistently applied its approach or any one factor to Box Elder and Tooele as compared to other areas.

B. Box Elder and Tooele Are Not Similar to Hartford and Warren, and EPA's Differing Conclusions Regarding Box Elder and Tooele Are Rational in Light of the Record Evidence.

Petitioners' contention that EPA inconsistently applied its nine-factor analysis to Box Elder and Tooele as compared to Hartford and Warren fails because Hartford and Warren *are not remotely similar* to Box Elder and Tooele. "It is incumbent on a party complaining of inconsistency in administrative action 'to bring before the reviewing court sufficient particulars of how the [petitioner] was situated." South Shore Hosp., Inc. v. Thompson, 308 F.3d 91, 102-03 (1st Cir. 2002) (citation omitted). Petitioners fail to show that Box Elder and Tooele are similarly situated to Hartford and Warren; indeed, they ignore important differences in the record evidence.

Box Elder and Tooele's nonattainment designations are based on their contribution to the Salt Lake City nonattainment area. Salt Lake's PM_{2.5} problem is attributable to the area's unique topography and meteorology. The area experiences winter temperature inversions that prevent emissions from escaping vertically into the atmosphere. TSD 4.8.2 at 40, JA468. Additionally, large mountain ranges prevent emissions from dispersing horizontally. <u>Id.</u> at 40-41, 47-48, JA468-69, 475-76. Thus, during wintertime inversions, which can last up to 21 days, emissions become trapped within the airshed defined by the mountains and the Great Salt Lake, allowing PM_{2.5} concentrations to build. <u>Id.</u> During

inversions, emissions from eastern Box Elder and Tooele mix with high $PM_{2.5}$ concentrations in the area and contribute to $PM_{2.5}$ violations. <u>Id.</u> at 41, 48, JA469, JA476.

Hartford and Warren do not experience the same topographical or meteorological conditions that influence PM_{2.5} in the Salt Lake City area. Hartford is near the New York nonattainment area and Warren is near the New York and Allentown, Pennsylvania nonattainment areas. Both are low-lying areas, with **no** topographical barriers relevant to the build-up or transport of PM_{2.5} concentrations. TSD 4.1.1 at 19, JA346, & 4.2.1 at 18, JA380. Neither Hartford nor Warren has severe and prolonged winter temperature inversions that trap emissions in the airshed; rather, these areas have exceedances throughout the year. The nature of the PM_{2.5} problem in the relevant New York and Allentown areas is influenced more by high population and population density, mobile source emissions, and the impact of large power plants and other point sources of PM_{2.5} and PM_{2.5} precursors (primarily sulfates and nitrates).¹¹ Additionally, areas in the eastern United States experience more regional PM_{2.5} pollution, unlike the virtual island of PM_{2.5} pollution in the Salt Lake City area.

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Warren also is distinguishable from Box Elder and Tooele because New Jersey recommended that Warren be designated nonattainment due to air quality impacts Warren experiences as a result of emissions transported from the west, and not because of Warren's contribution to violations elsewhere. TSD 4.2.1 at 3-4, JA365-66.

Petitioners erroneously "seize upon discrete data points and ignore the very nature of the nine-factor test, which is designed to analyze a wide variety of data on a 'case-by-case basis,'" Catawba, 571 F.3d at 46. "EPA's holistic assessment of numerous factors ... drives the process--no single factor determines a particular designation." Catawba, 571 F.3d at 46. EPA concluded that eastern Box Elder and Tooele are contributing areas based on all of the relevant information, including "traffic and commuting, growth, meteorology, topography, and emissions." TSD 4.8.2 at 53, JA481. Viewed in context, under the weight-of-the evidence standard applied by EPA, Box Elder and Tooele's nonattainment designations are reasonable, supported by the record, and do not reflect any inconsistencies with how EPA applied the nine factors elsewhere.

1. Geography/Topography

Topography was an important factor in EPA's contribution analysis for the Salt Lake City area (including Box Elder and Tooele). Winter temperature inversions trap emissions in low-lying areas and the "high terrain areas surrounding the air mass and exceeding the mixing height act to essentially define its boundaries." TSD 4.8.2 at 47, JA475. Additionally, EPA found that the Promontory Mountains and North Promontory Mountains act as a western airshed barrier for eastern Box Elder, as do the Stansbury Mountains for eastern Tooele. Id. at 47-49, JA475-77.

Not only does the topography create barriers to movement of air and emissions, it also determines where the population is located. Id. at 48, JA476. These populations generate emissions that contribute to area-wide PM_{2.5} concentrations. Id. EPA concluded that the more populated eastern portions of Box Elder and Tooele are within the airshed defined by the mountainous terrain and that there are no topographical barriers between eastern Box Elder that would prevent its emissions from transporting to violating areas. <u>Id.</u> EPA found that although the Oquirrh Mountains form a partial separation on the eastern side of Tooele, emissions from eastern Tooele travel over the Great Salt Lake and are carried eastward by light winds over the Lake, contributing to high PM_{2.5} concentrations along the Wasatch Front. Id. Thus, the topography, along with EPA's analysis of meteorology and other factors, supports the conclusion that eastern Box Elder and Tooele contribute to nonattainment in nearby areas.

Against this backdrop, Petitioners' assertion that topography is "neutral and should not play a significant role in deciding whether Box Elder or Tooele Counties contribute to violations in counties along the Wasatch Front" is absurd.

See Pets. Br. 47. EPA did not conclude that eastern Box Elder and Tooele contribute to nonattainment in the Salt Lake City area strictly because they are in the same airshed as violating monitors. See id. EPA concluded that emissions from eastern Box Elder and Tooele contribute to violations in nearby counties

based on, among other reasons, the unique characteristics of that airshed: namely, that the topography and meteorology trap $PM_{2.5}$ emissions within the airshed, preventing vertical or horizontal dispersion.¹²

For these same reasons, Petitioners' comparison of Box Elder and Tooele's topography to Hartford and Warren's topography is illogical. Hartford and Warren have no "geographical or topographical barriers significantly limiting air pollution transport within [their respective] airshed[s]." TSD 4.1.1 at 19, JA346, and 4.2.1 at 18, JA380. This is unlike Box Elder and Tooele, which are partially located within an airshed that is surrounded by mountain ranges that trap emissions within the airshed. In the context of a closed airshed, the fact that there are no topographical barriers between Box Elder and nearby nonattainment areas has very different significance. On this basis alone, the Court should reject any arguments comparing Box Elder and Tooele to Hartford and Warren.

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Petitioners' assertion that "the core issue" is whether Box Elder and Tooele emissions are being transported to violating monitors along the Wasatch Front (Pets. Br. 47) erroneously assumes "contribute" means "cause." See supra Part II.A. "Given that the statute uses the word 'contribute' and that a contribution may simply exacerbate a problem rather than cause it," Catawba, 571 F.3d at 39, EPA reasonably concluded that sufficient mixing of Box Elder and Tooele emissions with emissions generated elsewhere in the airshed contribute to PM_{2.5} violations within the airshed. TSD 4.8.2 at 53, JA481.

2. Meteorology (Weather/Transport Patterns)

EPA's analysis of meteorology, including wind data, was another important factor related to eastern Box Elder and Tooele's contribution to violations in nearby counties along the Wasatch Front. EPA found that the highest concentrations of PM_{2.5} were with light winds from the NW and SE directions with wind speeds of four miles per hour or less. TSD 4.8.2 at 39, JA467. EPA concluded that emissions oscillate along the entire Wasatch Front region and are influenced by the diurnal effects of the Great Salt Lake and extended periods of light-to-stagnant wind conditions. Id. Specifically, EPA concluded that the wind data related to violating monitors in Weber, Davis, and Salt Lake showed some component of the high PM_{2.5} values originates from eastern Box Elder and Tooele. Id.; see also id. at 41, JA469.

Petitioners' reliance on the Box Elder (Brigham City) pollution rose (Pets. Br. 43) is misplaced because it does not tell the whole story. The Box Elder rose shows that on five days when the Brigham City monitor showed exceedances, the wind was from the southeast. TSD 4.8.2 at 82 (top), 83 (bottom), JA510-11. However, the Box Elder rose does not show where the wind was coming from on days when there were exceedances at other monitors in nearby areas. The Salt Lake and Davis pollution roses, for example, show a prevailing NW and SE wind pattern, supporting EPA's conclusion that for some of the time a northwesterly

wind transports Box Elder's $PM_{2.5}$ emissions to nearby nonattainment areas. <u>Id.</u> at 39, 83 (bottom) – 86, JA467, JA511-14; <u>see infra</u> 57-60.

Petitioners' criticisms of EPA's analysis for Tooele are also flawed. EPA explained that no physical barriers, including the Oquirrh Mountains, impede the flow of emissions from eastern Tooele out over the Lake, where they are transported eastward with a NW wind to violating monitors along the Wasatch Front. Id. at 41, JA469. Further, because the inversions can last up to 21 days, even light winds can transport emissions from Box Elder and Tooele to violating monitors. See infra 65. 13

Petitioners fail to show EPA acted inconsistently regarding Hartford and Warren. Regarding the Salt Lake City area, EPA found prevailing winds oscillated NW and SE in a diurnal pattern, causing emissions to oscillate along the entire region. EPA found no similar oscillating wind pattern in Hartford and Warren. To the contrary, on high PM_{2.5} days in the New York City area, the prevailing wind was from the south-southwest, not the direction of Hartford. TSD 4.1.1 at 18-19, JA345-46. Similarly, on high PM_{2.5} days in Allentown, the prevailing wind was

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Petitioners' attempt to discredit EPA's wind analysis based on Utah's criticisms of the back trajectory model is disingenuous and unavailing. Pets. Br. 49-50 n.11. While EPA recognized the model may not be useful for *some* applications, EPA concluded it was accurate enough to demonstrate gross air movement and therefore helpful in the contribution analysis. State Comment Doc. at 188, JA754. Further, EPA validated the model results using actual wind data gathered from Utah's monitoring system. <u>Id.</u>; <u>see infra</u> 56-57.

from the south-southwest and not from the direction of Warren. TSD 4.2.1 at 17-18, JA379-80.

Therefore, Petitioners' argument that EPA used an "any influence" standard to determine contribution from Box Elder and Tooele and required more than that in Hartford and Warren (Pets. Br. 46) lacks merit. EPA's determination that emissions from Box Elder and Tooele contribute to violating counties was based on evidence of the prevailing wind flow and not simply "any influence."

3. Emissions Data

The emissions data support EPA's conclusion that eastern Box Elder and Tooele are contributing areas. Considering all of the emissions data reveals that Box Elder and Tooele each has total emissions of over 15,000 tpy (including direct PM_{2.5} ("PM_{2.5} total") + precursor emissions (SO_x, NO_x, VOCs, and NH₃)), which is similar to that of Weber (designated nonattainment), and two to three times higher than Summit, Morgan, and Wasatch (designated attainment). TSD 4.8.2 at 32 (Table A.3-2), JA460. Additionally, Box Elder and Tooele emit significant amounts of direct and precursor PM_{2.5} emissions EPA noted as problematic for the area: Tooele has the second highest direct carbon emissions for the area (<u>id.</u>); Box Elder emits 33% of the area's total ammonia emissions (Public Comment Doc., Index 671, at 164, JA936); and Box Elder and Tooele have 8% and 9%,

respectively, of the total 5-county NO_x emissions (Sept. 9, 2009 Mem. at 2, JA984).

The emissions data for Hartford and Warren show no inconsistency. Warren has low emissions relative to other counties in the Allentown metropolitan area, particularly for NO_x , SO_2 , and direct $PM_{2.5}$, which EPA identified as sources of the $PM_{2.5}$ violations in that area. TSD 4.2.1 at 5, 7, JA367, JA369. Warren also has a low-ranking CES of 12 relative to other counties in the area, which is consistent with the low emissions data. <u>Id.</u> at 6, JA368. Further, as noted, the prevailing wind on high $PM_{2.5}$ days in the Allentown metropolitan area was in the opposite direction of Warren. <u>Id.</u> at 17-18, JA379-80.

EPA's contribution analysis for Hartford was influenced less by emissions data and more by Hartford's relatively low-ranking CES score and other factors. Hartford's CES (12) was the third lowest in an area with numerous other counties, "indicat[ing] a low potential for [Hartford] to contribute significantly to PM_{2.5} levels at violating monitors." TSD 4.1.1 at 5, JA332. However, EPA's statement does not indicate that EPA adopted a "significant contribution" standard for Hartford or any other area. See supra Part II.A. ¹⁴ EPA used the phrase here to

In fact, EPA distinguished the section 107(d)(1) contribution standard from the "contribute significantly" standard used in connection with 42 U.S.C. §§ 7410(a)(2)(D) and 7426, relating to regional interstate pollutant transport. See 74 Fed. Reg. 58,691-92.

describe data relative to one factor in one area. EPA did not intend the CES scores to be outcome determinative, nor did EPA treat them that way in Hartford or elsewhere. 74 Fed. Reg. 58,695. Other factors influenced EPA's conclusion that Hartford does not contribute to nearby areas. Violations in the New York area are influenced by a prevailing wind from the southwest, not from the direction of Hartford. TSD 4.1.1 at 18, JA345. Hartford is subject to the same prevailing wind from the southwest, indicating that Hartford's design value is influenced more by upwind sources and that its emissions do not contribute to nonattainment in downwind counties. Id.

Nor does EPA's comment response that "any score greater than zero would indicate contribution" mean that EPA applied different standards to the Salt Lake City area. Pets. Br. 29 (citing Public Comment Doc. at 163). Whether Box Elder or any other county was designated nonattainment depends on EPA's analysis of all nine factors and not just the CES score. "There is also no magnitude threshold which dictates that a particular county would be considered to be in or out of a nonattainment area. The CES simply highlights nearby counties that contribute to

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Petitioners mischaracterize EPA, arguing EPA used the CES to reflect the "relative maximum influence that emissions in that county have on a violating county." Pet. Br. 28. Read in context, the quoted statement clarifies how EPA ranked counties with multiple CES related to multiple violating monitors and does not imply EPA used the CES as a bright-line test for contribution. TSD Appx. H at 42, JA560.

the violations and provides information along with data and analyses from the nine factors." Public Comment Doc. at 163, JA935.

EPA ultimately did not place much weight on CES in the Salt Lake City area due to limitations the CES has in the western United States. Specifically, the CES can be inaccurate in large counties with densely populated areas or large rural areas, like Box Elder and Tooele. TSD Appx. H at 9, JA527. The CES also cannot adequately account for the effects of mountainous terrain that might split a county in two, like the Promontory Mountains in Box Elder. <u>Id.</u> at 9-10, JA527-28.

Petitioners concede CES only "provide a *relative ranking of counties in and near an area.*" Pets. Br. 27 (emphasis added). Thus, the CES "does not provide a reliable means for comparison between counties in different areas." 74 Fed. Reg. 58,695 n.16; cf. Catawba, 571 F.3d at 47 (weighted emissions scores cannot be used to compare emissions levels between counties in different metropolitan areas). That Hartford's numerical score (14) is higher than Tooele's (2) and Box Elder's (7) is irrelevant because Hartford is in a different metropolitan area and the CES model incorporates different data than the Salt Lake City model. ¹⁶

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Petitioners' mistakenly argue that EPA changed the CES inputs for Salt Lake City without providing notice. Pets. Br. 27. EPA explained in a footnote that Box Elder and Tooele's revised CES scores "represent data from the eastern areas" of these counties and provided the longitude coordinate for the partial county

4. Air Quality Data

The air quality data support EPA's conclusion that eastern Box Elder and Tooele contribute to violations in nearby areas, even though these areas do not violate the 24-hour PM_{2.5} NAAQS. Both counties had design values close to the 35 μg/m³ standard. TSD 4.8.2 at 33 (Table A.3-3), JA461 (Box Elder: 35, 29; Tooele: 31). Additionally, Box Elder had significant daily exceedances of the 24hour PM_{2.5} NAAQS, and, historically, for 2000-2002, 2001-2003, and 2002-2004, Box Elder had design values that would have violated the standard. TSD 4.8.2 at 53, JA481; PM_{2.5} Design Values 1999-2001 to 2006-2008, at 20, 35, 110, 185, 247, 331, 412, 497, 581, JA995-1003. Further, data for 2008 showed Box Elder's design value moving upward. PM_{2.5} Design Values 1999-2001 to 2006-2008, at 20, 35, JA995-96. These data show that Box Elder and Tooele are subject to poor air quality and, with other factors, support EPA's conclusion that Box Elder and Tooele contribute to high PM_{2.5} concentrations area-wide. TSD 4.8.2 at 53, JA481.

That Warren and Hartford's design values (34 and 32 respectively) are higher than Box Elder's (29) and Tooele's (31) proves nothing about Box Elder and Tooele's contribution to violations in the Salt Lake City area. Rather, Hartford and Warren's design values illustrate that EPA did not apply any bright-line tests

calculation. TSD 4.8.2 at 32, JA527. Moreover, EPA was not required to undertake notice-and-comment on the rule. 42 U.S.C. § 7407(d)(2)(B); <u>Catawba</u>, 571 F.3d at 32.

or consider any factor in isolation. Other New York counties with design values similar to Box Elder and Tooele (e.g., Orange (29) and Suffolk (30)) were designated nonattainment. TSD 4.1.1 at 6 (Table 2), JA333. EPA concluded that Warren and Hartford did not contribute to nearby violations, notwithstanding their design values, because, among other reasons, wind data showed that these areas were downwind from the violating monitors most of the time, which was not the case in Box Elder and Tooele where oscillating wind patterns and a closed airshed cause emissions to slosh back-and-forth within the airshed.

5. Population and Urbanization

EPA reasonably concluded that eastern Box Elder and Tooele had "relatively high population densities" based on the available data. TSD 4.8.2 at 34, JA462. Western Box Elder and Tooele are largely unpopulated, and thus the county-wide population density does not reflect the concentration and location of emissions sources, which is relevant to the contribution analysis. See id. at 34, JA462. Box Elder's "county-wide emissions, concentrated in the eastern 1/3 of the county ... justify a partial county designation of nonattainment." Public Comment Doc. at 165, JA937. EPA's interpretation of the density data, given that only part of these very large counties actually contributes emissions, was not arbitrary or unreasonable. To the contrary, it would have been unreasonable for EPA to exclude an area, such as eastern Box Elder, that contributes emissions to violations

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in nearby counties simply because other parts of the same county are largely unpopulated and lack emissions sources.

Petitioners' comparison of Box Elder and Tooele to Hartford and Warren merely show that Hartford and Warren are more densely populated than Box Elder and Tooele. This is not surprising given that Box Elder (6,729 sq. mi.) and Tooele (7,287 sq. mi.) are many times larger than any eastern county and some states (e.g., Connecticut (5,543 sq. mi.)). Moreover, the New York metropolitan area is much more densely populated than the Salt Lake City area. Compare TSD 4.1.1 at 9-10 (Table 3), JA336-37, with id. 4.8.2 at 34 (Table A.3-4), JA462. Nonetheless, Salt Lake City's design values (49, 55) are much higher than New York's (39). TSD 4.8.2 at 33 (Table A.3-3), JA461; id. 4.1.1 at 6 (Table 2), JA333. Thus, population density is relative and there is no threshold population or population density that demonstrates contribution.

6. Traffic and Commuting Patterns

The traffic and commuting data, when viewed in combination with other factors, supports EPA's finding that eastern Box Elder and Tooele contribute to nonattainment in nearby counties. Petitioners do not dispute that Box Elder and Tooele have high percentages of commuters. TSD 4.8.2 at 36-37, JA464-65. EPA considered the commuting data in combination with data from factor 5, showing "significant predicted growth in both population and *VMT* for Box Elder and

Tooele." State Comment Doc., Index 670, at 190, JA756. EPA noted that commuting VMT contributes to violations in nearby counties because the overall VMT and associated emissions contributes to concentrations of PM_{2.5} and precursors in the airshed. <u>Id.</u> In other words, the data reflected more than just contribution from commuters into the violating areas; the commuting and VMT data was indicative of additional emissions in Box Elder and Tooele that could be transported to violating nearby areas. <u>See id.</u>

Petitioners argue that Box Elder and Tooele have higher percentages of commuters than Warren (designated attainment), but lower percentages than Hartford (also designated attainment). Pets. Br. 34. This demonstrates that a comparison of counties in different metropolitan areas, divorced from other relevant factors, is meaningless. Nor does EPA's reliance on percentages as compared to whole numbers reflect any inconsistency.¹⁷ EPA interpreted the relevant data based on the facts, which is exactly what is contemplated by the weight-of-the evidence standard.

Petitioners' hypothetical comparison of a county with 1 commuter versus a county with 25,000 commuters (Pets. Br. 36) is irrelevant because it is inconsistent with the facts and assumes that EPA only considered commuters who travelled outside of Box Elder and Tooele.

7. Population Growth and VMT

EPA reasonably concluded that population growth and VMT growth are additional factors indicating contribution from eastern Box Elder and Tooele. The data predicted that Box Elder and Tooele would have large percentage changes in population growth (22.3% and 61.4% from 2010 to 2015), with accompanying sizeable increases in VMT. TSD 4.8.2 at 37-38, JA465-66. Petitioners concede that rapid population and VMT growth indicate an area is integrally connected to an urban area and is likely to contribute PM_{2.5} concentrations in the area. Pets. Br. 37; TSD 4.8.2 at 37, JA465. Petitioners provide no support for their opinion that the population growth projections, which were provided by Utah, were "speculative." Pets. Br. 38.

Moreover, EPA's consideration of population and VMT growth projections for 2010 and 2015 for Box Elder and Tooele, but not for Hartford and Warren, does not show EPA was arbitrary or inconsistent. In both cases, EPA relied on the best data available. The nine factors are intentionally open-ended so that EPA may consider all relevant data for an area.

8. Jurisdictional Boundaries

This factor considers information such as preexisting $PM_{2.5}$ nonattainment area boundaries and the extent to which such boundaries and organizations "may facilitate air quality planning and the implementation of control measures to attain

the standard." TSD 4.8.2 at 52, JA480. EPA concluded that although the Salt Lake City area had no previous PM_{2.5} nonattainment designations, planning and control measures can be implemented in a cohesive manner by the Utah DAQ and Utah Air Quality Board, which have *state-wide* planning and SIP development authority. <u>Id.</u> Petitioners fail to show how this factor does not support EPA's determination.

* * *

As demonstrated above, Petitioners fail to show EPA acted inconsistently or arbitrarily in designated eastern Box Elder and Tooele as part of the Salt Lake City nonattainment area. Accordingly, the petitions should be denied.

III. THE RECORD SUPPORTS EPA'S DECISION TO INCLUDE EASTERN BOX ELDER WITHIN THE SALT LAKE CITY NONATTAINMENT AREA.

Petitioners' second and third arguments challenge EPA's conclusions regarding wind data, topography, and appropriate nonattainment area boundaries for Box Elder. Petitioners attack EPA's scientific and technical judgments and thus have a particularly high burden to prevail. See Utah Envtl. Congress, 443 F.3d at 739. As explained below, Petitioners fail to demonstrate that EPA was arbitrary or that EPA failed to consider important information. Petitioners simply disagree with EPA's conclusions. However, under the deferential review standard, the Court must defer to EPA's conclusions if they are reasonable and supported by

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the record, even if Petitioners or the Court would arrive at a different conclusion. See Ariz. Pub. Serv. Co., 562 F.3d at 1130-31.

A. EPA Correctly Analyzed Wind Data and Other Factors to Conclude that Eastern Box Elder "Contributes" to Nonattainment in Nearby Areas.

Petitioners contend EPA ignored data suggesting that wind direction in Box Elder is from the southeast and thus could not transport Box Elder's emissions to violating monitors in nearby counties to the south-southeast. Pets. Br. 55-64. As explained below, Petitioners rely on the wrong pollution roses. EPA's conclusion that emissions from Box Elder contribute to violations in nearby areas is supported by the wind data and other factors.

As an initial matter, Petitioners do not dispute that Box Elder generates over 15,000 tpy of PM_{2.5} and PM_{2.5} precursor emissions. TSD 4.8.2 at 32, JA460; see Pets. Br. 55. Based on several analyses of wind data, EPA determined that these emissions contribute to violations in nearby areas.

First, EPA considered National Weather Service data depicted on pollution roses that showed the direction and speed of wind on "high PM_{2.5} days." TSD 4.8.2 at 39, JA467. The relevant pollution roses for the Salt Lake City area showed that "the highest concentrations were with light winds from the NW and SE directions, and … showed the highest monitored values with light wind speeds typically four miles per hour or less." <u>Id.</u> EPA further concluded that "the

monitors located in Weber, Davis, and Salt Lake Counties appear to show that some component of measured elevated PM_{2.5} values may originate from the NW and SE." <u>Id.</u> Thus, EPA had ample support for its conclusion that some portion of PM_{2.5} influencing violations at these monitors originates from eastern Box Elder. <u>Id.</u>

Second, EPA considered back trajectories calculated for selected violating PM_{2.5} monitors in the Salt Lake City area for exceedance days between 2004 and 2006 using the HYSPLIT model. See supra 15. The back trajectories revealed that "[a]ll of the model runs ... show some degree of transport from one or more of the surrounding areas (Box Elder County, Tooele County, or Utah County) into the Salt Lake City and Ogden areas during exceedance events." TSD 4.8.2 at 41-48 & Fig. A.3-8, JA469-76.

Third, in response to Utah's criticism of the HYSPLIT model, EPA analyzed surface meteorological data collected by Utah DAQ at 21 monitoring stations.

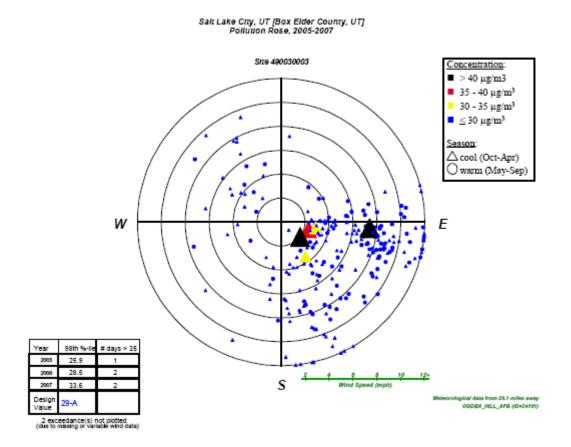
State Comment Doc. at 13-24, JA579-90. EPA concluded that "the resulting diagrams show basin scale uniformity in wind direction for much of the basin over much of the inversion period" and "for specific monitoring days targeted by the HYSPLIT back trajectories, the diagrams show wind directions over the basin consistent with the trajectories generated by HYSPLIT." Id. at 14, JA580. Thus,

Utah's wind data validated the back trajectories, which showed contribution from Box Elder to nearby areas to the south-southeast.

Fourth, EPA evaluated a conceptual model of terrain induced slope flow during PM_{2.5} exceedances in the nonattainment area provided by Utah. EPA concluded that this model confirmed that emissions from Box Elder and Tooele county move over the lake with downslope terrain induced flow and then move to violating monitors with upslope flow. Sept. 9, 2009 Mem. at 5-6, JA987-88.

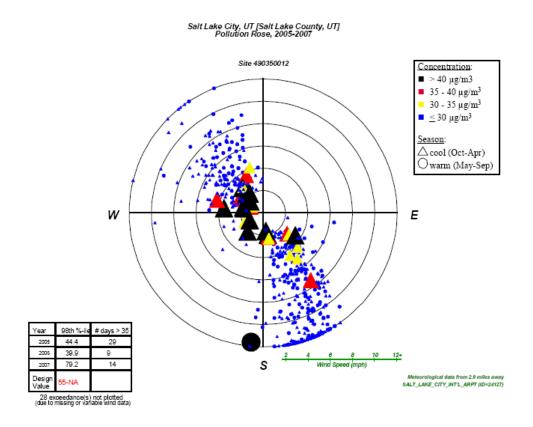
Petitioners' reliance on the Box Elder pollution rose as evidence that Box Elder does not contribute to nonattainment in nearby areas is misplaced because it is in the wrong location to show where the wind was coming from on days when nearby areas exceeded the standard. The Box Elder rose, pictured below, combines emissions data from the Brigham City monitor and wind data from Hill Air Force Base, in Weber, to present a visual representation of wind direction on

days when the Brigham City monitor exceeded the 24-hour PM_{2.5} NAAQS.



TSD 4.8.2 at 82 (bottom), JA510; see also id. 3.1.6 at 3-7—3-10, JA321-25 (explaining pollution roses). It generally shows a predominant wind from the southeast on days when the Brigham City monitor exceeded the 24-hour PM_{2.5} NAAQS. It says nothing about the wind direction on days when violations occurred in nearby counties.

The Salt Lake City pollution rose, shown below, uses wind data from the Salt Lake City International Airport to depict wind direction on days when the Salt Lake City monitor exceeded the standard.



<u>Id.</u> at 84 (bottom), JA512. The above rose shows a prevailing NW-SE wind pattern, which means that for some of the time the wind is blowing from the direction of Box Elder to areas to the south.

Not only is the Box Elder rose for the wrong location, it also relies on a limited data set. It depicts wind data from only five days when the Brigham City monitor exceeded the 24-Hour $PM_{2.5}$ NAAQS, while the Salt Lake City rose shows wind direction for 52 out of 80 days with exceedances in Salt Lake during this

same period. It is the 80 days when the Salt Lake City monitor exceeded the standard that matter in the contribution analysis, not the five days that the Brigham City monitor showed exceedances. Further, because the Box Elder monitor only operates one in three days, while the Salt Lake City monitor operates every day, the Box Elder monitor lacks data for two out of every three days. Based on the pollution roses showing the greatest number and highest exceedances (e.g., the Salt Lake roses), in combination with the back trajectories and Utah DAQ wind data, EPA reasonably concluded that for some of the time monitors in Salt Lake City and surrounding counties were influenced by a northwesterly wind, that could transport Box Elder emissions to violating monitors. TSD 4.8.2 at 39 & 84-87, JA467, JA512-15.

EPA did not ignore the Box Elder pollution rose, as Petitioners argue.

Indeed, EPA revised the Box Elder rose in response to the State and ATK's comments regarding the appropriateness of using wind data from the Salt Lake City International Airport and Pocatello, Idaho as representative of Box Elder.

State Comment Doc. at 189, JA755. While EPA "did not disagree that local pollution roses would be more representative of local conditions," EPA concluded that the wind data from the Salt Lake City International Airport was "likely to be representative of much of the southern Great Salt Lake area, and of overall [wind] flow within the greater basin." Id. EPA found that this overall wind flow is a

"widely distributed simultaneous northerly or southerly motion," <u>id.</u>, which supports EPA's conclusion that emissions from Box Elder could contribute to violating monitors to the south.

In sum, EPA's conclusions are supported by the record and should be upheld. Petitioners' mere disagreement with EPA's technical judgments does not overcome their high burden under the APA review standard. <u>Ariz. Pub. Serv. Co.</u>, 562 F.3d at 1130-31.

B. EPA Reasonably Concluded that the Salt Lake City Nonattainment Area Boundary Should Extend to the Promontory Mountains.

Petitioners' third argument is that even if EPA correctly designated eastern Box Elder as nonattainment, EPA should have excluded the area where Petitioner ATK's facility is located. (Pets. Br. 65). EPA's decision to draw the boundary along the Promontory and North Promontory Mountains (collectively "Promontory Mountains") is reasonable and supported by the record. As explained below, the population centers and emissions-generating sources, including ATK, are located east of the Promontory Mountains, and the meteorology and overall wind patterns within the closed airshed transport emissions from these sources to nearby violating monitors to the south. Petitioners' view that EPA should have drawn the boundary someplace else fails to show that EPA was arbitrary.

In most cases, EPA used county boundaries for nonattainment area boundaries. 74 Fed. Reg. 58,695. However, where EPA determined that only part of a county (e.g., the part of the county that contained the sources of contributing emissions) was contributing to nearby violations, EPA reasonably designated only the area that actually contributes to nonattainment. Id.; see Catawba, 571 F.3d at 42 (upholding partial county designations). To determine appropriate partial county boundaries, EPA looked to recognized governmental boundaries for smaller geographic areas encompassing the emission sources (e.g., townships), as well as topographic features (e.g., mountain ranges). Id. at 58,696. EPA identified the boundaries for the Salt Lake City area based on whole and partial counties as defined by townships and range that coincided with natural topographic barriers.

As discussed, EPA reasonably concluded that information relating to traffic and commuting, growth, meteorology, topography, and emissions demonstrates that eastern Box Elder contributes to nonattainment in the Salt Lake City area. EPA further found western Box Elder to be "sparsely-inhabited" and lacking emissions sources that would contribute to nonattainment in the Salt Lake area. Id. at 32, JA460. Having concluded that only part of Box Elder contributed to nonattainment, EPA had to determine an appropriate boundary between the contributing and non-contributing portions.

Given the influence of topography on meteorology, wind patterns, and the location of emissions-generating activities, EPA logically considered any topographic barriers separating eastern and western Box Elder. <u>Id.</u> at 48, JA476. The Promontory Mountains are 24 miles west of Brigham City and Tremonton and create a physical barrier separating eastern and western Box Elder. Public Comment Doc. at 167, JA939. EPA concluded that the mountains are an airshed barrier during inversions leading to elevated concentrations of PM_{2.5} and the primary factor in determining where the population is located. <u>Id.</u> Thus, the Promontory Mountains are a reasonable boundary between eastern and western Box Elder.

ATK's facility is located to the *east* of the Promontory Mountains and is one of three "major point sources" of emissions Utah identified in Box Elder. <u>See UT</u> Recommendation Letter, Index 463, at 24 (Fig. 9) & 31, JA165, JA172. It is only 13 miles from Tremonton, Box Elder's second largest population center, and less than 20 miles from Box Elder's eastern border. Accordingly, EPA properly included ATK's facility within the nonattainment area boundary. ¹⁸

.

Accordingly, Petitioners' contention that ATK is located in "sparsely-inhabited" western Box Elder is misleading and inconsistent with the record. <u>See</u> Pets. Br. 65. EPA defined western Box Elder as the part of the county located west of the Promontory Mountains. <u>See, e.g.,</u> EPA Modification Letter to Utah, Index 524, at 31, JA234; TSD 4.8.2 at 48, JA476.

Petitioners' suggestion that ATK's emissions are "not relevant" is misplaced. EPA did not select the Promontory Mountains as the nonattainment area boundary based on ATK's emissions. As EPA explained in response to ATK's comments, the "technical analysis established that Box Elder emissions were contributing to violations in nearby counties, and a boundary was established which utilized natural topographic barriers." Public Comment Doc. at 168, JA940.

Nevertheless, Petitioners cannot dispute the 277 tpy of PM_{2.5} and precursor emissions generated at ATK's Promontory facility. UT Recommendation Letter, Appx. 2, JA195. Further, ATK's comments indicate that more than one third of its NOx emissions are from boilers that operate daily. ATK Comment Letter at 17, Index 165, JA023. Whether ATK operates under controls that limit some of its emissions to non-inversionary periods (Pets. Br. 65 n.13) is an issue more properly addressed by the State during the SIP development, which is the CAA mechanism for controlling emissions in nonattainment areas to attain the NAAQS, 42 U.S.C. § 7502(c).

Petitioners' contention that the Promontory Mountains are an inappropriate barrier because they do not reach above the mixing zone is also misplaced.

Petitioners do not dispute the significant factors relative to contribution from eastern Box Elder, i.e., (1) the area's elevation is below the inversionary layer and

within the mixing zone, and (2) no physical barriers lie to the south and southeast, thus allowing for the unimpeded flow of emissions from eastern Box Elder to these areas. That some of the Promontory Mountains do not reach the maximum height of the mixing zone does not mean that Box Elder's emissions do not travel to the south-southeast. EPA found that overall air flow within the basin oscillates NW-SE. Further, Petitioners are incorrect that the Great Salt Lake creates a gap whereby emissions from Box Elder would escape the basin to the west. EPA's back trajectories showed that wind patterns transport emissions from Brigham City and eastern Box Elder over the Lake and eastward toward Salt Lake County. TSD 4.8.2 at 43-47 (Fig. A.3-7—A.3-9), JA471-75.

Petitioners' further argument that EPA has not shown that meteorological conditions in western Box Elder transport emissions from ATK's facility to violating monitors in the south rehashes the argument in Part II of their brief, discussed and refuted above. The wind data and analysis in the record amply support EPA's conclusion that eastern Box Elder, which includes ATK's facility, contributes to violations in areas to the south. See supra 55-59.

ATK's assertion that EPA ignored the influence of local topography is unsupported. As EPA explained in response to ATK's comments, "the Salt Lake International [Airport] wind rose used by EPA is more representative of large scale wind patterns in the basin, given the relative distance of the airport from

topographical features." Public Comment Doc. at 167, JA939; State Comment Doc. at 189, JA755. ATK's wind rose shows a localized east-west wind flow pattern. When the wind flows in an easterly direction, emissions from the vicinity of ATK's facility will move toward the center of eastern Box Elder, where they can mix with emissions caught up in the large scale oscillating NW-SE wind pattern EPA observed. EPA did not ignore the local influences on wind patterns; EPA simply came to a different conclusion about them than ATK. EPA's technical judgments are entitled to significant deference. <u>Utah Envtl. Congress</u>, 443 F.3d at 739.

Regarding Petitioners' contention that EPA did not demonstrate sufficient wind flow for a sufficient period of time to transport emissions from the location of ATK's facility to violating monitors (Pets. Br. 69), the CAA does not require EPA to prove that emissions from a particular source reach a particular violating monitor to determine an area "contributes" to nearby nonattainment.

"[C]ontribute" does not mean "strictly cause," nor did EPA interpret it that way.

Catawba, 571 F.3d at 39. EPA may conclude the "addition of PM_{2.5} into the

atmosphere is significant even though a nearby county's nonattainment problem would still persist in its absence." Id.¹⁹

Moreover, EPA reasonably concluded that eastern Box Elder's emissions can travel to violating monitors in the south, noting that during winter temperature inversions "ample time is provided for mixing along the length of the Wasatch Front given the observed non-zero wind velocities and patterns." State Comment Doc. at 189, JA755. EPA found that with average wind speeds up to 4 mph during inversions lasting 7 to 21 days, during which time southerly wind flows of 8 to 12 hours can occur, even light winds can move emissions up to 50 miles or more. TSD 4.8.2 at 39, JA467. This is ample to transport emissions approximately 30 to 60 miles from Box Elder to nearby violating monitors. Indeed, even if periods of consistent wind flow are less than 8 to 12 hours, movement of only 7 miles a day (i.e., winds moving at 0.3 mph average) would be sufficient to transport emissions 49 miles in a 7 day inversion.

In sum, EPA's conclusion that Box Elder's emissions contribute to nonattainment in nearby areas and its selection of the Promontory Mountains as the nonattainment area boundary are supported by the record and should be upheld.

Nor does the APA review standard impose such a burden. The court must affirm as long as EPA considered the relevant factors and made a rational choice. <u>Burlington Truck Lines</u>, 371 U.S. at 168.

CONCLUSION

For the foregoing reasons, the Court should dismiss the petitions or transfer them to the D.C. Circuit. If the Court does not dismiss or transfer the Petitions, the Court should deny them.

Respectfully submitted,

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DATE: October 12, 2010

STATEMENT REGARDING ORAL ARGUMENT

EPA believes that the issues in this case are sufficiently complex that oral argument would be beneficial to the Court in its consideration of those issues.

EPA therefore respectfully requests that the Court schedule oral argument.

CERTIFICATE OF COMPLIANCE WITH RULE 32(a)

In accordance with Fed. R. App. 32(a)(7)(C), the undersigned certifies that this brief is proportionally spaced, uses 14-point type and contains 13,986 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(a)(7)(B)(iii).

s/ Jessica O'Donnell
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CERTIFCATE OF SERVICE

The undersigned certifies that on October 12, 2010, the foregoing RESPONDENT'S FINAL RESPONSE BRIEF was served electronically through the court's CM/ECF system on all registered counsel and by overnight delivery to the following:

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