Regulatory Perspectives on Air Quality Issues in the Western United States

A big picture discussion of western states’ air quality issues from a regulatory perspective.
The U.S. Environmental Protection Agency (EPA) has worked closely with state, local, and tribal organizations in the Western United States to improve air quality and protect public health. Over the years, EPA and our partners have made considerable progress improving the region’s air quality. Nonetheless, managing air quality in the Western United States raises many challenges, such as consideration of wildfires and complex topography, including diverse ecosystems from extensive mountain ranges and deserts, and almost everything in between. This article presents a big picture discussion of how air quality issues in the Western United States are considered in terms of three issue areas: background ozone, exceptional events, and regional haze.

Key Principles
EPA’s air regulatory programs are conducted in accordance with three key principles: collaboration, coordination, and communication with our federal, tribal, state, and local partners, in addition to other stakeholders. These principles are especially important in the Western United States, given the many challenges and unique perspectives that need to be considered by those states in their efforts to attain and maintain the national air quality standards (NAAQS), and assure compliance with other U.S. Clean Air Act (CAA) obligations.

Background Ozone
One air quality challenge in the Western United States is how best to account for the influence of background ozone as part of efforts to attain the 2015 ozone NAAQS. Background ozone is typically defined to be any ozone formed from sources other than U.S. manmade emissions of ozone precursors. This specific definition of background ozone is referred to as U.S. background (USB). Sources of USB include natural events, such as wildfires or stratospheric intrusions, as well as manmade pollution from sources outside the United States, including Canada and Mexico. While USB ozone levels vary by location and from day-to-day, and are generally well below NAAQS levels, ambient data and air quality model simulations have established that USB ozone can contribute appreciably to monitored ozone concentrations in the Western United States.

As part of broader efforts to further inform state implementation planning for the new 70-parts per billion (ppb) ozone NAAQS, EPA developed a white paper summarizing the issues associated with background ozone. The intent of the white paper was to establish a foundation for additional conversations on USB ozone. The document included a review of scientific assessments of USB ozone and a description of the existing provisions of the CAA that could be used to mitigate implementation concerns related to background.

After the white paper was released, EPA held a workshop in Phoenix, AZ, in February 2016 to discuss and receive further feedback on issues related to background ozone in the context of implementing the ozone NAAQS. A variety of topics were discussed at the meeting, including (1) improvements needed in modeling analyses to properly characterize USB levels; (2) the need for additional EPA guidance to assist states in utilizing existing CAA mechanisms to deal with background ozone (e.g., exceptional events, international transport demonstrations, etc.); and (3) alternative ideas for implementing the ozone NAAQS in light of background issues.

Additionally, EPA opened a non-regulatory docket (EPA-HQ-OAR-2016-0097) to allow workshop participants and others unable to attend to submit further comments. EPA continues to refine and conduct its national and global model simulations to better characterize USB, and EPA is evaluating the need for further guidance and/or rules to address USB based on feedback received.

Exceptional Events
A recent review of monitoring data for all criteria pollutants collected in EPA’s Air Quality System (AQS) from January 1, 2011 to December 31, 2013, indicates that 13 states in the Western United States identified nearly 70 percent of the total national number of exceptional-event monitor-days. (Note: Here “West” is defined as including Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming; Hawaii, excluded.) While affected states have not formally requested or prepared exceptional events demonstrations for all of these monitor-days, the identification indicates the importance of addressing exceptional events in the Western United States.

To qualify as an exceptional event under the Exceptional Events Rule, the event must be either a natural event or an event caused by human activity that is unlikely to recur. The event must also affect air quality and be both not reasonably preventable and not reasonably controllable. If an air agency submits a demonstration that is deemed by EPA to satisfy the Exceptional Events Rule criteria, then the event-influenced air monitoring data can be excluded from the data set used to inform certain regulatory decisions. EPA’s recent rulemaking to revise the Exceptional Events Rule, which was developed based on extensive input from western states and other stakeholders, attempts to streamline these demonstrations.

In terms of guidance documents, EPA recently released a document describing how to develop an exceptional events demonstration for wildfires that may influence monitored
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Regional Haze
Another air quality challenge for the Western United States is how best to demonstrate the progress in reducing haze in the numerous Western Class I areas protected by the Regional Haze Rule. In general, Western Class I areas have better visibility conditions than Eastern Class I areas, and these visibility conditions are improving. However, in some Western Class I areas, improvements in visibility from anthropogenic emissions reductions are overwhelmed by impacts from wildfire and/or high wind dust events. During discussions with states over the past couple years, EPA heard that these fire and dust impacts make it difficult to communicate with the public about visibility improvements in their areas.

To help address this concern, EPA proposed both rule revisions and guidance to support state planning for future planning periods under the Regional Haze Program. In preparing these revisions, EPA explored alternative approaches for focusing on anthropogenic visibility impairment and proposed to require states to focus on the days with the most anthropogenic impairment when tracking visibility progress. We also provided EPAs specific recommendations for selecting days for visibility tracking based on anthropogenic impairment in a recent draft guidance document. On December 14, 2016, EPA signed a final rulemaking regarding the Regional Haze Program.

Moving Forward
While the Regional Haze Rule, as well as the recently revised Exceptional Events Rule, provide regulatory flexibility for certain contributors to monitored air concentrations, the CAA requires a balancing of the air pollution effects of these natural and/or uncontrollable events with protecting human health and the environment. EPA recently held workshops with air agencies and other stakeholders regarding implementation of the Exceptional Events Final Rule, and also recently worked with the National Park Service and others to recognize the progress of the Regional Haze program. EPA looks forward to continuing to work collaboratively with air agencies, federal land managers, and other stakeholders to implement these and other important air quality programs in the Western United States. While achieving balance is an ongoing and dynamic challenge for western states, and nationally, together we can resolve these complex issues and ensure protection of public health and the environment.

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References
1. For additional information on background ozone, including EPA documents, see https://www.epa.gov/ozone-pollution/background-ozone-workshop-and-information.
6. The Regional Haze Rule protects 156 Class I areas (i.e., national parks and wilderness areas), 112 of which are located in the Western United States.
9. See https://blog.epa.gov/blog/2016/10/protecting-our-nations-treasured-vistas/.