

## STAPPA and ALAPCO Final Comments on EPA's Modeling Guidance for the New 8-Hour Ozone NAAQS

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Office of Air Quality Planning and Standards  
U.S. Environmental Protection Agency  
Research Triangle Park, NC

Dear Mr. Meyer:

On behalf of the State and Territorial Air Pollution Program Administrators (STAPPA) and the Association of Local Air Pollution Control Officials (ALAPCO), thank you for the opportunity to comment on EPA's October 5, 1998 draft ozone modeling guidance, entitled *Use of Models and Other Analyses in Attainment Demonstrations for the 8-Hour Ozone NAAQS*. The associations appreciate the opportunities EPA has provided our members and other stakeholders to discuss the draft guidance through a series of conference calls over the past few months. In addition to the comments made by state and local representatives on those calls, STAPPA and ALAPCO provide the following comments on several important aspects of the draft guidance.

### **General Comments**

The associations generally support the structure and content of the draft guidance and believe that it provides important modeling information in a user-friendly format, particularly the use of questions as section headings (e.g., Section 3 - What is the Recommended Modeled Attainment Test?). Consistent with the user-friendly format, STAPPA and ALAPCO believe that the substantive sections provide appropriate guidance and are well written and understandable.

As a general proposition, the associations support national consistency and fairness in modeling the new 8-hour ozone NAAQS across the regions; however, we also believe that the guidance should provide adequate flexibility for agencies and regions to select the most appropriate ozone modeling techniques, which may vary geographically, meteorologically and/or circumstantially, due to, among others, agencies' resources and experience. STAPPA and ALAPCO believe that EPA's decision not to prescribe a specific model for use in attainment demonstrations of the 8-hour ozone NAAQS provides state and local agencies with appropriate flexibility to select a model that best suits their particular technical needs and circumstances. The associations recommend, however, that EPA also ensure that the guidance provide state and local agencies with adequate flexibility in other aspects of modeling the new 8-hour ozone NAAQS, including flexibility in selecting the base year of data to use, selecting the number of primary episode days needed for modeling and using weight-of-evidence analyses.

STAPPA and ALAPCO provide specific comments about these three elements of the guidance below.

Consistent with state and local representatives' comments during previous stakeholder conference calls on the draft guidance, the associations recommend that EPA expand information in the guidance on the importance of using complementary analyses of air quality, emissions and meteorological data in conducting modeling studies. In particular, STAPPA and ALAPCO believe that the guidance should provide more detailed information about evaluating meteorological data, because it is an important factor in the formation of ozone and regional transport and may be responsible for limiting the performance of models and selection of appropriate control strategies.

## **Specific Comments**

### ***Base Year***

EPA's modeling guidance for the 8-hour ozone NAAQS will apply to all areas that have reported 1997-1999 ozone data to EPA's Aerometric Information Retrieval System (AIRS) showing a violation of the 8-hour ozone NAAQS and do not qualify as, or have not elected to be, "transitional" ozone nonattainment areas, as defined in President Clinton's 1997 directive on implementing the new NAAQS. Moreover, the implementation schedule for the new NAAQS requires that SIP revisions for areas projecting problems meeting the 8-hour ozone NAAQS in traditional nonattainment areas are due within three years after an area is designated "nonattainment," which will be 2003 for traditional ozone nonattainment areas. Significantly, this means that attainment demonstrations supporting these revisions should be completed by 2002, which will require the work underlying those demonstrations to begin no later than 1999.

A modeled attainment demonstration consists of analyses that estimate whether selected emission reductions will result in ambient concentrations that meet the applicable NAAQS and identification of a set of measures that will result in the required emission reductions. Under EPA's guidance, state and local agencies may estimate the amount of emission reductions needed to demonstrate attainment by passing a "modeled attainment test," and a screening test at selected locations without ozone monitors. The draft guidance further provides that the modeled attainment test considers the ratio between predicted future and predicted current 8-hour daily maximum concentrations near a monitor.

The modeled attainment test is linked to the form of the 8-hour ozone NAAQS through use of a current monitored design value, which is calculated consistently with the form of the standard. The 8-hour ozone NAAQS is met in an area if, over three consecutive years, the average fourth highest 8-hour daily maximum ozone concentration observed at each monitor is less than, or equal to, 0.08 parts per million (ppm) (i.e., the modeled design value is less than, or equal to, 84 parts per billion (ppb)). Thus, selection of an emission inventory base year, which defines the three-year period that will be used for assessing

attainment of the 8-hour ozone NAAQS and designing appropriate control strategies, is a critical decision.

For purposes of selecting an appropriate three-year emission inventory period for use in demonstrating attainment, EPA's draft guidance recommends that state and local agencies either use previously modeled inventories or the National Emissions Trends (NET) inventory, which reflects statewide, annual emission estimates for volatile organic compounds (VOC), nitrogen oxides (NO<sub>x</sub>) and carbon monoxide (CO). Because many areas do not have adequate previously modeled ozone inventories, they must rely on the NET inventory or begin developing appropriate emission inventories almost immediately. The draft guidance further provides that while 1996 is the most recent NET inventory for ozone precursors, "EPA plans to have a 1999 NET available during the latter half of 2000" that will be the preferred starting point for estimating emissions needed to support modeling underlying 2003 SIP revisions.

Although EPA's draft guidance appears to provide flexibility in the selection of a base year for emission inventories to be used in demonstrating attainment, STAPPA and ALAPCO recommend that the agency explicitly clarify in the guidance that state and local agencies have discretion in selecting an ozone emission inventory base year (e.g., 1996, 1999). Ideally, any 2003 SIP revisions designed to correct state and local agencies' problems meeting the 8-hour ozone NAAQS should be based on the most current emission inventory data available at that time. Many agencies, however, will not be able to meet their 2003 SIP revision deadlines if they wait for the most recent emissions inventory data (e.g., 1999). As such, STAPPA and ALAPCO believe that each state and local agency should have the flexibility to select the most recent three-year quality-assured emission inventory database that will enable them to complete modeling and attainment demonstrations in time to meet EPA's implementation schedule. Under this approach, some agencies could select 1996 as the base year, because use of a later year (e.g., 1999) may cause delays in modeling their attainment demonstrations in time to meet the 2003 deadline. On the other hand, some agencies have indicated a desire to use 1999 as their base year for emission inventory data, due to their ability to model attainment demonstrations using that emissions data. Accordingly, the associations recommend that EPA not set a mandatory base year and expressly provide in the guidance that agencies have discretion to select the most recent quality-assured emission inventory database.

### ***Number of Episode Days for Modeling***

EPA's draft modeling guidance would require state and local agencies to apply the modeled attainment test at each monitoring site within a traditional ozone nonattainment area with an 8-hour ozone level of 75 ppb or greater averaged over the three consecutive years serving as the basis for a required SIP revision. Moreover, because the 8-hour ozone NAAQS is closer to ambient background values than the 1-hour NAAQS, EPA expects greater problems in interpreting 8-hour NAAQS modeling results. The guidance states that "[b]ecause [EPA does] not want modeled results to be dependent on the outcome of any single modeled day, [the agency recommends] that at least 10 primary

episode days ... be modeled." This "minimum" number of episode days is intended to ensure an adequate coverage period that is representative of day-to-day meteorological variations.

In deciding which 10 days to select, the guidance suggests choosing episodes with days that are approximately as severe (i.e., within + 10 ppb) as the average fourth highest 8-hour daily maximum concentration specified in the NAAQS. Other selection criteria include preference for a mix of episodes that represent a variety of meteorological conditions and for which intensive data is available, including days with measurements aloft, speciated monitoring data and precursor measurements.

STAPPA and ALAPCO recognize that the 8-hour NAAQS necessitates the need for multiple episode days in modeling emission data. We believe, however, that mandating a minimum of 10 episode days may be arbitrary in numerous circumstances where fewer days would be adequate. In some cases, seasonal and other factors limit the variability of episode days, thus, reducing the number of days needed to achieve equal and adequate modeling results. Moreover, using high quality databases (e.g., air quality, meteorology) is important in assessing the 8-hour ozone NAAQS, but in some areas there may not be 10 days of such high quality data available. In addition, many agencies will be increasing their modeling activities under the new 8-hour ozone NAAQS, which will increase resource needs. The associations believe that EPA's modeling guidance should not force agencies to expend limited resources on unnecessary modeling of a minimum of 10 episode days, where modeling fewer days would be both scientifically defensible and equally effective. Therefore, the associations recommend that the guidance provide appropriate flexibility, wherein agencies may select fewer than 10 episode days where variables (e.g., meteorology) related to the episodes diminish the need for 10 or more days. This flexibility would not preclude agencies from selecting 10 or more episode days in appropriate cases, but would better ensure that limited resources are not wasted on modeling more episode days than are necessary for purposes of attainment demonstrations.

### ***Weight-of-Evidence Test***

In situations where the results of modeled attainment tests and supplementary screening tests show that an area will attain, or will be close to attaining, the 8-hour ozone NAAQS, EPA's draft guidance provides for a "weight of evidence" determination that agencies may use to corroborate the modeled test results and help assess the adequacy of any proposed control strategies. As proposed, the weight-of-evidence determination involves a diverse set of technical analyses of monitored air quality data, emission estimates and meteorological data, with the results of each analysis considered in concert to determine whether or not attainment is likely.

STAPPA and ALAPCO believe EPA's weight-of-evidence determination can be an important discretionary tool that state and local agencies may use to corroborate whether the modeled attainment for an area is accurate, particularly where the results of the modeled attainment and screening tests are ambiguous. The results of the weight-of-

evidence test may be used to either require more emission reductions than identified using the modeled attainment and screening tests, or as a rationale for concluding that not all of the modeled emission reductions from the tests are necessary. The associations believe that enabling state and local agencies to use, at their discretion, the weight-of-evidence determination ensures that modeling decisions are based on the best available data.

EPA's draft guidance, however, restricts use of the weight-of-evidence determination to situations where modeled attainment test results show ozone "design values" no greater than 89 ppb, which is 5 ppb above the 8-hour ozone NAAQS (i.e., less than, or equal to, 84 ppb). As mentioned previously, the "design value" for the 8-hour ozone NAAQS is the average monitored fourth highest 8-hour daily maximum ozone concentration. According to EPA's draft guidance, where results of the modeled attainment test produce a design value less than, or equal to, 84 ppb, a weight-of-evidence determination may be used in an attainment demonstration to check the control strategy selected. In addition, where results of the modeled attainment test produce a design value between 85-89 ppb, a weight-of-evidence determination may be used in an attainment demonstration to assess whether a revised control strategy is needed. For situations where results of the modeled attainment test produce a design value equal to, or greater than, 90 ppb, a weight-of-evidence determination *may not* be used in an attainment demonstration. The draft guidance states that "[i]f results obtained from one or both of [the modeled attainment and screening tests] are far removed from passing, we do not believe the more qualitative arguments made in a weight-of-evidence determination can be convincing."

The associations agree that the qualitative arguments made in a weight-of-evidence determination are most appropriate where the modeled attainment and screening tests show design values relatively close to the 8-hour ozone NAAQS. We are, however, uncertain whether EPA's establishment of a five-ppb cut-off above the 8-hour ozone NAAQS for limiting the use of the weight-of-evidence determination is appropriate. State and local air agencies have had years of experience modeling attainment of the various NAAQS, and uncertainties in modeling results, including design values, are common. Thus, uncertainties occur in the results of the modeling attainment and screening tests, and EPA's five ppb cut-off for using weight-of-evidence demonstrations may prevent its use in otherwise appropriate situations where the difference between the design values and the NAAQS is slightly above 5 ppb. The associations, however, agree that some design-value cut-off above the 8-hour ozone standard, for purposes of limiting use of the weight-of-evidence determination, is appropriate. We recommend that EPA reevaluate its decision to set the cut-off at five ppb and assess whether that design value, or another, provides an appropriate limitation on the use of the weight-of-evidence determination. STAPPA and ALAPCO offer to work with EPA in assessing this issue.

## **Conclusion**

STAPPA and ALAPCO believe that EPA's draft modeling guidance for the 8-hour ozone NAAQS is a valuable information base on which state and local agencies can rely in preparing attainment demonstrations for the new standard. We believe that adopting the

above recommendations will improve the guidance and make it even more valuable for agencies and EPA. We welcome the opportunity to work with EPA to address our comments and recommendations, and encourage you to contact either of us, or Dave Wallenberg of STAPPA/ALAPCO, if you have any questions or desire additional information.

Sincerely,

(Original Signed)

Herb Williams

STAPPA Chair

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