

US EPA ARCHIVE DOCUMENT

PETITION FOR RECONSIDERATION

The Mississippi Department of Environmental Quality (“MDEQ”) respectfully requests that the Environmental Protection Agency (“EPA”) reconsider its designation of nonattainment for the northern portion of DeSoto County, Mississippi. In support of its request, MDEQ addresses each of the factors set forth in the December 4, 2008 guidance memorandum “Area Designation for the 2008 Revised Ozone National Ambient Air Quality Standards” as the nine factors are grouped by EPA in its designation Technical Support Document. In addition, MDEQ provides additional, general objections and comments.

I. GENERAL OBJECTIONS

A. Failure to rely on or to otherwise consider most recent certified data

Prior to making its final designations, EPA indicated that in order for it to consider air quality data for the most recent time period of 2009-2011, it would need to receive the states’ certified data by February 29, 2012. Mississippi certified its data for the 2009-2011 time period on January 31, 2012. Tennessee also certified its data for the 2009-2011 time period. However, because Arkansas did not certify its data for 2009-2011, EPA only considered the 2008-2010 data in making its designation for the MS-TN-AR designations.

Mississippi asserts that EPA should have considered the most recent data, as it is the best scientific evidence of air quality in Mississippi and Tennessee at the current time. EPA stated unequivocally, indeed reiterated, in its Responses to Significant Comments 2008 Ozone NAAQS, April 30, 2012: “As stated in the previous response, we are relying on the most recent three years of certified data to designate areas for the 2008 NAAQS.” Nonetheless, EPA ignored the most recent three years of certified data from Mississippi and Tennessee in making its designations.

Even if EPA did not rely on the 2009-2011 data exclusively in making its designation, it could and should have relied on the data as proof of the facts and data asserted by Mississippi in its significant comments to the EPA preliminary designations. The most recent data demonstrates conclusively that DeSoto County does not impact the air quality in Tennessee as all of the Tennessee monitors have been certified to be in attainment during the 2009-2011 time period.

Mississippi is and has always been in attainment. The most recent certified data demonstrates overwhelmingly that despite growth in population in DeSoto County, the Tennessee monitors are not affected by Mississippi. Indeed, both Mississippi and Tennessee demonstrated by certified data that both states are in attainment. It defies logic for EPA to ignore this most recent data and draw conclusions based on old data when those conclusions are proven unequivocally to be wrong by the most recent certified data. The result is unnecessarily punitive to Mississippi and DeSoto County.

B. Failure to give DeSoto County credit for voluntary measures, as promised in EPA's visit to DeSoto County in 2007.

In 2007, EPA Region 4 representatives came to DeSoto County and met with its leadership. At that meeting, EPA stressed the importance of having local voluntary measures in place, thoroughly documenting those efforts and providing the information to EPA. EPA said that the information would be used for boundary determinations.

Since that time, DeSoto County has not only had those measures in place, but the data indicate that DeSoto is making great strides in its control of emissions, as is evidenced by the numbers provided in MDEQ's TSD. Despite representations of EPA staff, and despite the proof of the success of those voluntary initiatives, EPA failed to recognize the significance of the reduced emissions or to give DeSoto County any consideration thereof.

The approach which EPA has taken in making its boundary determinations is only specified in the CAA for serious areas. DeSoto County has complied with all EPA requests to voluntarily reduce ozone emissions, and relied on EPA's representations that the same would be favorably considered when designation boundaries were determined. EPA should reconsider its designation of nonattainment for DeSoto County, and designate it as attainment. At a bare minimum, EPA should designate DeSoto County as attainment/unclassifiable.

C. EPA's designation of nonattainment in 2012 is evidence of the arbitrary and capricious nature of the agency's action after the designation of attainment in 2004.

EPA responded to Mississippi's argument that DeSoto County was not included within the boundary for the Memphis, TN-MS-AR nonattainment area for the 1997 ozone NAAQS, and therefore should not be included in the 2012 boundary designations by stating two things, both of which are in error.

First, EPA asserts that "EPA must analyze the situation anew for purposes of the new, more stringent NAAQS promulgated in 2008, based on the most recent information now available." As set forth above, EPA did not rely on the most recent information available for DeSoto County, instead relying on information that is three years old. The most recent information available demonstrates conclusively that not only is DeSoto County meeting the more stringent standard, its numbers continue to trend downward.

Second, EPA asserts that "[t]here has been growth throughout the entire Memphis area since EPA last designated ozone areas and the technical information [EPA] is relying on now, in 2012, is different than the information we relied on in 2004 for the 1997 NAAQS." Mississippi maintains that the numbers presented refute the conclusion that EPA has drawn – despite the population growth and increase in VMT's – the numbers for DeSoto County have gone down. Not only are the numbers at least as good as those from the 2004 decision, they are better.

DeSoto County should be able to rely on past precedent to determine what actions EPA will take. Such consistency is what guides the public and the regulatory agencies in the actions they take. DeSoto County relied on previous EPA decisions, and on representations from EPA staff, as discussed above, to take actions to reduce emissions. Having not only maintained their attainment status, DeSoto County improved upon it and met the newer, more stringent standards. EPA should reconsider its 2012 decision and be consistent with previous decisions, given DeSoto County's proof as set forth in MDEQ's TSD.

II. OBJECTIONS TO SPECIFIC FACTOR ANALYSIS

Factor 1 – Air Quality Data

In consideration of this factor, only air quality data should be used to provide a rationale for determining nonattainment boundaries. Meteorological conditions should not be analyzed under this factor; however, because EPA did include it, these comments will be addressed.

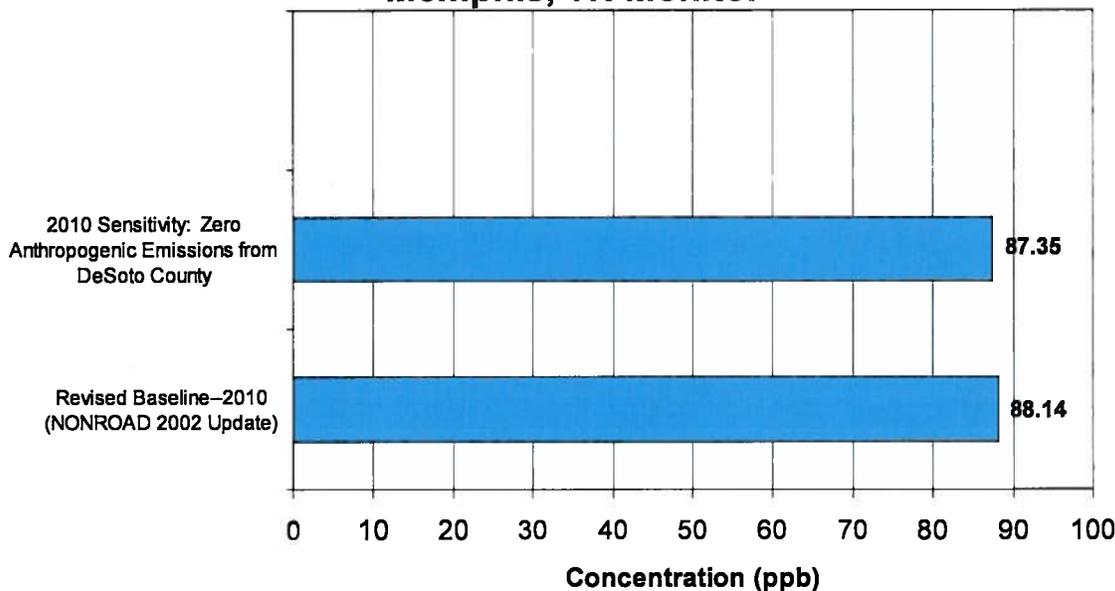
In EPA's TSD, EPA cites comments from Arkansas concerning the Arkansas-Tennessee-Mississippi Ozone Study (ATMOS). EPA states that a key point of this analysis indicates that the monitoring site with the maximum design value for the area varies from year to year based on the frequency of meteorological conditions that are conducive to high ozone concentrations at the specific monitoring sites. However, EPA failed to acknowledge that DeSoto County has never had the highest ozone design value in the Memphis area for any year, going back to at least the 1995-1997 period. Further, the results of the ATMOS study also showed that DeSoto County had less than a 1 ppb contribution to the ozone levels in the Memphis area. MDEQ asserts this is not a sufficient contribution, even when combined with the other nine factors, to warrant a designation of nonattainment. Because EPA cites this study as part of their rationale to include DeSoto County in the Memphis nonattainment area, all of the results of this study should be used - not just the parts that seem to justify their position. If it is so used, the study will plainly support Mississippi's position that DeSoto County does not sufficiently contribute to the emissions in Shelby County, Tennessee.

The following table from the ATMOS study¹ shows the projected 2010 ozone design value at the Memphis-Frayser monitor would be 88.14 ppb including DeSoto County emissions. The projected design value at the same site with no DeSoto County emissions would be 87.35 ppb. This means that DeSoto County's contribution to the ozone concentrations at the Memphis-Frayser monitoring site was 0.79 ppb. However, the actual 2010 design value at the Frayser monitor was 76 ppb, meaning that the model greatly over estimated ozone concentrations, thus DeSoto County's actual contribution is likely even lower. While the modeling was based on a 1999 episode, DeSoto County's

¹ The ATMOS information can be found at <http://atmos.saintl.com>. The results are in an interactive software format, where inquiries can be made by the user. It can also be found in the MDEQ TSD submitted to EPA on January 27, 2004.

VOC emissions have decreased by 26% and NOx emissions have increased only 3% since that time.

Estimated Design Value (99DV = 95 ppb) for 9-Cell Daily Peak 8-Hr Ozone Concentration (ppb) at the Memphis, TN Monitor



The ATMOS results show a minimal contribution 0.79 ppb to the Memphis-Frayser monitor in 1999. Based on the latest available data, DeSoto County VOC emissions decreased and NOx emissions remained about the same. Thus, the DeSoto County ozone contribution should be less than 0.79 ppb currently.

It is clear that the ATMOS projected design values were overestimated; however the model overestimated the amount of ozone produced by the emissions because it started with a higher baseline. In short, that means that ozone concentrations were much higher at that time. This also demonstrates that more emission reductions have occurred since that time than what the model accounted for, resulting in lower ozone concentrations.

The ATMOS model demonstrates how negligible contributions from DeSoto County were, even when ozone values were higher. The emissions have stayed the same for NOx and are lower for VOCs since the model was run. Therefore, DeSoto County's ozone contribution is even lower now.

Factor 2 – Emissions and Emissions Related Data

A. Emissions Data (location of sources and contribution to ozone concentrations)

EPA's TSD only addressed the general comparative amounts of emissions from DeSoto, Crittenden, and Shelby Counties. It did not address particular activities that make up the emissions or their locations.

In MDEQ's TSD, a map (designated as Figure 2 in MDEQ's TSD) was included which showed the locations of the monitors in the area along with both the major emissions sources the locations of major interstates, railways, waterways, ports and truck centers. The map and supporting narrative demonstrates conclusively that the areas and activities – point sources, rail centers, river ports, major interstate intersections and truck centers- that generate significant emissions are not only concentrated in Shelby and Crittenden Counties, but also are in very close proximity to the monitors in Shelby and Crittenden Counties with the highest ozone readings.

In particular, the amount of commerce-related activities in the area that are primarily in Shelby and Crittenden Counties rather than DeSoto County is shown. This information was, in summary:

- Interstate 40 which is one of the largest trucking routes in the nation and I-55 intersect in Shelby and Crittenden Counties.
- Crittenden County is the number one point of diesel sales in the country with nine truck centers in relatively close proximity to the Crittenden county monitor.
- The Memphis International Airport with the FedEx “super hub” is located in Shelby County.
- Memphis is the number three rail center in the United States with large intermodal facilities in Shelby and Crittenden Counties.
- The International Port of Memphis is the fourth largest inland port in the United States.

This puts the large majority of emissions generating activities in Shelby and Crittenden Counties, and not in DeSoto County. In the final TSD, EPA stated it “considered all the additional information provided by the states in the analysis”; however, EPA did not specifically address or comment on these emissions sources and their contribution to the ozone levels in the area.

EPA has recognized that raw numbers and percentages of commuters and VMT's “does not adequately take into account ... [a] large volume of diesel truck traffic[] on the major highways running through th[e] area.” *ATK Launch Systems, Inc. v. EPA*, 669 F.3d 330 (D.C. Cir., 2012). Because these factors are factors on which EPA substantially relied in making its boundary determination, it is incumbent upon EPA to recognize and properly assess the impact of this commerce- related traffic in Shelby and Crittenden Counties.

As such, MDEQ asserts that there is overwhelming evidence that activities in Crittenden County, Arkansas and Shelby County, Tennessee are negatively impacting the air quality in the region – not emissions from DeSoto County, Mississippi.

B. Population Density and Degree of Urbanization

DeSoto County has experienced moderate growth, approximately five percent (5%) per year since 2000. However, the growth rate has slowed significantly since 2006. The EPA-TSD cites a growth rate of 48% over the last decade, but using a percentage based rate is misleading due to the county's relatively low 2000 population. The actual increase in numbers is 53,000 people over the last decade. Compared to the population of Shelby County (927,000) or the entire Memphis MSA (1,316,000), the growth is not significant. Consider if the population of DeSoto County were only 100 people, but that 100 doubled to 200 over the same ten (10) year period. Even though the growth rate would be 100%, that 100% would still be so minimal that the overall impact would not even register. Using growth rate percentages is not a reasonable measure of sufficient contribution – raw numbers are by far the best scientific evidence.

EPA states that “Rapid population or vehicle miles traveled (VMT) growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the county/area associated with the area source and mobile source emissions as contributing to the area violation, even if the monitor in that county is attaining the ozone NAAQS.” However, EPA provided no documentation or reference in support of this statement. Further, while DeSoto County has experienced growth, the ozone values in the County, as well as other monitors in the area, have actually steadily decreased. The following chart (designated as Chart 7 of MDEQ's Response to EPA's 120 Day Letter) shows the growth trend and the ozone values since 2000. If the population growth in DeSoto County were a contributing factor, then it would be evidenced by increased ozone readings by the DeSoto County monitor, which obviously hasn't occurred.

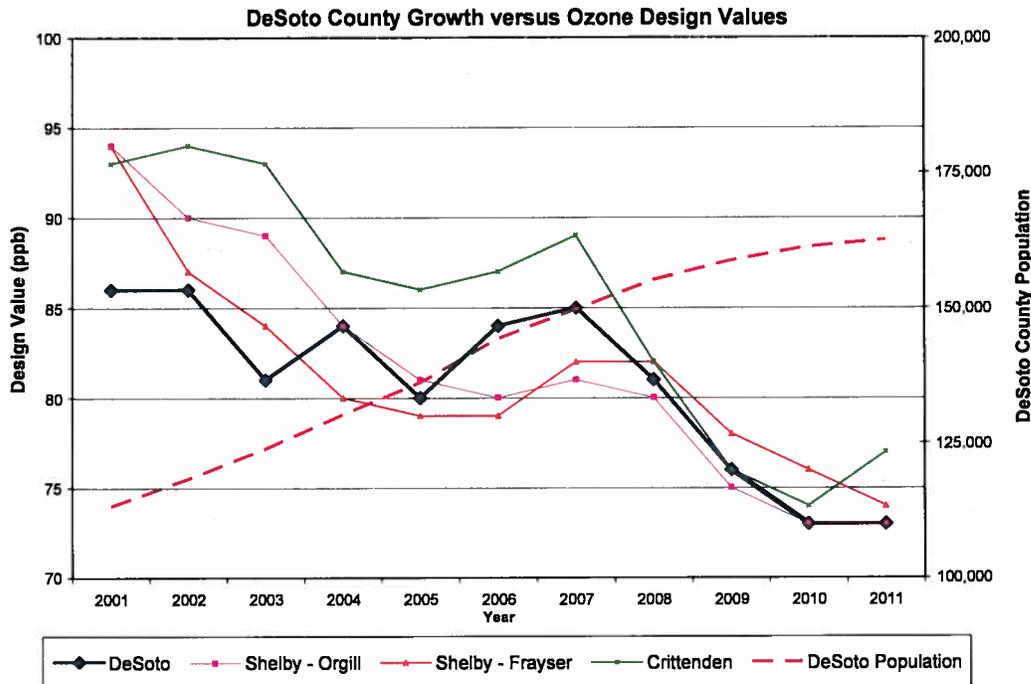


Chart 7: DeSoto County Growth versus Ozone Design Values

Simple deductive reasoning therefore disproves EPA’s unsupported claim that the increase in population contributes to increased ozone levels. Not only has the increased population of DeSoto County not resulted in increased monitor readings, DeSoto County has maintained the lowest averaged monitor reading within the area. EPA failed to acknowledge this error of fact and reason, as supported by the best available science.

C. Traffic and Commuting Patterns

Again, EPA states that “Rapid population or vehicle miles traveled (VMT) growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the county/area associated with the area source and mobile source emissions as contributing to the area violation, even if the monitor in that county is attaining the ozone NAAQS.” Again, EPA provided no documentation or reference in support of this statement. Further, while DeSoto County has experienced growth, the ozone values in the County, as well as other monitors in the area, have actually steadily decreased. EPA’s conclusion is simply not supported by the best scientific evidence.

EPA also failed to examine or address the much higher than average commercial heavy duty diesel traffic in both Shelby County, TN and Crittenden County, AR. Heavy duty diesel truck emissions are a significant source of NOx emissions. The following figure (designated as Figure 3 of MDEQ’s Response to EPA’s 120 Day Letter) shows the truck traffic along the interstates across the southeast portion of the country.

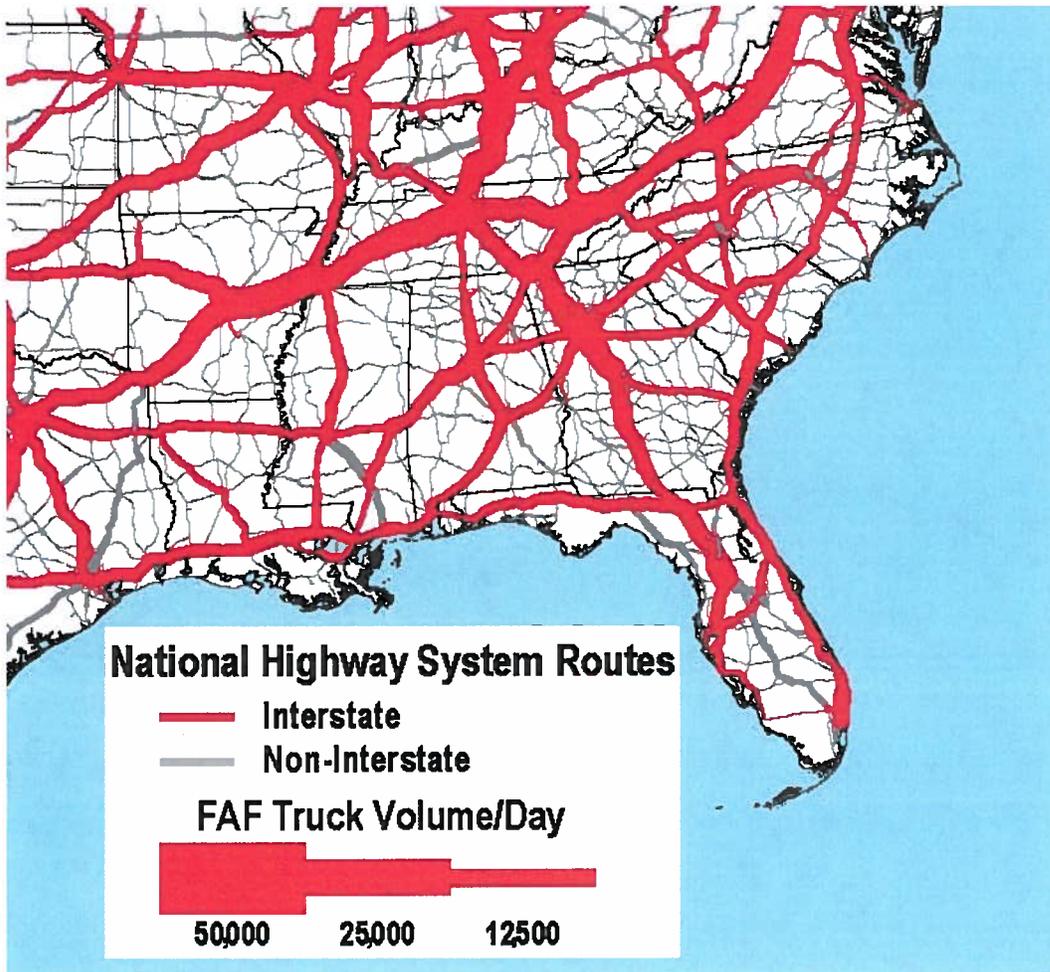


Figure 3: Average Daily Heavy Duty Diesel Truck Traffic (2007)

Interstate 40 is one of the busiest routes for heavy duty diesel truck traffic in the nation, and passes directly through Shelby and Crittenden Counties. Along I-40 over 50% of the traffic in Crittenden County and 35% in Shelby County is from heavy duty diesel trucks. In DeSoto County, 18% of the rural interstate traffic along I-55 is from heavy duty diesel trucks, which is slightly below the national rural interstate average of 19%. It should be noted that, as seen in Figure 2 of MDEQ’s Response to EPA’s 120 Day Letter, the Shelby County - Frayser monitor and the Crittenden County Monitor are both in close proximity to Interstate 40.

In addition to I-40, Shelby County and Crittenden County have significant commerce related traffic. The Memphis International Airport is located approximately three miles south of the central business district of Memphis and is home to the main FedEx Express global "Super Hub", which processes a significant portion of the freight carrier's packages. The airport also serves as a hub for Delta Airlines.

The International Port of Memphis is fourth largest inland Port in the United States and covers the Tennessee and Arkansas sides of the Mississippi River. The

Memphis/ West Memphis area is the number three rail center in the United States with significant intermodal rail facilities in both Crittenden and Shelby Counties. West Memphis Arkansas also has the highest diesel sales in the nation with nine diesel fuel truck centers. Many of the truck centers are grouped together and are in close proximity to the Crittenden County monitor. This commerce activity poses a much more significant emissions contribution to the violating monitors than emissions in DeSoto County.

EPA also relied on the 2008 National Emissions Inventory (NEI) to supply the emissions data. The 2008 NEI incorrectly lists DeSoto County as having higher heavy duty diesel truck emissions than Crittenden County. Since the amount of heavy duty diesel truck traffic, and associated heavy duty diesel truck VMT is higher in Crittenden County, the 2008 NEI is incorrect in representing DeSoto County as having higher emissions associated with this sector. Thus, EPA relied in part on erroneous information in making its boundary designation.

D. Growth Rates and Patterns

DeSoto County has experienced moderate growth, approximately 5% per year since 2000. However, the growth rate has slowed significantly since 2006. The EPA-TSD cites a growth rate of 48% over the last decade, but using a percentage based rate is misleading because of the counties relatively low 2000 population. The real increase in numbers is 53,000 people over the last decade. Compared to the population of Shelby County (927,000) or the entire Memphis MSA (1,316,000), the growth is not significant.

EPA states that “Rapid population or vehicle miles traveled (VMT) growth (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the county/area associated with the area source and mobile source emissions as contributing to the area violation, even if the monitor in that county is attaining the ozone NAAQS.” However, EPA provided no documentation or reference to prove this statement. While DeSoto County has experienced growth, the ozone values in the County, as well as other monitors in the area, have actually decreased steadily. The following chart (designated as Chart 7 of MDEQ’s Response to EPA’s 120 Day Letter) shows the growth trend and the ozone values since 2000. If the population growth in DeSoto County were a contributing factor, then it would be evidenced by increased ozone readings by the DeSoto County monitor, which obviously hasn’t occurred.

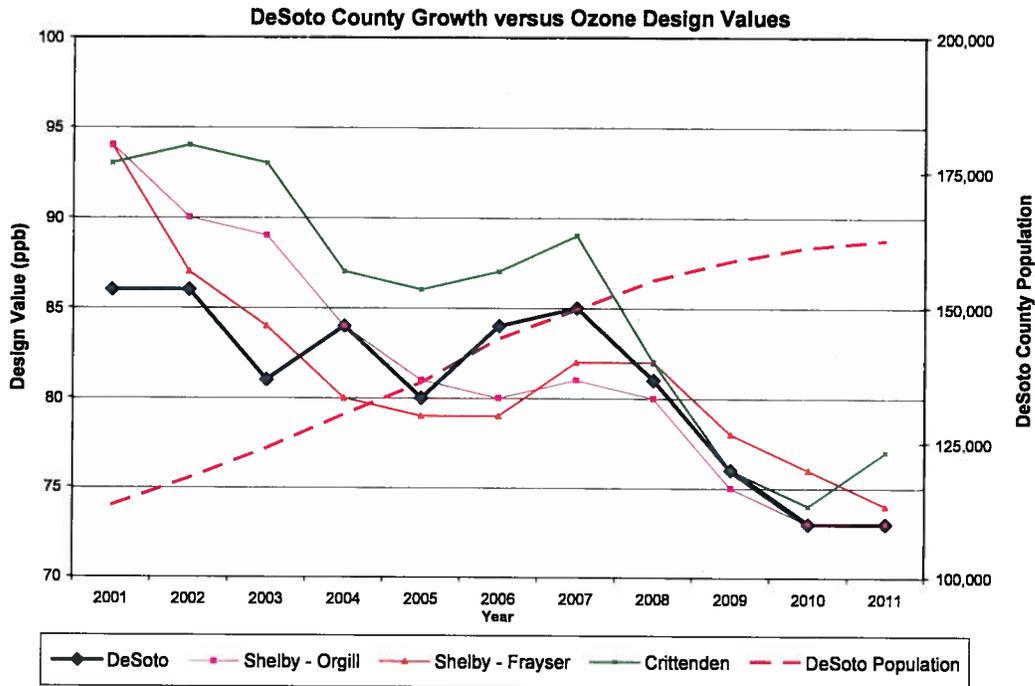


Chart 7: DeSoto County Growth versus Ozone Design Values

E. Level of Control of Emission Sources

EPA’s technical support document did not address this factor at all. As stated in MDEQ’s factor analysis, there are few major sources in the county to control. The few facilities located in Mississippi are well controlled. Southaven Power is a newer gas cogeneration plant that meets BACT standards, Rexam Beverage Can has VOC capture and control devices to control emissions beyond NSPS requirements, and Texas Gas has voluntarily opted to include operational restrictions in its permit that reduces NOx emissions during Ozone Season. Thus, while there are only a few major sources to control, those sources have worked with MDEQ through their permits to engage controls that far exceed any state and/or federal requirements.

Mobile and area sources are the largest category of emissions in the area and MDEQ and the governances in the area have put measures in place to reduce those emissions to improve the air quality in DeSoto County. Mississippi has revised the Air Pollution Regulations to prohibit all open burning on Ozone Action Days. Open Burning is banned on all days in Hernando. Also, DeSoto County and the cities within the county have enacted strict idle reduction policies to reduce mobile source emissions from the county.

A marginal non attainment designation will not require further controls from mobile or area sources in DeSoto County, nor will local controls be necessary to reduce emissions in the area. As previously stated, mobile source emissions will be drastically reduced over the next several years due to national emission control standards effecting mobile sources.

Factor 3 – Meteorology

MDEQ asserts that EPA unsoundly applied its analysis of meteorology in its use of the HYSPLIT model and its use of wind roses as indicators of atmospheric transport. MDEQ showed conclusively the following factors:

- On most days, 24-hour back trajectories were less than 200 miles long for the Memphis-Frayser site during the period of 2006-2010, indicating that the average wind speeds were less than 8 mph.
- When there is a light wind regime, wind directions can vary significantly at the surface.
- HYSPLIT uses surface and upper air wind conditions to calculate back trajectories. In this case, surface winds from the Memphis NWS station were used, but the closest upper-air wind data site is located in Little Rock, Arkansas - ~130 miles from Memphis.
- HYSPLIT is not accurate under light wind conditions because of the light wind direction variability.

Because of these issues, a back trajectory analysis using HYSPLIT is patently unreliable in determining if transport was occurring on most ozone exceedance days.

EPA also included surface wind roses for the Memphis area as additional analyses. Even while EPA conceded in its Response to Significant Comments that the use of wind roses as the sole indicator of atmospheric transport is not the preferable approach, EPA's use of wind roses showed wind direction variability, which EPA then wholly failed to factor into their analysis.

Finally, EPA cites comments from Arkansas concerning the ATMOS study (discussed in under Factor 1 – Air Quality Data). EPA states that a key point of this analysis indicates that the monitoring site with the maximum design value for the area varies from year to year based on the frequency of meteorological conditions that are conducive to high ozone concentrations at the specific monitoring sites. EPA further states that their analyses indicated that the maximum ozone design value monitor moves based on the predominant winds during a three-year period and all monitors should be considered. Significantly, EPA failed to state that DeSoto County has never had the highest ozone design value in the Memphis area for any year, going back to at least to the 1995-1997 period.

Thus, EPA failed to apply the best available scientific evidence in a sound manner, as a sound application cannot prove by any reasonable deduction that DeSoto

County is sufficiently contributing to violations at the offending monitor – or at any other monitor in the designated boundary.

EPA stated that sources in DeSoto County could *possibly* have contributed to elevated ozone locations at the Shelby County Frayser ozone monitor. Given the significance of a designation of nonattainment, “*possible*” contribution should not be equated with “*sufficient*” contribution. In addition, the back trajectories shown in the TSD travel over areas of Memphis prior to arriving at the Frayser monitor with much higher NO_x and VOC emissions density than DeSoto County. This information was not taken into consideration by EPA.

The TSD also states that “EPA’s analysis of meteorology and the conceptual model for high ozone events in the Memphis area **suggests** that DeSoto County is contributing to the violation in Shelby County...” Again, a “*suggestion*” is not a strong basis for including DeSoto County in the non-attainment area based on *sufficient* contribution.

In its Responses to Significant Comments, EPA states “In those cases where timing constraints and the lack of additional information prevented a more detailed assessment, EPA believes the default wind rose analyses, in conjunction with the remainder of the multi-factor analysis, can provide an adequate assessment of appropriate boundaries.” MDEQ believes this statement indicates that EPA rushed to judgment, thereby failing to base its decision on the best available scientific knowledge. MDEQ went to great lengths to provide EPA with detailed information in order that EPA could adequately evaluate the significance the best available science has on its decision. While MDEQ is aware of and understands time constraints, for EPA to ignore the best available science when it is fairly presented results in a punitive decision for Mississippi and DeSoto County, which decision should be reconsidered.

Factor 4 - Geography / Topography

All parties agree that this factor is not a significant factor in the analysis.

Factor 5 – Jurisdictional Boundaries

EPA’s Final TSD states “[o]nce EPA identified the general areas that the Agency anticipated would be included in the non-attainment area, EPA then considered existing jurisdictional boundaries for the purpose of providing a clearly defined legal boundary and to help identify the areas appropriate for carrying out the air quality planning and enforcement functions for non-attainment areas.” While state and county barriers do not stop the flow of air from one area to another, they should be given greater consideration in the case of DeSoto County.

As previously noted, the monitor in DeSoto County has always attained the Ozone standard. Section 181 of the Clean Air Act sets forth the requirements for areas that are designated as non-attainment and the methods for coming back into attainment

and being reclassified as attainment. Section 126 of the CAA even gives a non-attaining area the ability to address emissions from upwind sources. While EPA asserts that DeSoto County is contributing to the violations in Shelby County, they do so based on DeSoto County's growth, having the second highest population, VMT, and emissions in the area, even though they are a distant second compared to Shelby County. It is clear that EPA included DeSoto County because it "*may be*" or "*appears*" to "*possibly*" be contributing.

Since DeSoto County is in a separate state from the counties with the violating monitor and the bulk of the emissions, if it is designated as non-attainment, it would be stuck with the designation without being afforded the provisions in the CAA to get back into attainment. The county's monitor is attaining the standard and there is no indication that even the most stringent controls put in place in the County would help Shelby County, Tennessee attain the standard. Accordingly, DeSoto County should only be included if there is viable strong evidence that it is significantly contributing to the exceedences in Crittendon and Shelby – a non-attainment designation should not be based on mere suggestion or speculation that DeSoto County may be contributing to exceedences in the other counties. The information presented under the other factors demonstrates that DeSoto County is not sufficiently impacting or contributing to the violations in Shelby County. The boundary for the nonattainment area should be state line and DeSoto County should not be included in the nonattainment area.

DeSoto County has no defined legal authority for the purpose of carrying out the air quality planning and enforcement functions for adjacent nonattainment areas. Commercial traffic on I-40 and other industrial sources near the offending monitor are all under control of Tennessee and Arkansas. The consideration of this factor points most strongly in excluding DeSoto County from the nonattainment designation.

CONCLUSION

For the reasons set forth above, Mississippi hereby petitions EPA to reconsider its decision to include the northern portion of DeSoto County, Mississippi, in the boundary for its nonattainment designation. EPA can, within its discretion, recognize the errors it made in its designation decision, and more appropriately apply the best and most recent scientific data to exclude DeSoto County. Exclusion would be consistent with prior EPA decisions, and would be well supported by the scientific evidence adduced by MDEQ. Further, the case-by-case evaluation of the guidance factors supports the exclusion of DeSoto County and would not be inconsistent with the treatment of any other entities within EPA's regulatory control.