



Chase Tower, 17th Floor
P.O. Box 1588
Charleston, WV 25326-1588
304-353-8000
Fax: 304-933-8704
www.stepToe-johnson.com

Writer's Contact Information
Kathy.beckett@stepToe-johnson.com
(304) 353-8172

May 16, 2022

The Honorable Michael Regan
Administrator U.S. Environmental Protection Agency
Mail Code 1101A
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
(Via email: regan.michael@epa.gov)

RE: Control of Air Pollution From New Motor Vehicles;
Heavy-Duty Engine and Vehicle Standards; Proposed Rule;
Docket ID No. EPA-HQ-OAR-2019-0055

Dear Administrator Regan:

The Midwest Ozone Group (MOG) is pleased to take this opportunity to comment on EPA's proposed rule entitled "Control of Air pollution From New Motor Vehicles; Heavy-Duty Engine and Vehicle Standards."¹ 87 Fed. Reg. 17,414 (March 28, 2022). According to the docket, the comment period on this proposal is open through May 16, 2022.

MOG is an affiliation of companies and associations that draws upon its collective resources to seek solutions to the development of legally and technically sound air quality programs.² MOG's primary efforts are to work with policy makers in evaluating air quality policies by encouraging the use of sound science. MOG has been actively engaged in a variety of issues and initiatives related to the development and implementation of air quality policy, including the development of transport rules (including the Revised CSAPR Update), NAAQS

¹ These comments were prepared with the technical assistance of Alpine Geophysics, LLC.

² The members of and participants in the Midwest Ozone Group include: Alcoa, Ameren, American Electric Power, American Forest & Paper Association, American Iron and Steel Institute, American Wood Council, Appalachian Region Independent Power Producers Association, Associated Electric Cooperative, Big Rivers Electric Corp., Buckeye Power, Inc., Citizens Energy Group, Cleveland Cliffs, Council of Industrial Boiler Owners, Duke Energy Corp., East Kentucky Power Cooperative, ExxonMobil, FirstEnergy Corp., Indiana Energy Association, Indiana-Kentucky Electric Corporation, Indiana Utility Group, LGE/ KU, Marathon Petroleum Company, National Lime Association, North American Stainless, Nucor Corporation, Ohio Utility Group, Ohio Valley Electric Corporation, Olympus Power, Steel Manufacturers Association, and City Water, Light & Power (Springfield IL).

standards, nonattainment designations, petitions under Sections 126, 176A and 184(c) of the Clean Air Act (“CAA”), NAAQS implementation guidance, the development of Good Neighbor State Implementation Plans (“SIPs”) and related regional haze and climate change issues. MOG Members and Participants own and operate numerous stationary sources that are affected by air quality requirements including the ozone NAAQS. MOG seeks the development of technically and legally sound air pollution rules and actions that may impact on their facilities, their employees, their contractors, and the consumers of their products.

MOG has submitted an initial set of comments to this docket on February 20, 2020 (EPA-HQ-OAR-2019-0055-0279). Subsequently, MOG undertook new air quality modeling that directly assesses how the implementation of a CTI 90% NO_x emission reduction scenario is likely to improve air quality in the continental United States. A copy of MOG’s letter to the EPA dated July 6, 2020, is attached and incorporated into these comments.

MOG is pleased to see EPA undertake this initiative under Section 202(a)(1) of the Act. While states also have an obligation to address emissions from mobile sources as part of their nonattainment SIP planning, EPA has additional authority that is critical to the objectives of the Clean Air Act. In these comments MOG will not only offer its support for the CTI and relative contribution findings generated by others, but also offer the results of air quality modeling data performed for MOG by Alpine Geophysics that assess the contribution that mobile sources make to ozone concentration at various monitors in the East. This data confirms the significant role that mobile sources play in determining the quality of our air and the importance of the rule that EPA has proposed and is consistent with the findings of EPA published with this proposed rule.

The proposed rule to regulate emissions from Heavy Duty Trucks is very relevant to MOG as it continues to assess ozone improvement initiatives and state implementation plan development. MOG recommends EPA include directed regulatory provisions concerning inspections and enforcement to address circumstances like the defeat devices issues. Such provisions will significantly drive reliable emissions reductions. It is essential that EPA’s mobile source regulatory program that will impact state implementation plan development be balanced for upwind and downwind states. MOG cautions EPA to ensure the implementation of this proposed rule regulating emissions from heavy duty trucks will include direction to states relative to implementation that will target alignment encouraging all states to manage mobile emissions from heavy duty trucks in a collaborative manner. The Clean Air Act provides for the authority to regulate mobile sources within the state implementation plan strategies supporting the NAAQS as specifically noted by EPA in its proposed FIP for the 2015 ozone NAAQS.³ The *Wisconsin v. EPA* D.C. Circuit opinion concluded that EPA exceeded its statutory authority under the Good Neighbor Provision “by issuing a Rule that does not call for upwind States to eliminate their substantial contributions to downwind nonattainment in concert with the attainment deadlines.” 938 F.3d 303, 318 (D.C. Cir. 2019). The *Wisconsin* remand directed EPA to address the downwind state “deadline” in such a manner as to “harmonize” the deadlines of upwind and downwind states and to apply “parallel timeframes.” *Id.* at 312, 314. The D.C. Circuit repeatedly has explained the CAA directive to “harmonize” and manage the relationship described as parallel between the Good Neighbor obligations for upwind states and statutory

³ 87 Fed. Reg. 2077, fn. 142. “The EPA recognizes that mechanisms exist under title I of the CAA that allow for the regulation of the use and operation of mobile sources to reduce ozone-precursor emissions.”

attainment deadlines for downwind areas. That relationship is one of “par,” using the Court’s term, meaning to be judged on a common level with the other.⁴ With this proposed rule is opportunity to implement mobile source emissions reductions that will impact ambient air quality for upwind and downwind states.

The air quality analysis prepared by Alpine Geophysics offers ozone source apportionment data relative contribution calculations for the various source sectors from multiple upwind states to downwind receptors⁵ which continues to demonstrate that local source emissions from mobile categories have the greatest relative contribution to projected ozone concentrations in the domain.

Figure 1 provides recent ozone source apportionment results for the Queens County, New York monitor (360810124) in the 2023 projection year. The figure shows geographic, source category-based relative contribution to the 2023 ozone design value predicted at the monitor. In the figure, the height of each bar represents the relative contribution to other geographic (state or region) sources of category-based emissions (individual colors within each bar). Of importance in this figure, the bars for New York and adjacent state New Jersey dominate the list of anthropogenic emission contributions and within that bar, the blue (onroad mobile) and orange (nonroad mobile + area + marine/rail/air) are of greatest relative modeled contribution.

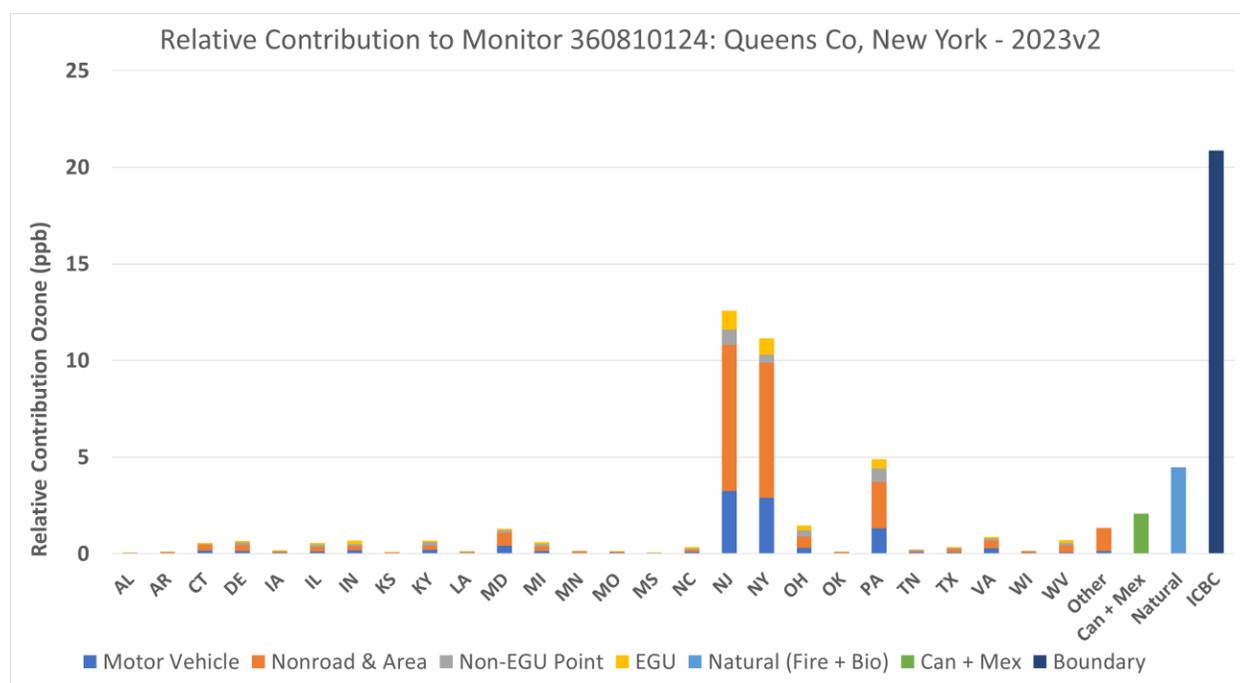


Figure 1. Relative contribution (ppb) of source region and category to predicted 2023 ozone design value at Queens County, New York receptor (360810124).

When we look at the aggregate of all categories, regardless of geography (Figure 2), we also see that motor vehicles (15%) and nonroad mobile + area + marine/rail/air (33%) dominate

⁴ *Definition of Par*, MERRIAM-WEBSTER, <https://www.meriam-webster.com/dictionary/par> (last visited Mar. 24, 2022).

⁵ http://www.midwestozonegroup.com/files/Ozone_Modeling_Results_Supporting_GN_SIP_Obligations_Final_Dec_2017_.pdf

the relative contribution to projected ozone concentrations.

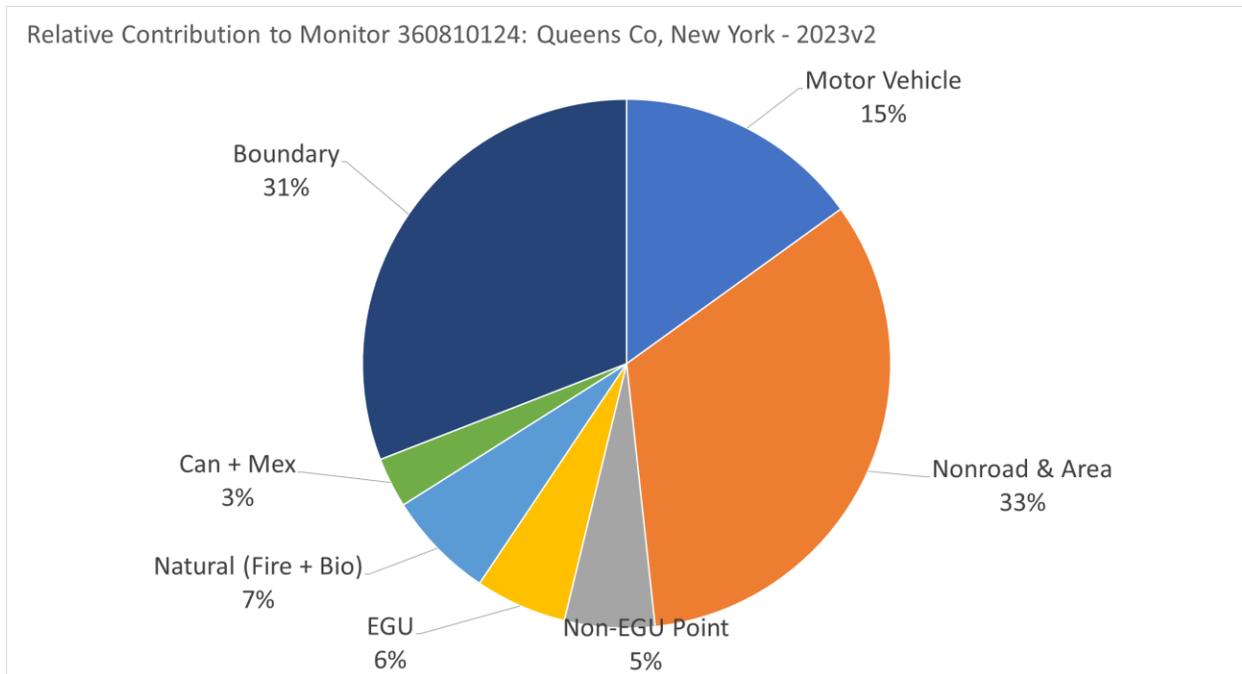


Figure 2. Relative contribution (%) of source categories to predicted 2023 ozone design value at Queens County, New York receptor (360810124).

Similar results are seen in Figure 3 at the coastal Connecticut site at Fairfield (090010017) with emissions from New York, New Jersey, and Connecticut dominating the geographic contributions. Again, like the Queens County, New York monitor, emissions from the blue (onroad mobile) and orange (nonroad mobile + area + marine/rail/air) combine for over 56% of the modeled ozone concentrations. This is also seen in Figure 4 when geography is removed from the equation.

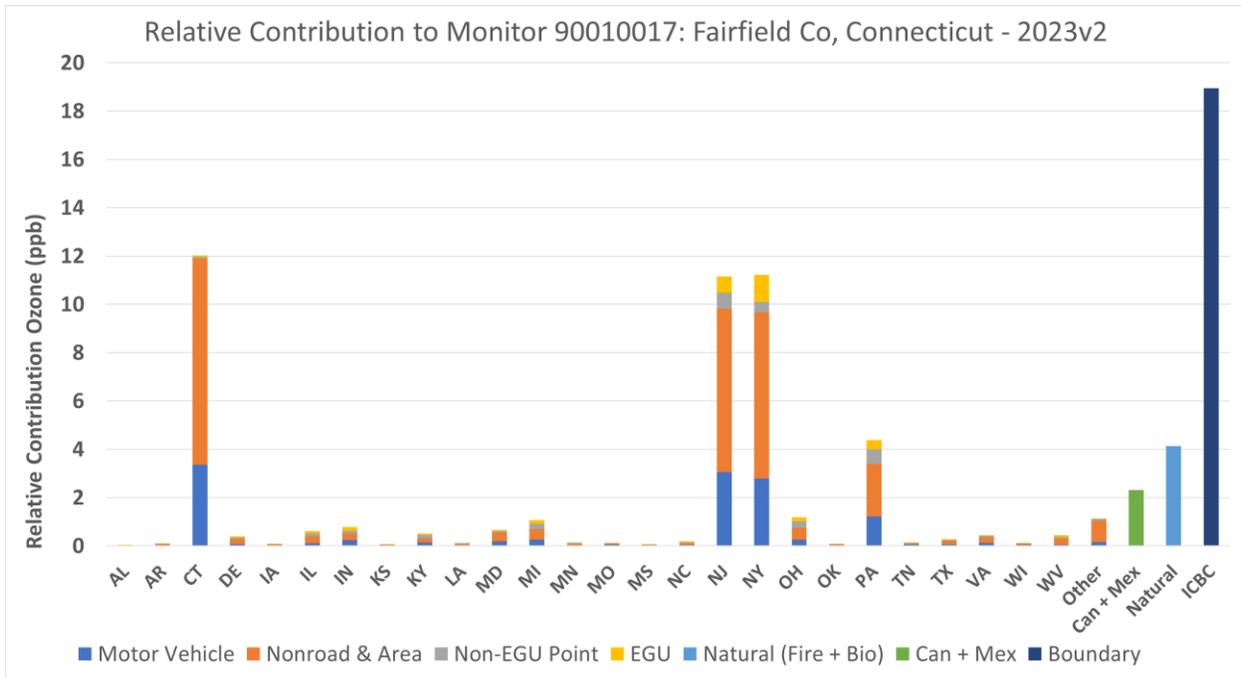


Figure 3. Relative contribution (ppb) of source region and category to predicted 2023 ozone design value at Fairfield, Connecticut receptor (090010017).

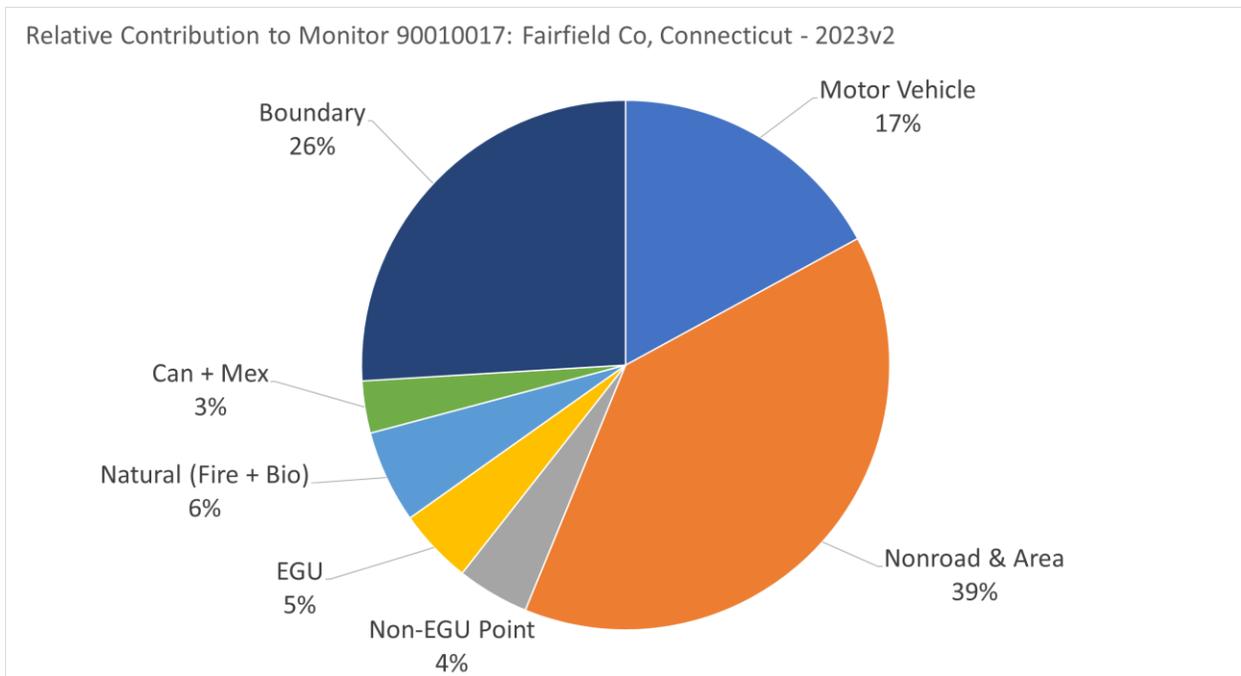


Figure 4. Relative contribution (%) of source categories to predicted 2023 ozone design value at Fairfield, Connecticut receptor (090010017).

This pattern is also seen across most of the eastern U.S. and as seen in Figure 5, motor vehicle emissions (red piece of each pie) are a significant percentage of relative contribution to 2023 ozone concentration predictions from U.S. anthropogenic sources at most monitors.

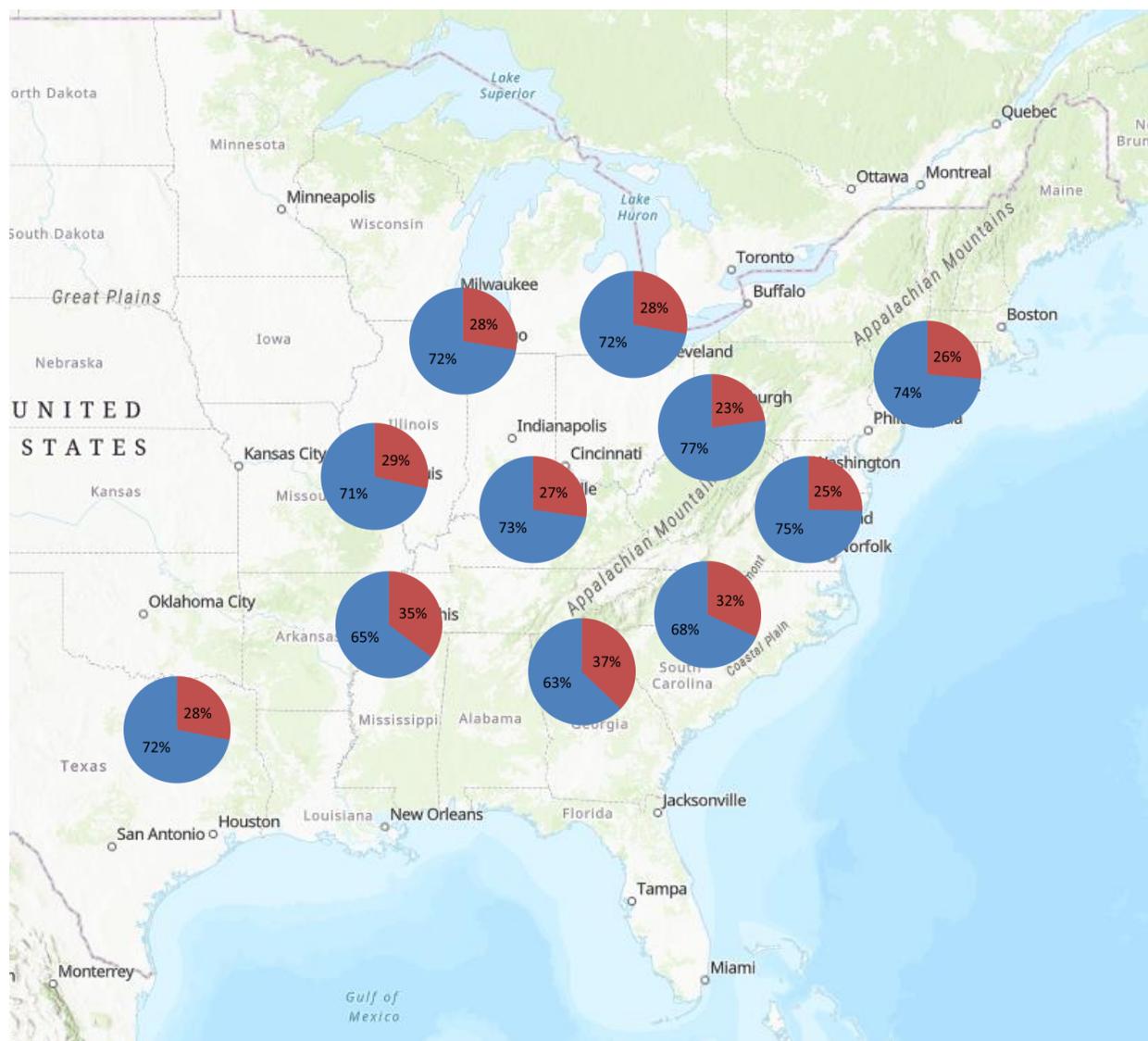


Figure 5. Relative contribution to 2023 ozone concentration predictions from U.S. anthropogenic sources. Red indicated onroad mobile source emission contribution. Blue indicates all other U.S. anthropogenic source emission contribution.

Based on the technical work of Manufacturers of Emission Controls Association (MECA), it is estimated that a 90% reduction in NOx emissions from these mobile sources (to a rate of 0.02 g/bhp-hr) is both technically feasible and cost effective adding only 1% to 1.6% to the cost of a model year (MY) 2027 Class 8 truck. See “STATEMENT OF THE MANUFACTURERS OF EMISSION CONTROLS ASSOCIATION ON THE U.S. ENVIRONMENTAL PROTECTION AGENCY’S ADVANCED NOTICE OF PROPOSED RULEMAKING: CONTROL OF AIR POLLUTION FROM NEW MOTOR VEHICLES: HEAVY-DUTY ENGINE STANDARDS” February 20, 2020, EPA-HQ-OAR-2019-0055-0365. According to MECA’s estimate of a cost benefit of \$1,000-\$5,000 per ton of NOx reduced is cost effective relative to most remaining stationary controls.

Through the sponsorship of MECA, Oak Leaf Environmental Inc. (Oak Leaf) completed a 48-state emissions impact analysis of a possible CTI scenario that would result from EPA

aligning their final CTI rule to the 90% NOx emission reduction levels as proposed by the California Air Resources Board (CARB) and implemented and phased-in through fleet turnover assumed in MOVES through 2035. This Oak Leaf technical support document is attached to these comments and identified as Exhibit A. The report is also available on the MOG web site.⁶ The basis for the CTI scenario was the most recent information – available at project commencement – from CARB (September 26, 2019 workshop proposal) with the understanding that EPA and CARB are working on a nationally uniform regulatory framework.

The foundation of the evaluation was the EPA inventory projection for 2028fh⁷. The “2035 Base Case” inventory was developed to include an on-road fleet projection to 2035 with no change in the underlying regulatory context. The “2035 Control Case” inventory was developed to include both the 2035 fleet projection and the impacts of the proposed CTI on on-road vehicle emissions. Accordingly, the emissions impacts of the CTI are defined by the difference between the 2035 Control Case and 2035 Base Case inventories.

This is a consistent methodology for the development of the modeling platform compared to EPA’s proposal in that both analyses maintain the 2028fh projection for non-mobile categories and updating projections for mobile sources. EPA’s modeling for this proposed rule uses a 2045 projection for mobile sources, whereas Oak Leaf has projected to 2035. The Oak Leaf product also differs from the EPA proposal in that Oak Leaf’s estimates assume NOx standards begin in MY 2024 compared to EPA’s action that sets NOx standards beginning in MY 2027.

The modeled year of 2035 was chosen to allow as much phase-in of low NOx trucks meeting the future modeled CTI emission limits while still providing adequate confidence from the air quality perspective. Given that the new truck regulations begin implementation in 2024 and heavy-duty trucks last 20-30 years on the road, the 2035 timeframe represents an intermediate level of CTI truck penetration. It is expected that further NOx reductions will be realized beyond the 2035 modeled year as the heavy-duty truck fleet continues to turn over to the cleanest technology vehicles.

Figure 6 presents the relative, annual NOx benefit of the potential CTI scenario in 2035 at a county-level resolution. The percent benefit is estimated as a reduction in the total on-road NOx inventory (both light and heavy-duty vehicles). The range in benefit, by county, is between 4 and 60 percent.

⁶ Modeling Inventory of Potential Heavy-Duty Cleaner Trucks Initiative Scenario Final Report, Prepared By: Jeremy G. Heiken Oak Leaf Environmental, Inc, June 2020 (http://www.midwestozonogroup.com/files/OakLeaf_Report_June_2020.pdf); Appendix A - National & State CTI Scenario Summary (http://www.midwestozonogroup.com/files/Appendix_A_-_National_State_CTI_Scenario_Summary.xlsx); Appendix B - National & State Activity Summary (http://www.midwestozonogroup.com/files/Appendix_B_-_National_State_Activity_Summary.xlsx).

⁷ <https://www.epa.gov/air-emissions-modeling/2016v1-platform>

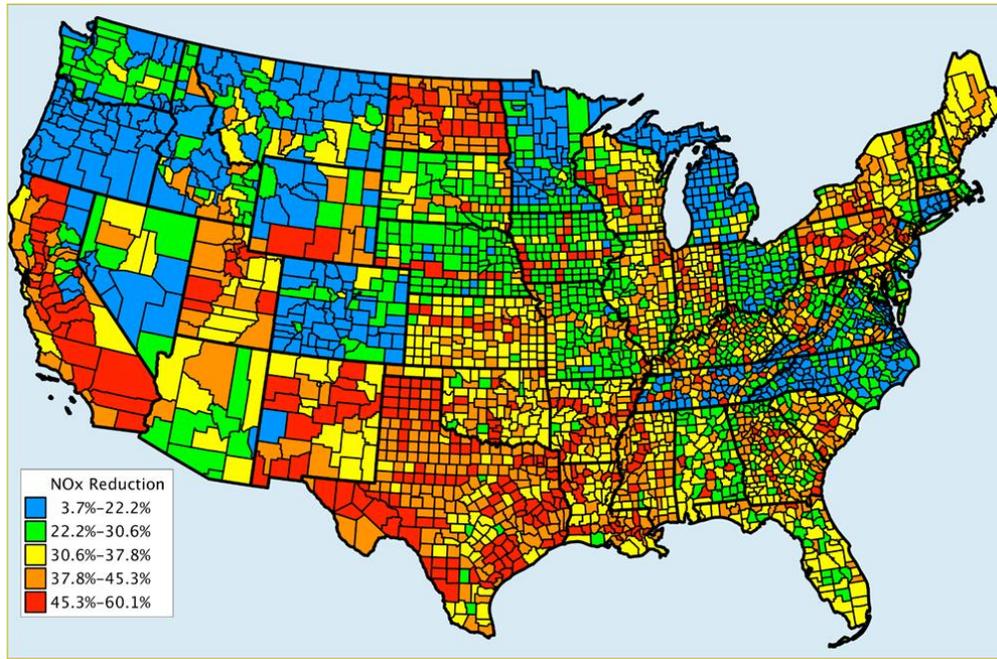


Figure 6. Annual NOx Benefit (Percent Reduction in On-Road Inventory) in 2035

Working with this 2035 scenario, Alpine Geophysics, LLC (Alpine) through the sponsorship of MOG, merged the onroad emissions data with a 2028 “base case” modeling simulation already completed. The Technical Support Document related to Alpine’s 2028 “base case” is attached and identified as Exhibit B and is available on the MOG web site.⁸

Alpine then ran photochemical grid modeling (PGM) with the Comprehensive Air Quality Model with Extensions (CAMx) model to generate future CTI scenario concentrations of ozone and PM_{2.5}. This modeling of the CTI scenario is described in a Technical Support Document that is attached to these comments and identified as Exhibit C and is available on the MOG web site.⁹

Together, this work assesses how the change in mobile source emissions between the 2028 base case and the CTI scenario would change the ozone and PM_{2.5} ambient air quality projections at receptors in the continental United States.

As illustrated in Figure 7, the modeled 2028 base year 8-hour ozone design values were found to be above the 70 ppb NAAQS in the states of California, Utah, Colorado, Texas and

⁸ Air Quality Modeling Technical Support Document for 12km Modeling of EPA 2028fh Base Case Technical Support Document Prepared by: Alpine Geophysics, LLC, May 2020 (http://www.midwestozonegroup.com/files/Alpine_Geophysics_-_CTI_Scenario_Modeling_TSD_-_June_2020.pdf)

⁹ Cleaner Trucks Initiative Scenario Modeling Using EPA 2028fh Modeling Platform Technical Support Document Prepared by: Alpine Geophysics, LLC, June 2020 (http://www.midwestozonegroup.com/files/Alpine_Geophysics_-_CTI_Scenario_Modeling_TSD_-_June_2020.pdf)

Connecticut.

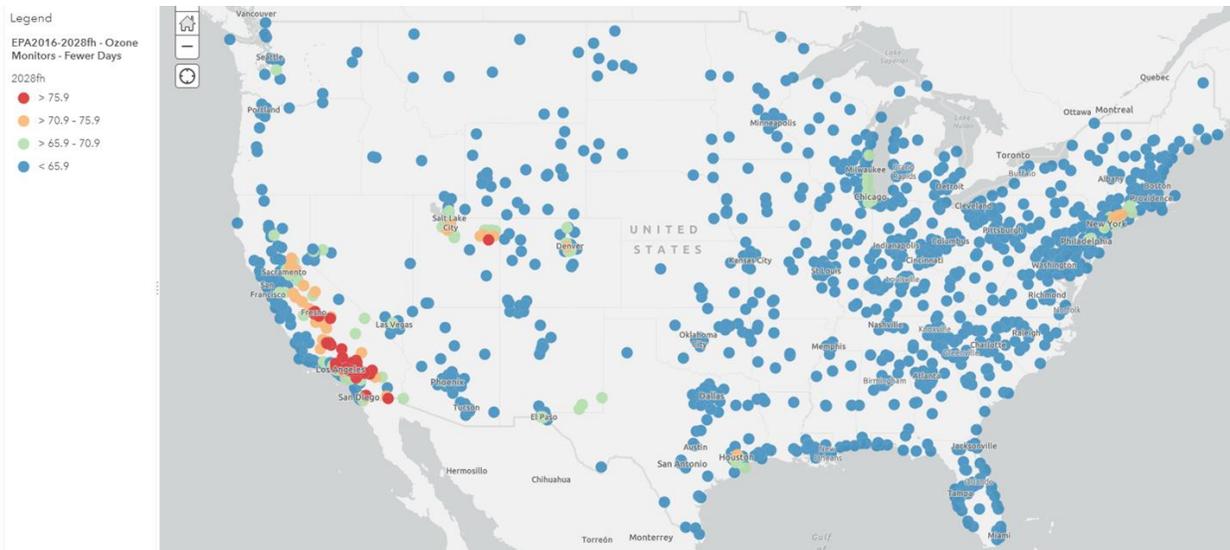


Figure 7. 2028 Base Case – Ozone Design Values (ppb)

As shown in Figure 8, applying the 90% NO_x emission reduction CTI scenario to the 2028 base year eliminates ozone nonattainment everywhere east of the Rockies and in Denver and leaves only the states of California and Utah with 70 ppb 2015 ozone NAAQS nonattainment areas. Multiple monitors in California and in Salt Lake County, Utah also show modeled attainment with the CTI strategy.

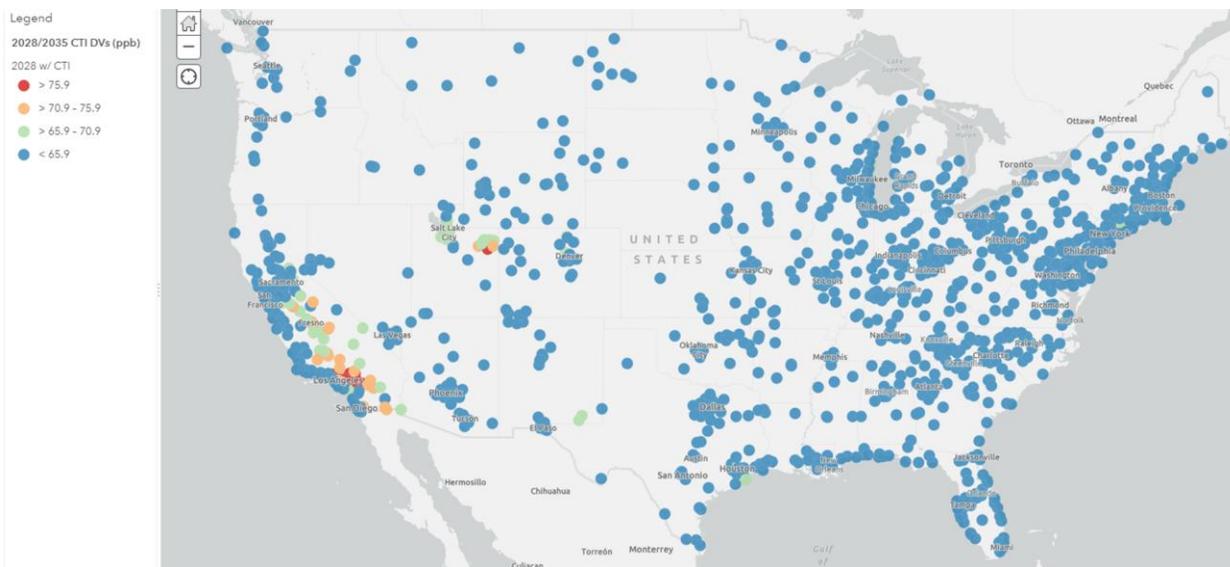


Figure 8. Calculated MDA8 Ozone Design Values (ppb) resulting from CTI strategy run.

As shown in Figure 9, the greatest ozone impact of the strategy is seen in urban areas and along highway corridors with reductions of up to 6.5 ppb seen in the west (San Bernardino) and 4.9 ppb seen in the east (Atlanta).

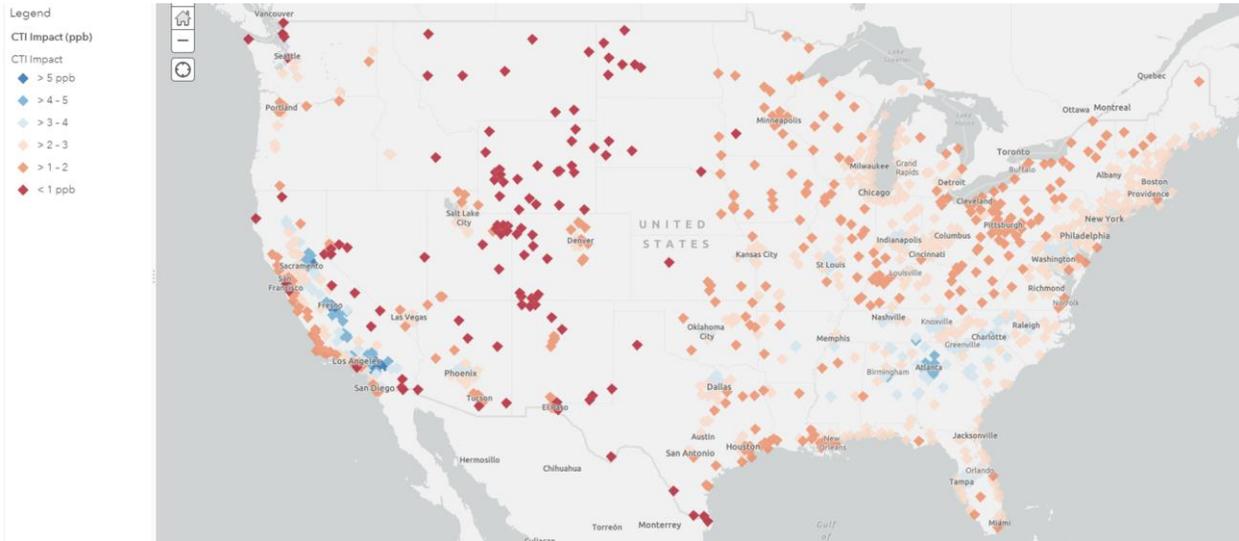


Figure 9. Calculated change in Ozone Design Values (ppb) resulting from CTI strategy run.

The CTI strategy impacts on the annual $PM_{2.5}$ design value nationwide are shown in Figure 9 with modeled attainment changes occurring at monitors in Madera, San Joaquin, and Stanislaus counties in California. The greatest annual $PM_{2.5}$ impacts are reductions of $0.64 \mu\text{g}/\text{m}^3$ (4.1%) seen in the west (Kern County, CA) and $0.21 \mu\text{g}/\text{m}^3$ (2.3%) reduction in the east (Chicago).

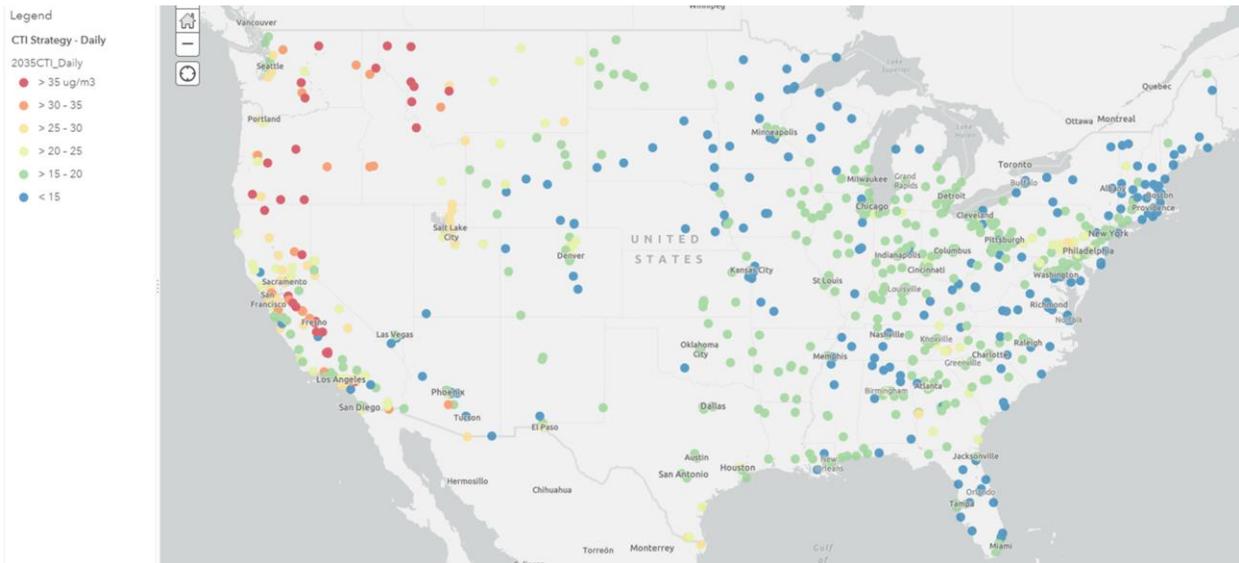


Figure 10. Annual $PM_{2.5}$ DVs ($\mu\text{g}/\text{m}^3$)

From a daily (24-hour) $PM_{2.5}$ perspective, Figure 11 shows daily $PM_{2.5}$ design values nationwide. As with the annual $PM_{2.5}$ modeling, areas shown to move to modeled attainment as a result of the CTI strategy include Madera, Merced, and San Joaquin counties in California. The greatest daily $PM_{2.5}$ impacts are reductions of $4.5 \mu\text{g}/\text{m}^3$ (9.8%) seen in the west (Tulare County, CA) and $0.9 \mu\text{g}/\text{m}^3$ (4.5%) reduction in the east (Chicago).

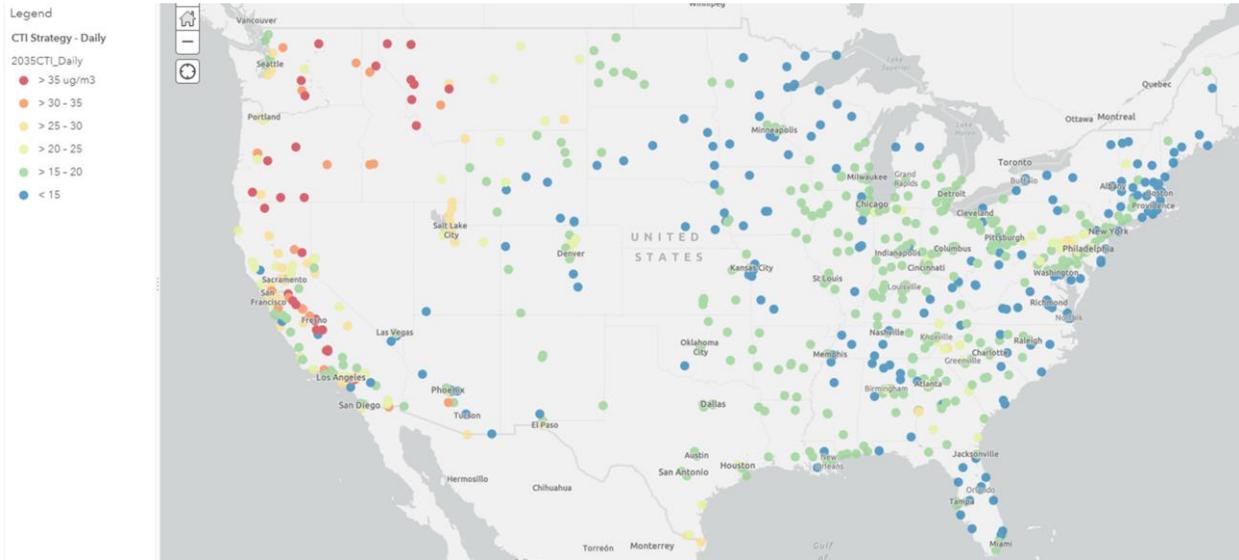


Figure 11. Daily PM_{2.5} DVs (µg/m³)

This modeling is consistent with EPA’s proposed rule modeling¹⁰ of 2045 with the Community Multiscale Air Quality (CMAQ) model in both geography and magnitude for ozone and PM concentrations with the implementation of the control program.

The modeling data provided in these comments illustrates the need for measurable improvements to environmental conditions in communities that are heavily impacted by dense traffic. Ambient improvements to PM, PM_{2.5}, and ozone represented by this proposed rule will serve to facilitate the development of implementation outcomes of local environmental benefits attributable to controls on mobile sources like heavy duty trucks. EPA’s burden is to effectively implement this rule per Executive Order 12898, “Federal agencies must identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations.”

CONCLUSION

Given the technical availability and cost effectiveness of achieving a 90% reduction of NOx emissions from heavy duty trucks by 2035 as established by MECA and by 2045 as demonstrated by EPA and given the remarkable improvement in air quality as demonstrated by the Alpine and EPA modeling, MOG urges that EPA finalize a rule calling for a 90% reduction in NOx emissions from heavy duty trucks.

Very truly yours,

Kathy G. Beckett
 Kathy G. Beckett
 Legal Counsel
 Midwest Ozone Group

¹⁰ Air Quality Modeling for the HD 2027 Proposal, Draft Technical Support Document (TSD), EPA-420-D-22-002, February 2022
<https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P101481P.pdf>

cc: Brian Nelson
Assessment and Standards Division
Office of Transportation and Air Quality
U. S. Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, MI 48105
nelson.brian@epa.gov