



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1201 ELM STREET, SUITE 500
DALLAS, TEXAS 75270

January 16, 2024

Mr. Cory Chism, Director
Office of Air
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Re: Dallas-Fort Worth (DFW) Severe Area Attainment Demonstration (AD) State Implementation Plan (SIP) Revision for the 2008 Ozone National Ambient Air Quality Standards (NAAQS), Project No. 2023-107-SIP-NR; Houston-Galveston-Brazoria (HGB) Severe Area AD SIP Revision for the 2015 Ozone NAAQS, Project No. 2023-110-SIP-NR; DFW and HGB Severe Areas Reasonable Further Progress (RFP) SIP Revision for the 2008 Ozone NAAQS, Project No. 2023-108-SIP-NR; the proposed revisions to 30 TAC Chapter 115, Control of Air Pollution from Volatile Organic Compounds, Project No. 2023-116-115-AI; and the proposed revisions to 30 TAC Chapter 117, Control of Air Pollution from Nitrogen Compounds, Project No. 2023-117-117-AI.

Dear Mr. Chism:

Thank you for acting timely to address the recently reclassified DFW and HGB Severe nonattainment areas under the 2008 ozone NAAQS. We appreciate the opportunity to review the five proposed SIP revisions that address these two areas. We have enclosed comments for your consideration regarding the proposed attainment demonstrations, the proposed RFP plans, and the proposed revisions to Chapters 115 and 117. We appreciate the work by the TCEQ in developing these documents.

We look forward to discussing the enclosed comments with you. Please feel free to contact me at magee.melanie@epa.gov or 214-665-7161 if you have questions.

Sincerely,

Melanie Magee

Melanie Magee
Section Supervisor, Infrastructure & Ozone Section

Enclosures

Enclosure: EPA's Comments

Acronyms used in EPA's comments:

Alternative Control Technology (ACT)
Best Available Control Technology (BACT)
Clean Air Act (CAA)
Control Techniques Guidelines (CTG)
Emissions Specifications for Attainment Demonstration (ESADs)
Exceptional Events (EE)
Limited English Proficiency (LEP)
Mass Emissions Cap and Trade (MECT)
National Ambient Air Quality Standards (NAAQS)
Oxides of Nitrogen (NO_x)
Reasonable Available Control Technology (RACT)
Scheduled Maintenance, Startup and Shutdown activity (SMSS)
Texas Commission on Environmental Quality (TCEQ)
Volatile Organic Compounds (VOC)

Project Number 2023-107-SIP-NR

Comments addressing DFW Attainment Demonstration (AD) Plan

We appreciate the detailed work submitted in the AD plan. We have the following concerns:

1. The TCEQ's proposal includes a Contingency Plan to satisfy the CAA sections 172(c)(9) and 182(c)(9) requirement to provide for specific contingency measures (CMs) that would take effect and result in emissions reductions if an ozone area fails to attain a NAAQS by the applicable attainment date or fails to demonstrate RFP. EPA commends the TCEQ's inclusion of contingency measures that appear to be prospective and conditional (i.e., that they occur in the future in response to a triggering event) in the proposed Contingency Plan, consistent with the January 2021 U.S. Court of Appeals for the District of Columbia Circuit vacatur of EPA's interpretation of the CAA to allow states to rely on already implemented control measures to meet the statutory requirements of section 172(c)(9) or 182(c)(9) for contingency measures in nonattainment plans for the ozone NAAQS. *Sierra Club, et al. v. EPA*, 985 F.3d 1055 (D.C. Cir. 2021). We offer the following recommendations to clarify certain aspects of TCEQ's proposal:
 - a. We appreciate Texas working to meet the requirement to have CMs for these areas. We note that EPA disapproved TCEQ's CMs submitted in response to these areas' reclassification to Serious.¹ In addition, EPA found that the DFW and HGB ozone nonattainment areas failed to attain by their Serious area attainment date and reclassified the areas to Severe.² As explained in the disapproval action cited above, TCEQ has an obligation to provide and implement approvable contingency measures as soon as possible to address the DFW and HGB areas' failure to attain by the serious attainment date. In addition, the TCEQ must provide CMs that would be implemented in the event the areas fail to make RFP as required for Severe areas or to attain by the Severe area attainment date.

¹ More information is provided in our final disapproval of contingency measures for the DFW and HGB Serious ozone nonattainment areas for the 2008 ozone NAAQS (see 88 FR 67957, October 3, 2023).

² More information is provided in our final determinations of attainment by the attainment date and reclassification of areas classified as Serious for the 2008 ozone NAAQS (see 87 FR 60926, October 7, 2022).

Please identify which of these measures would be triggered upon a failure to attain by the Severe date or meet a future RFP milestone, versus which of these measures will be implemented immediately as a result of the past failure to attain by the Serious date.

- b. The Contingency Plan outlines the contingency measure controls and process by which TCEQ would implement enough CMs in the applicable area to meet or exceed the required contingency reductions, calculated as 3% of the 2011 RFP base year emissions. For the DFW area, TCEQ has identified CMs for adoption (being proposed in concurrent rulemakings for 30 TAC Chapters 115 and 117) to achieve VOC reductions in excess of the 3%. We ask that TCEQ confirm for the record that, upon a triggering event (failure to attain or failure to make RFP), all identified CMs will be implemented without further action by the state or EPA to achieve these VOC reductions. It is unclear to EPA if the intent is to implement all measures relied upon to achieve the 3% reduction after a triggering event. If this is the intent, then EPA recommends clarifying this aspect. Conversely, if the intent is for TCEQ to make a choice of which measures to implement after the triggering event has occurred, then EPA is unclear on how such an approach comports with the CAA and applicable EPA guidance, and EPA recommends that TCEQ explain. In addition, further measure controls (industrial cleaning solvents and industrial adhesives) are proposed for adoption but would only be adopted for the DFW area if other measures change in response to comment such that additional reductions are necessary to cover the 3% emissions reduction requirement for CMs. We encourage Texas to adopt these further DFW area measure controls, and to consider implementing any measures yielding excess emission reductions as expeditiously as practicable to ensure emissions reduction progress continues to be made towards attainment.
 - c. The TCEQ's proposal outlines the process by which the proposed CMs would be triggered upon EPA publication of a notice in the Federal Register that the DFW area failed to attain the 2008 ozone NAAQS and TCEQ's subsequent publication in the Texas Register specifying what CMs are being implemented and establishing the implementation schedule, which is proposed to be no later than nine months after Texas Register publication. The April 16, 1992 General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990 ("General Preamble") states EPA's view that we expect all actions needed to affect full implementation of the measures to occur within 60 days after EPA notifies the State of its failure. The process TCEQ has outlined is unclear on whether all actions needed to affect full implementation will occur within 60 days of EPA's notification. Specifically, inclusion of a nine-month timeframe is concerning because this seems to indicate that not all actions needed to fully implement the contingency measures will occur within 60 days. We therefore request that TCEQ clarify for EPA how the CMs will be fully implemented within 60 days of triggering.
2. The TCEQ's proposal provides a RACT analysis that relies exclusively on a previous RACT analysis from the DFW Serious classification attainment demonstration for the 2008 ozone NAAQS adopted by the commission on March 4, 2020. That RACT analysis is based exclusively on EPA's CTGs and ACTs. In EPA's Implementation Rule for the 2008 Ozone NAAQS, EPA stated that "states should refer to the existing CTGs and ACTs for purposes of meeting their RACT requirements, *as well as* all relevant information (including recent technical information and information received during the public comment period) that is available at the time that they are developing their RACT SIPs for the 2008 ozone NAAQS." 80 FR 12264, 12279 (March 6, 2015) (emphasis added). EPA repeated this in

the Implementation Rule for the 2015 Ozone NAAQS.³ As part of their RACT SIP submissions, states should provide adequate documentation that they have considered emission control requirements that are economically and technologically feasible. The analysis of economic and technological feasibility should be based on the information that is current and available as of the time of development of the RACT SIP. TCEQ should document that they examined current and relevant information, identify rules in Texas and in states other than Texas that they examined, and should discuss if and how such information affected their RACT determination. In addition, EPA notes that we have issued NOx regulation for EGUs and non-EGUs under our good neighbor rule, but these rules are now under judicial stay. TCEQ should evaluate the measures in the good neighbor rule and ensure that the Texas SIP at least requires that level of control in the nonattainment areas. This documentation and discussion should be included for all types of RACT: CTG RACT, Major Source non CTG VOC RACT, and Major Source NOx RACT. Given the identified concerns with attaining the 2008 standard and even greater concern for meeting the 2015 standard, TCEQ should be performing a robust analysis of available controls.

3. **MODELING AND WEIGHT OF EVIDENCE:** The 2026 modeled future design values (DVs) show attainment with the 2008 8-hour ozone standard but are above the 2015 8-hour ozone standard at 4 of the 17 regulatory monitors, with a high of 72 ppb. The proposed SIP revision does not discuss how realistic this projection is compared to recent DVs (2022 {77 ppb} and preliminary 2023 {81 ppb}) for either the 2008 or 2015 8-hour ozone standards. While the model performance evaluation documentation and analysis were lacking and do not comport with EPA's attainment demonstration modeling guidance documents, the data that are available indicate the model is not replicating higher ozone monitored exceedances on many days in the base case and has underestimation model performance issues. This 2019 base case modeling platform with the new future year of 2026 is basically the same modeling platform that TCEQ used for the proposed attainment demonstration of the 2015 8-hour Moderate area SIP proposed in June 2023. Similarly, the June 2023 proposal showed a maximum 2023 Future DV of 73 ppb which is much lower than the actual 2022 and preliminary 2023 monitored DVs of 77 ppb and 81 ppb. EPA is concerned the modeling projections for 2026 likely underestimate the future DVs that will actually occur in 2026. We offer the following comments regarding the Modeling and the Weight-of-Evidence (WOE) portion:
 - a. The model demonstrates significant underprediction, especially on many of the highest days. Just looking at averaged episode statistics (which can average out potential problems), all but three of the seventeen monitors have a negative bias and eight did not meet the goal.
 - b. **MODEL PERFORMANCE EVALUATION:**
 - i. Photochemical Model Performance Evaluation (MPE) was very limited. It only included monitor specific analysis for one monitor per month when DFW has 17 regulatory monitors and this limited analysis was only for ozone, not for any precursors. TCEQ did not provide to EPA or the public time series (1-hour and 8-hour), MDA8 Obs vs. Modeled (raw data was provided to EPA a few days before comment period closed), MDA8 Observed vs. Modeled daily plots, or scatter/Q-Q plots for most monitors. This limited EPA's review of the MPE and the ability to provide comments. The MPE material provided does not comport with EPA's Modeling Guidance documents including the 2018 Modeling Guidance for Demonstrating

³ "Consistent with the EPA's prior guidance (80 FR 12279; March 6, 2015), when determining what is RACT for a particular source or source category, air agencies should also consider all other relevant information (including recent technical information and information received during the state's public comment period) that is available at the time they develop their RACT SIPs." 83 FR 62998, 63007 (December 6, 2018).

Attainment of Air Quality Goals for Ozone, PM2.5, and Regional Haze. We note that EPA received MDA8 Obs and Modeled data (not plots) from TCEQ on Thursday January 11, 2024 at approximately 4 p.m. CDT, which did not allow sufficient time for EPA to review and comment, and this information was not circulated in materials available to the general public.

- ii. Similarly, the Meteorological modeling MPE was very limited (approximately 10 pages); whereas, in past SIPs, TCEQ has provided separate appendices (on the order of 70 pages or more) just to document the meteorological modeling and included a more robust model performance analysis of the meteorological modeling for the attainment demonstration. This is important to include for review as it helps to assess why the photochemical modeling may not be replicating the high ozone levels monitored or may be modeling high ozone values that are used in the RRF calculations when the monitored values were low.
- iii. EPA's very limited review on the information provided January 11, 2024 raises further questions and concerns with model performance and Future DV calculations. For example, for the 10 days used in the Future DV calculations for the 2026 Future DV value at the Grapevine monitor: four of the ten days have 2019 based modeled values of 74.48, 78.71, 72.80, and 75.23 ppb when monitored values were 56.13, 57.61, 60.86, and 61.50 ppb (6/1, 6/2, 7/26 and 8/28). With the limited data available it could be errors in the meteorological modeling on some days but June 1st and 2nd did not have high ozone in the DFW area (highest monitored value was 66 ppb and 58 ppb for 6/1 and 6/2 respectively). With the limited data provided it is unclear to what extent errors in either the meteorology and/or the photochemical modeling is driving the disconnect between modeled and monitored data. This is especially concerning because a number of these low monitored days are included in the calculations of future DV projections. As one example, at Frisco monitor, the 3rd through the 7th MDA8 high values monitored in the episode modeled are not in the RRF calculation because the modeling is not replicating ozone events due to the underestimation of 12-22 ppb for the 3rd through 5th MDA8 episode monitored values. Errors in the modeling also resulted in some days with low observed values being used in the RRF for calculation of Future DVs (e.g., Frisco – 6/2 MDA OBS 57 ppb, Denton -9/14 MDA8 OBS 62 ppb, Grapevine – 6/1 MDA8 OBS 55 ppb); it is unclear what the impacts of this are but raises questions about the modeling performing adequately for the days used in the Future DV calculations.
- c. Past TCEQ DFW SIP revisions have included monitored DV ozone trends analysis that indicated a long-term average decrease in DV of 1 to 1.2 ppb/year primarily due to reduced emissions because of mobile source fleet turnover. We note that 2023 preliminary data through December 5, 2023 indicates a max preliminary DV of 81 ppb and five of the other 16 regulatory monitors with preliminary DVs of 78 to 80 ppb. A 2 ppb/yr average decrease would have to occur for the next three years to reach 75 ppb from the 2023 preliminary DV of 81 ppb.
- d. TCEQ's own RACM section of this proposal indicates that based on a preliminary 2023 DV of 81 ppb (through September 9, 2023), DFW ozone DV would need to decrease ozone at a rate of 3 ppb/year to meet modeled FDVs; yet, TCEQ has not identified any large reductions beyond fleet turnover that would result in such a large DV drop. Most of the WOE seems to indicate that trends in ozone and ozone pre-cursor concentrations are either flat or slightly increasing from 2014 to 2022.

- e. TCEQ's WOE does not provide evidence that the modeling is a fully reliable predictor of future ozone levels. The WOE actually seems to indicate the modeling is continuing to overestimate the amount of decrease in future DVs such that the area does not seem likely to reach attainment of the 2008 ozone standard by 2026.
- f. TCEQ's DFW proposed attainment demonstration for the 2015 8-hour ozone NAAQS in June 2023, using basically all the same modeling files, etc., projected a maximum future year 2023 DV of 73 ppb for DFW, which is 8 ppb lower than the preliminary 2023 DV of 81 ppb further supporting EPA's concerns regarding the model's projections being underestimated.
- g. TCEQ's modeling uses EPA's 2016v1 emission inventory for a number of emission source categories outside of Texas. This inventory has been updated twice, so using EPA's 2016v3 (includes both updated 2016 and 2026 EI years) may improve model performance and resolve emission inventory issues that were resolved through the review and comment process on EPA's 2016v1 emission inventory.
- h. Table ES-1 (Emissions Summary) continues to show large decreases (>80%) between 2019 and 2026 in the O&G sector, an area that has shown large decreases in the previous submittals. If this is from Texas Railroad Commission (RRC) data, please provide a table of such. This same table also shows a very significant increase (> 50% NOx) in cement kiln emissions for 2026. The TSD (Appendix A, pg A-35) is not clear if this is due to modeling the entire Holcim cap (emissions that Holcim has never used) or for additional reasons. Please address all significant EI changes with adequate discussion.
- i. Please discuss why the chosen base case year could not have been 2021, rather than relying on the 2019 base year for modeling. TCEQ's discussion of Figure 3-1 is not adequate to justify relying on 2019, when 2021 shows even more days, and 2022 shows the most exceedance days since 2016. EPA understands that 2022 was likely too close to this submittal date to entertain its use. Table 3-1 could be expanded to include other years.
- j. Please discuss the adequacy and appropriateness for not advancing the future base year for modeling of electric utility generating units (EGUs) to 2021 or 2022 to start with the most current year available in CAMPD. 2022 QC'd CAMPD EGUs were available prior to May 2023.
- k. Please discuss the adequacy and appropriateness for not advancing the future base year for modeling of non-EGU point sources to the most current year of QC'd State of Texas Air Reporting System (STARS) data. The more current the future base, the fewer the years of projection that are necessary, and hopefully the more accurate the future year EI.
- l. Despite TCEQ's already having invested significant resources to develop their on-road mobile EI with MOVES3, we suggest that TCEQ provide at least a summary discussion of the expected difference between MOVES4 and the TCEQ's MOVES3 for the ten county NOx and VOC totals. Even though EPA did not release the MOVES4 model until September 12, 2023, TCEQ could have at least discussed the coming MOVES4 model, its reported improvements, and what that might do for DFW – perhaps as WOE.
- m. In Figure 3-8, the legend identifies the largest increase as 0.2 tpd NOx and the largest decrease as -0.2 tpd NOx, with the overall change between 2019 and 2026 of anthropogenic NOx on the high day of June 12 to be -55.94 tpd NOx. EPA wants to confirm that the max and min values of these tileplots are as provided in the legend (that none of the grid cells are greater than or less than the value identified in the legend).
- n. Figure 3-9, in conjunction with the total VOC by source category (Oil and Gas Production) in Tables 3-5 and 3-6, shows that the Barnett Shale is still playing out between the years 2019 and 2026, from 50.33 tpd in 2019 to 8.17 tpd VOC in 2026, mainly in the western half of the

- DFW NAA. EPA is surprised that this much reduction is still available after 2019. Please confirm this with Texas RRC data.
- o. Regarding the overwhelming negative bias (leading to underprediction) of the modeling document in Section 3.5, only three of the 17 monitors were not negatively biased and eight did not meet the performances goals. TCEQ did not address the likelihood of systematic error here. TCEQ only shows a bit more analysis of this in the monthly breakout table and spatial plots, but TCEQ simply concludes that the MPE is good without further discussion of the potential causes or reconciliation of the biases and errors.
 - p. Local Initiatives provided by the North Central Texas Council of Governments, as submitted by TCEQ as Appendix E, did not mention that Granbury in Hood County has been a member for numerous years of the Ozone Advance program. It could be beneficial to encourage other communities (e.g., Ennis, Terrell, Forney or Cleburne) to join the Ozone Advance program; reductions in these upwind cities could provide measured benefit to the Dallas/Fort Worth Area.
 - q. EPA has the following concerns regarding the TCEQ's WOE analysis:
 - i. Background Ozone trends – No documentation on methodology and monitors used. This technique tends to bias low local production and bias high background values, but with that caveat, it shows the percentage of local generation going up and background going down. TCEQ's analysis seems to conclude that on some days local generation could be 33% to 40% of total ozone, indicating local reductions would be helpful in attaining the standard. It would also be interesting to see if CAMx Anthropogenic Precursor Culpability Assessment results in similar or different conclusions of local and background contributions on the higher monitored ozone exceedance days and how this compares between base case and future case.
 - ii. Precursor NOx trends, the 95th percentile is the same or higher than 2016 levels which does not support the projected reductions in ozone levels.
 - iii. Monitored VOC/NOx ratios – No information on what time of day or if this is all hours of the day. Typically, TCEQ/EPA has looked at a subset of morning hours and subset of afternoon hours for these ratios to help determine chemistry limitation/transition.
 - iv. Analysis of long-term ozone DV trends is missing that would indicate emission reductions due to fleet turnover and other federal measures result in approximately 1-1.2 ppb/yr on long-term average (10 years or more) which would indicate the more recent measured DVs will not reduce to attainment levels within the next several years.
 - t. Due to the consistent underestimation of Future DVs in this attainment demonstration and in previous demonstrations, including the 2023 attainment demonstration modeling for the 2015 8-hour ozone NAAQS SIP proposal (June 2023), TCEQ should investigate what seems to be a systematic problem and offer potential solutions to improve future model projections.

Project Number 2023-110-SIP-NR

Comments addressing HGB Attainment Demonstration (AD) Plan

We appreciate the detailed work submitted in the AD plan. We have the following concerns:

1. The TCEQ's proposal includes a Contingency Plan to satisfy the CAA sections 172(c)(9) and 182(c)(9) requirement to provide for specific CMs that would take effect and result in emissions reductions if an ozone area fails to attain a NAAQS by the applicable attainment date or fails to demonstrate RFP. EPA commends the TCEQ's inclusion of contingency measures that appear to be prospective and

conditional (i.e., that they occur in the future in response to a triggering event) in the proposed Contingency Plan, consistent with the January 2021 U.S. Court of Appeals for the District of Columbia Circuit vacatur of EPA's interpretation of the CAA to allow states to rely on already implemented control measures to meet the statutory requirements of section 172(c)(9) or 182(c)(9) for contingency measures in nonattainment plans for the ozone NAAQS. *Sierra Club, et al. v. EPA*, 985 F.3d 1055 (D.C. Cir. 2021). We offer the following recommendations to clarify certain aspects of TCEQ's proposal:

- a. We appreciate Texas working to meet the requirement to have CMs for these areas. We note that EPA disapproved TCEQ's CMs submitted in response to these areas' reclassification to Serious.⁴ In addition, EPA found that the DFW and HGB ozone nonattainment areas failed to attain by their Serious area attainment date and reclassified the areas to Severe.⁵ As explained in the disapproval action cited above, TCEQ has an obligation to provide and implement approvable contingency measures as soon as possible to address the DFW and HGB areas' failure to attain by the serious attainment date. In addition, the TCEQ must provide CMs that would be implemented in the event the areas fail to make RFP as required for Severe areas or to attain by the Severe area attainment date. Please identify which of these measures would be triggered upon a failure to attain by the Severe date or meet a future RFP milestone, versus which of these measures will be implemented immediately as a result of the past failure to attain by the Serious date.
- b. The Contingency Plan outlines the contingency measure controls and process by which TCEQ would implement enough CMs in the applicable area to meet or exceed the required contingency reductions, calculated as 3% of the 2011 RFP base year emissions. For the HGB area, TCEQ has identified CMs for adoption (being proposed in concurrent rulemakings for 30 TAC Chapters 115 and 117) to achieve VOC reductions in excess of the 3%. We ask that TCEQ confirm for the record that, upon a triggering event (failure to attain or failure to make RFP), all identified CMs will be implemented without further action by the state or EPA to achieve these VOC reductions. It is unclear to EPA if the intent is to implement all measures relied upon to achieve the 3% reduction after a triggering event. If this is the intent, then EPA recommends clarifying this aspect. Conversely, if the intent is for TCEQ to make a choice of which measures to implement after the triggering event has occurred, then EPA is unclear on how such an approach comports with the CAA and applicable EPA guidance, and EPA recommends that TCEQ explain.
- c. The TCEQ's proposal outlines the process by which the proposed CMs would be triggered upon EPA publication of a notice in the Federal Register that the HGB area failed to attain the 2008 ozone NAAQS and TCEQ's subsequent publication in the Texas Register specifying what CMs are being implemented and establishing the implementation schedule, which is proposed to be no later than nine months after Texas Register publication. The General Preamble states EPA's view that we expect all actions needed to affect full implementation of the measures to occur within 60 days after EPA notifies the State of its failure. The process TCEQ has outlined is unclear on whether all actions needed to affect full implementation will occur within 60 days of EPA's notification. Specifically, inclusion of a nine-month timeframe is concerning because this seems to indicate that not all actions

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⁵ More information is provided in our final determinations of attainment by the attainment date and reclassification of areas classified as Serious for the 2008 ozone NAAQS (see 87 FR 60926, October 7, 2022).

needed to fully implement the contingency measures will occur within 60 days. We therefore request that TCEQ clarify for EPA how the CMs will be fully implemented within 60 days of triggering.

2. The TCEQ's proposal provides a RACT analysis that relies exclusively on a previous RACT analysis from the HGB Serious classification attainment demonstration for the 2008 ozone NAAQS adopted by the commission on March 4, 2020. That RACT analysis is based exclusively on EPA's CTGs and ACTs. In EPA's Implementation Rule for the 2008 Ozone NAAQS, EPA stated that "states should refer to the existing CTGs and ACTs for purposes of meeting their RACT requirements, *as well as* all relevant information (including recent technical information and information received during the public comment period) that is available at the time that they are developing their RACT SIPs for the 2008 ozone NAAQS." 80 FR 12264, 12279 (March 6, 2015) (emphasis added). EPA repeated this in the Implementation Rule for the 2015 Ozone NAAQS.⁶ As part of their RACT SIP submissions, states should provide adequate documentation that they have considered emission control requirements that are economically and technologically feasible. The analysis of economic and technological feasibility should be based on the information that is current and available as of the time of development of the RACT SIP. TCEQ should document that they examined current and relevant information, identify rules in states other than Texas that they examined, and should discuss if and how such information affected their RACT determination. In addition, EPA notes that we have issued NOx regulation for EGUs and non-EGUs under our good neighbor rule, but these rules are now under judicial stay. TCEQ should evaluate the measures in the good neighbor rule and ensure that the Texas SIP at least requires that level of control in the nonattainment areas. This documentation and discussion should be included for all types of RACT: CTG RACT, Major Source VOC RACT, and Major Source NOx RACT. Given the identified concerns with attaining the 2008 standard and even greater concern for meeting the 2015 standard, TCEQ should be performing a robust analysis of available controls.
3. We understand that TCEQ is relying on its MECT Program to implement RACT requirements for NOx in the HGB area. EPA's Implementation rule for the 2015 ozone NAAQS explained that "states may demonstrate as part of their NOx RACT SIP submission that the weighted average NOx emission rate of all sources in the nonattainment area subject to RACT meets NOx RACT requirements; states are not required to demonstrate RACT-level controls on a source-by- source basis." 83 FR 62998, 63007 (December 6, 2018). This longstanding policy on area wide average emission rates is also explained in the final implementation rule the 2008 ozone NAAQS: "...states have the option of conducting a technical analysis for a nonattainment area considering the emissions controls required by a regional cap-and-trade program, and demonstrating that compliance by certain sources participating in the cap- and-trade program results in actual emission reductions in the particular nonattainment area that are equal to or greater than the emission reductions that would result if RACT were applied to an individual source or source category within the nonattainment area." 80 FR 12264, 12279 (March 6, 2015). The SIP should explain how the TCEQ's program achieves this "equal to or greater than" standard. The SIP should also include such technical analysis to demonstrate and document how the MECT program achieves RACT for the HGB NAA. A successful demonstration must show that the MECT program will result in actual emissions reductions that are equal to or greater than reductions that would be achieved by applying RACT on a source-by-source basis in the

⁶ "Consistent with the EPA's prior guidance (80 FR 12279; March 6, 2015), when determining what is RACT for a particular source or source category, air agencies should also consider all other relevant information (including recent technical information and information received during the state's public comment period) that is available at the time they develop their RACT SIPs." 83 FR 62998, 63007 (December 6, 2018).

HGB NAA. Based on EPA's understanding of the MECT program, we believe the demonstration should include, among other things, (1) evaluation of the ESADs and a determination that each ESAD represents RACT, (2) an evaluation of the number of allowances based on a recent basis for number of sources and activity level, (3) a baseline for allowances that is reflective of the current controls in place and current operation of NOx sources, and (4) demonstrate how the implementation on an annual average to meet the MECT is protective of short-term ozone. EPA Region 6 is ready to work with TCEQ on questions going forward. The analysis included in the SIP to support these demonstrations should be based on current relevant information.⁷

4. The 2026 modeled future design values shows attainment with the 2008 8-hour ozone standard but are above the 2015 8-hour ozone standard at 5 of the 20 regulatory monitors, with a high of 75 ppb. However, the proposed SIP does not discuss how realistic this projection is compared to recent DVs (2022 {78 ppb} and preliminary 2023{83 ppb}) for either the 2008 or 2015 8-hour ozone standards. While the model performance evaluation documentation and analysis were lacking and do not comport with EPA's attainment demonstration modeling guidance documents, the data that are available indicate the model is not replicating higher ozone monitored exceedances in the base case on many days and has underestimation model performance issues. In addition, this 2019 base case modeling platform with the new future year of 2026 is basically the same modeling platform that TCEQ used for the proposed attainment demonstration of the 2015 8-hour Moderate area SIP proposed in June 2023. That June 2023 proposal showed a maximum 2023 Future DV of 76 ppb which is much lower than the actual 2022 and preliminary 2023 monitored DVs of 78 ppb and 83 ppb. Overall, EPA believes the modeling projections for 2026 likely underestimate the future DVs that will actually occur in 2026. We offer the following comments addressing the Modeling and the WOE portion:
 - a. Past TCEQ SIPs for HGB have indicated a long-term average decrease in DV of only 1 to 1.2 ppb/year due mostly to emission reductions from fleet turnover. The Attainment year is only 3 years away and the 2023 preliminary data through December 5, 2023 indicates max preliminary DV of 83 ppb and six of the other 16 regulatory monitors with preliminary DVs of 77 to 79 ppb. Yet, the TCEQ does not identify any large reductions that would result in such a large DV reduction.
 - b. TCEQ's HGB Proposed attainment demonstration in June 2023 used basically all the same modeling files, etc., and projected a maximum future year 2023 DV of 76 ppb for HGB, which is 7 ppb lower than the preliminary 2023 DV of 83 ppb. This indicates that the earlier version of this modeling platform was also underestimating future DVs.
 - c. Table ES-1 (Emissions Summary) shows no NOx decreases for Oil and Gas Production but does show a 50% decrease in VOC projected for this category between 2019 and 2026. There is also some significant EGU growth projected. Please address all significant EI changes with adequate discussion and provide tables of newly-permitted EGU emissions.
 - d. Figure 5-1 shows that the design value leveled off in 2014 and has not appreciably decreased (on average) since 2014. Population is expected to continue to increase, so

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controls will be necessary to counteract the expected increase in emissions that come along with increased population.

- e. When TCEQ makes its point in Section 2.6, they should highlight specific EI projects that made a difference and/or will make a difference in the future.
- f. Regarding the overwhelming negative bias (leading to underprediction) of Section 3.5, only six of the 20 monitors were not negatively biased and five did not meet the performance goal. TCEQ did not address the likelihood of systematic error here. TCEQ only shows a bit more analysis of this in the monthly breakout table and spatial plots, but TCEQ simply concludes that the MPE is good without further discussion of the potential causes or potential reconciliation solutions to the biases and errors.
- g. While the actual data for some of the same lettered DFW Modeling and WOE comments (that EPA made above) may differ, many of the underlying concerns raised also apply for HGB proposed modeling and WOE including DFW-specific comments 3b, 3e, 3f, 3g, 3h, 3i through 3m, 3r (i-iv), and 3s apply here for HGB as well, and TCEQ should address EPA's concerns on these topics for HGB as well.

Project Number 2023-108-SIP-NR

Comments addressing the DFW and HGB Reasonable Further Progress (RFP) Plans

We appreciate the detailed work submitted in the RFP plan. We have the following concerns:

1. The TCEQ's proposal includes a Contingency Plan to satisfy the CAA sections 172(c)(9) and 182(c)(9) requirement to provide for specific CMs that would take effect and result in emissions reductions if an ozone area fails to attain a NAAQS by the applicable attainment date or fails to demonstrate RFP. EPA commends the TCEQ's inclusion of contingency measures that appear to be prospective and conditional (i.e., that they occur in the future in response to a triggering event) in the proposed Contingency Plan, consistent with the January 2021 U.S. Court of Appeals for the District of Columbia Circuit vacatur of EPA's interpretation of the CAA to allow states to rely on already implemented control measures to meet the statutory requirements of section 172(c)(9) or 182(c)(9) for contingency measures in nonattainment plans for the ozone NAAQS. *Sierra Club, et al. v. EPA*, 985 F.3d 1055 (D.C. Cir. 2021). We offer the following recommendations to clarify certain aspects of TCEQ's proposal:
 - a. We appreciate Texas working to meet the requirement to have CMs for these areas. We note that EPA disapproved TCEQ's CMs submitted in response to these areas' reclassification to Serious.⁸ In addition, EPA found that the DFW and HGB ozone nonattainment areas failed to attain by their Serious area attainment date and reclassified the areas to Severe.⁹ As explained in the disapproval action cited above, TCEQ has an obligation to provide and implement approvable contingency measures as soon as possible to address the DFW and HGB areas' failure to attain by the serious attainment date. In addition, the TCEQ must provide CMs that would be implemented in the event the areas fail to make RFP as required for Severe areas or to attain by the Severe area attainment date. Please identify which of these measures would be triggered upon a failure to attain by the

⁸ More information is provided in our final disapproval of contingency measures for the DFW and HGB Serious ozone nonattainment areas for the 2008 ozone NAAQS (see 88 FR 67957, October 3, 2023).

⁹ More information is provided in our final determinations of attainment by the attainment date and reclassification of areas classified as Serious for the 2008 ozone NAAQS (see 87 FR 60926, October 7, 2022).

- Severe date or meet a future RFP milestone, versus which of these measures will be implemented immediately as a result of the past failure to attain by the Serious date.
- b. The proposal outlines the contingency measure controls and process by which TCEQ would implement enough CMs in the applicable area to meet or exceed the required contingency reductions, calculated as 3% of the 2011 RFP base year emissions. For the DFW & HGB areas, TCEQ has identified CMs for adoption (being proposed in concurrent rulemakings for 30 TAC Chapters 115 and 117) to achieve VOC reductions in excess of the 3%. We ask that TCEQ confirm for the record that, upon a triggering event (failure to attain or failure to make RFP), all identified CMs will be implemented without further action by the state or EPA to achieve these VOC reductions. It is unclear to EPA if the intent is to implement all measures relied upon to achieve the 3% reduction after a triggering event. If this is the intent, then EPA recommends clarifying this aspect. Conversely, if the intent is for TCEQ to make a choice of which measures to implement after the triggering event has occurred, then EPA is unclear on how such an approach comports with the CAA and applicable EPA guidance, and EPA recommends that TCEQ explain. In addition, further measure controls (industrial cleaning solvents and industrial adhesives) are proposed for adoption but would only be adopted for the DFW area if other measures change in response to comment such that additional reductions are necessary to cover the 3% emissions reduction requirement for CMs. We encourage Texas to adopt these further DFW area measure controls, and to consider implementing any measures yielding excess emission reductions as expeditiously as practicable to ensure emissions reduction progress continues to be made towards attainment.
 - c. The TCEQ's proposal outlines the process by which the proposed CMs would be triggered upon EPA publication of a notice in the Federal Register that the applicable area failed to attain the 2008 ozone NAAQS and TCEQ's subsequent publication in the Texas Register specifying what CMs are being implemented and establishing the implementation schedule, which is proposed to be no later than nine months after Texas Register publication. The General Preamble states EPA's view that we expect all actions needed to affect full implementation of the measures to occur within 60 days after EPA notifies the State of its failure. The process TCEQ has outlined is unclear on whether all actions needed to affect full implementation will occur within 60 days of EPA's notification. Specifically, inclusion of a nine-month timeframe is concerning because this seems to indicate that not all actions needed to fully implement the contingency measures will occur within 60 days. We therefore request that TCEQ clarify for EPA how the CMs will be fully implemented within 60 days of triggering.
 - d. The TCEQ's proposal outlines the process by which the proposed CMs would be triggered upon EPA publication of a notice in the Federal Register that the applicable area failed to meet an RFP analysis year requirement under the 2008 ozone NAAQS. Although EPA may publish such a notice of failure to meet an RFP analysis year requirement in the Federal Register, EPA may also notify states of any ozone NAAQS nonattainment area's failure to meet an RFP analysis year requirement by means outside the Federal Register such as by letter. We recommend this notification language be revised to include mention of RFP inadequacy determination letters/notifications as a recognized means of notification.
2. The TCEQ's proposal outlines an emissions assessment process which TCEQ has developed for conducting the vehicle miles traveled (VMT) offset demonstration. This process is intended to isolate VMT-related emissions and exclude certain non-VMT related vehicle operating modes from the VMT offset emissions assessment for the DFW/HGB area; specifically, evaporative emissions from vehicle cold soaks ("cold-soak emissions"). EPA acknowledges our past approvals of VMT offset

demonstrations which excluded cold-soak emissions; however, we note that such VMT offset demonstrations were conducted using the EMFAC model developed and used by the California Air Resources Board to assess emissions from on-road vehicles.¹⁰ EPA has approved EMFAC for use in SIP development in the State of California through an extensive formal evaluation of the model.¹¹ States other than California are required to use EPA's MOVES model to assess emissions from on-road vehicles, and we acknowledge the MOVES model does not allow for isolation of VMT-related emissions in the manner that TCEQ has proposed. EPA does not dispute the validity of excluding cold-soak emissions from calculations of VMT offset emissions scenarios, but we stress that the emissions assessment process that TCEQ has developed for this purpose is a novel approach for excluding cold-soak emissions, and EPA cannot comment on the approvability of the TCEQ's methodology at this time. EPA will evaluate the proposed methodology and notify TCEQ of any identified concerns which may impact approvability.

Project Numbers 2023-107-SIP-NR (DFW AD) and 2023-110-SIP-NR (HGB AD)

Comments addressing Appendix A: Modeling Technical Support Document (TSD) [covers both areas]

1. We appreciate the detailed work submitted in the modeling TSDs for the DFW and HGB areas. We have the following concerns:
 - a. The meteorology MPE soccer plots are very helpful. It would have been more helpful to compare them to past episodes and to each other (DFW and HGB). As EPA compared these, we noted:
 - HGB had better wind speed bias.
 - DFW had better wind direction bias and error.
 - DFW Temp had a bit less error, but a bit more bias. HGB had a tight Temp bias at +0.5 K.
 - DFW Humidity was more negatively biased than HGB but not by much.
 - b. Section 3.3.1.3 Non-EGU Point Sources Base Case states that the ozone season daily emissions for these sources were supplemented with "any EE/SMSS for the source (after conversion to tpd)." These are emissions that are extracted from STARS and prepared for model input. The annual EE and SMSS are added together and divided by 365 and added to the ozone season value from STARS. This is more of an issue in HGB, especially, given the number of emission events above reportable quantity that may be reported in STEERS in any year (even though the event timespan and emissions quantity are an estimate only). These annual EE and SMSS do not provide the resolution required for daily or hourly model input. When large EE or SMSS are reported for STARS, the RNs should report the timeframe of these for easier reconciliation with STEERS. This would allow modelers to incorporate these EE and SMSS emissions more meaningfully. Dividing STARS EE and SMSS totals for an EPN by 365 to estimate a tpd value is not nearly adequate to be able to apply the emissions to the right source at the right time in the right quantity to capture such events. EPA understands that this would likely require a procedural change at TCEQ, but such would be required for modelers to be able to model EE and SMSS events.

¹⁰ More information is provided in our final approval of VMT offset demonstrations for California's Severe and Extreme ozone nonattainment areas for the 2015 ozone NAAQS (see 88 FR 76139, November 6, 2023).

¹¹ More information is provided in our approval of the EMFAC2021 motor vehicle emission factor model for use in the State of California (see 87 FR 68483, November 15, 2022).

- c. For point source projections, TCEQ analyzes growth projection factors and banked emissions as potential growth and then applied an ERC sensitivity. TCEQ could explain this better on page A-34 by explaining that Table 3-4 is generated to show that TCEQ took the larger of the STARS+ERCs or the previous future growth projection from Table 3-3.
- d. Referring to Tables 3-7 and 3-8, EPA has a hard time believing the almost 40% reduction in NOx represents realistic on-road emissions between 2019 and 2026 given the population growth in DFW. This also includes a roughly 30% VOC reduction and roughly 25% CO reduction. This is another reason that TCEQ should be eager to perform MOVES4 sensitivities. EPA released MOVES4 on September 12, 2023, so EPA understands that TCEQ could not have performed MOVES4 modeling for this SIP proposal but may have time for some sensitivities prior to potential adoption.
- e. In Table 3-8, for DFW, TCEQ did not use negative values to denote the difference between 2026 and 2019, whereas, in Table 3-10, for HGB, TCEQ did use negative values to represent a reduction from 2019 to 2026 values. Please be consistent.
- f. Table 3-22 contains a typo, where “CMW” should be “CMV”.
- g. In Section 3.7.1.1, TCEQ should provide a reference to where the RACM sensitivity is discussed in detail.
- h. In Section 3.8.2, the Gulf of Mexico emissions used for the base and future case were the 2017 GWEI. Please address whether TCEQ made any effort to determine if these are projected to increase or decrease. Please address whether TCEQ had discussions with BOEM or looked at any trends.
- i. Section 5.1.1 for HGB Model Performance, where TCEQ provides their results for Figure 5-3, EPA adds that 26 of the 40 total monitors (14 of the 20 regulatory monitors) were underpredicted (negative bias) overall, but only one by more than 15%.
- j. Section 5.1.2 for HGB Model Performance, TCEQ analyzed monitor specific performance via soccer plots, but only discussed that this “indicates acceptable performance.” TCEQ should discuss the results a bit more (this is the TSD). Overall, for HGB, it appears that August has the highest positive bias (overpredicted) and April generally has the least bias (closest to zero), with almost no underprediction. September has the lowest error. August and June have the highest error. TCEQ should address why the four highest monitors show positive bias (overprediction) for every month in Figure 5-4 but show negative bias (~5%) in Figure 5-2. EPA understands that this is likely due to Figure 5-2 using only MDA8 > 60ppb, but this may be confusing to other readers. TCEQ should make this more clear (with a few more words) to avoid such potential confusion.
- k. Section 5.2.1 for DFW Model Performance, TCEQ generated Tables 5-6 and 5-7 and concluded “good performance.” EPA notes that 14/16 regulatory monitors were underpredicting, with Cleburne having the most bias (-13%), and 9/16 monitors have NMB outside the goal range. All monitors were within the NME goal. While it is decent performance, it is biased negatively (underpredicting ozone).
- l. Section 5.2.2 for DFW Monitor-Specific Statistics, EPA notes that almost everything is within the soccer goal rectangle, but we also note that the first three months of the ozone season had the highest error at these monitors. TCEQ should discuss how Dallas North is negatively biased outside the goal in Figure 5-6 but has no months showing negative bias in Figure 5-8, and how Grapevine shows only positive bias in the soccer plot with the Apr thru Oct overall

NMB ~+10% yet Figure 5-6 shows Grapevine with ~5% negative bias. Again, EPA assumes these have to do with the inclusion of only >60ppb data points of Figure 5-6, but TCEQ should assume readers may have this question, and should do some due diligence to catch those questions beforehand to point out some things that on the surface may appear to be inconsistent.

- m. At the top of page A-102, please explain why the months of June, August, and September chosen as the test months for the CAMx options.
- n. EPA appreciates the emissions tileplots. No difference plots were provided for the Area source category tileplots on page AT-38. The differences are small according to Tables 3-36 and 3-38 but could cause some confusion for readers looking for the spatial difference, as with most of the other source categories. Since area sources were grown with simple projection factors according to a contract report, they were grown in place, so the spatial relationship does not change from base to future case. Most readers might not have caught that.

Project Numbers 2023-107-SIP-NR (DFW AD) and 2023-110-SIP-NR (HGB AD)

Comments addressing Appendix B: Conceptual Models [covers both areas]

1. We appreciate the detailed work submitted in the conceptual models for the DFW and HGB areas. Most of these comments were written specific to sections in the HGB Conceptual Model, but the general comments also address similar concerns in the DFW Conceptual Model where they are common elements of the conceptual model documents. We have the following concerns:
 - a. In comparing the Conceptual Model version (previous and updated) conclusion bullets, EPA notes that the second bullet (“20 to 30 ppb”) in the “previous” list on page 1-2 no longer exists in the updated list that is in the Executive Summary. It would be helpful if the TCEQ addressed each of its conclusory changes.
 - b. On page 2-5, EPA notes that TCEQ jumps to the first of its many conclusions. In the second paragraph above Figure 2-4: “The monitor with the maximum fourth-highest MDA8 ozone concentration changes from year to year and is not always the same as the monitor with the areawide maximum design value. This indicates that overall, ozone in the area is not changing very much and that changes at individual monitors are likely due to changes in shifting wind directions on high ozone days rather than changes in emissions.” This proposed cause of the second sentence does not directly result in the effect of the first sentence. The case has not been made. More explanation is required. If it is a hypothesis, then TCEQ should word it as such.
 - c. In the middle of the paragraph directly above Figure 2-4, TCEQ states, “Since local emissions tend not to vary significantly from year to year, ...” EPA argues that this is quite an assumption, unless TCEQ is only talking about annual emissions in this paragraph. It only takes a few EE/SMSS in a year to affect that year's 4th High. TCEQ has neglected to discuss EE/SMSS in this Conceptual Model. Given that HGB is the largest refinery/petrochemical industrial area in the nation, this topic should be addressed, and has been addressed in previous conceptual models. If TCEQ has done sensitivity analyses on EE/SMSS events, then it should discuss such in a section of this Conceptual Model. TCEQ does discuss Rapid Ozone Formation in Section 2.7, which would generally happen during emission events.
 - d. In the last sentence of the paragraph discussed above, TCEQ could provide a hypothesis for this sentence, as to why 2020 and 2014 were so low, such as Covid, or evidence from traffic

pattern changes in HGB during that year. This would likely require TCEQ to consult with the Houston-Galveston Area Council.

- e. At the end of the last sentence of page 2-6 (HGB), TCEQ uses the word “stagnated,” when it might be better to use, “leveled off at around 17 exceedance days per year on average.”
- f. In Section 2.5, “low ozone days” was not defined. EPA assumes this means all non-exceedance days. But is there a low-end cutoff that was used?
- g. In the second paragraph of Section 3.1(HGB), please remind the reader why those four monitors are no longer operated at those locations.
- h. In the middle of the first paragraph of page 3-2, EPA recommends replacing “sunlight” with “solar insolation.”
- i. At the top of page 3-4, regarding year 2020, EPA also notes that the 95th %tile declined at almost every monitor from 2012 thru 2020, then picked back up with a vengeance in 2021 and 2022. For the mean NO_x, that generally happened also, but not to the same extent (magnitude).
- j. In the last sentence of page 3-5, TCEQ offered no insight or hypotheses for either the peaks or the valleys in Figure 3-5.
- k. In the last sentence of page 3-6, TCEQ offered no insight or hypotheses for either the peaks or the valleys in Figure 3-5.
- l. In the middle of the paragraph after Figure 3-6, TCEQ makes the claim that NO_x is mostly from mobile sources, and perhaps ignores that NO_x can increase significantly from industrial combustion sources that are scattered all over HGB during malfunctions.
- m. EPA was glad to see Section 3.2.3, VOC Composition Trends, in the HGB Conceptual Model. To test some of this reactivity weighted VOC/HRVOC conclusions, TCEQ might consider testing hypotheses by injecting various levels of various highly reactive species (perhaps by replacing some alkanes with alkenes) and checking for modeled ozone differences. Perhaps do this with propylene, since TCEQ has potentially discovered some new propylene sources. EPA encourages more experimentation to try to help model performance and understand the ozone problem better.

Environmental Justice and Civil Rights

Executive Order 12898, directed each listed federal agency to make “achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”¹² Executive Order 14008, made explicit that federal agencies should address “climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts.”¹³ Provisions ensuring that environmental justice and civil rights be addressed in a State Implementation Plan (SIP) is one way to help ensure fair treatment of all communities affected by government decisions all represent a fairer distribution of environmental burdens and benefits. The TCEQ should carefully review applicable authorities for opportunities to incorporate environmental justice considerations and to ensure that such considerations are adequately and appropriately incorporated into SIP revisions.

EPA is committed to advancing environmental justice (EJ) and incorporating equity considerations into all aspects of our work. We encourage the TCEQ to screen their SIP actions for EJ concerns and to consider potential issues related to civil rights of the communities potentially impacted early in the SIP process by utilizing EJScreen and knowledge of the impacted area.¹⁴ This screening will indicate whether a SIP revision has the potential to contribute to significant public health or environmental impacts, if the community may be particularly vulnerable to impacts from the SIP revision, and whether the community is already disproportionately impacted by public health and/or environmental burdens. A sound screening practice will also provide important information as to whether there are residents of the affected community who could be disproportionately subjected to adverse health, environmental and/or quality of life impacts on the basis of income, national origin (including LEP status), or other demographic factors. The TCEQ should also take into consideration whether facilities (major and minor sources of pollution) contribute to community risk. An area with an above average number of sources, especially if those sources are large or in close proximity to residents, is an area of concern.

¹² Exec. Order No. 12898, 59 FR 7629 (February 16, 1994)

¹³ Exec. Order No. 14008, 86 FR 7619 (February 1, 2021)

¹⁴ EJScreen is an environmental justice mapping and screening tool that provides the EPA with a nationally consistent dataset and approach for combining various environmental and demographic indicators. The EJScreen tool is publicly available at <https://www.epa.gov/ejscreen>.