

Response to Comments Received on the 2020 Five-Year Ambient Monitoring Network Assessment

States are required to conduct a network assessment every five years under 40 Code of Federal Regulation (CFR) Part 58.10. The *Texas 2020 Five-Year Ambient Monitoring Network Assessment* (FYA) was submitted to the United States (U.S.) Environmental Protection Agency (EPA) on July 1, 2020, to meet this requirement. The FYA was limited to the portion of the Texas Commission on Environmental Quality (TCEQ) air monitoring network designed to comply with federal monitoring requirements and supported by federal funding. The FYA included federal monitoring network changes from January 1, 2015, through June 1, 2020, and an evaluation through 2025.

Although not required by 40 CFR Part 58.10, the TCEQ posted the FYA for public comment for 30 days. During the public comment period from June 2, 2020, to July 1, 2020, the TCEQ received three individual sets of comments on the FYA. Comments received by the TCEQ relating to the TCEQ federal ambient air quality network, as described in the FYA, are addressed below. Comments received on the FYA will be considered during the development of the *TCEQ 2021 Annual Monitoring Network Plan*.

Comment Summaries and TCEQ Responses

Comment 1: The Central Texas Clean Air Coalition (CAC) noted appreciation for the TCEQ efforts regarding the valuable air monitoring information provided in the FYA. The CAC recommended assessing the Austin-Round Rock-Georgetown (Austin) Metropolitan Statistical Area (MSA) for additional ozone (O₃) and fine particulate matter (PM_{2.5}) monitors to better address monitoring objectives and ensure resiliency during times of site relocation or other problems and noted that the Austin Northwest air monitoring station relocation left only one regulatory O₃ monitor for the entire MSA for several months. The CAC commented that the current number of Austin MSA O₃ and PM_{2.5} monitors does not align with the monitoring objectives for a dispersed area network to evaluate contributing sources, regional levels, and monitoring particulate matter in upwind locations to evaluate incoming concentrations. The CAC further noted that TCEQ operated several low and medium valued monitors that could be better served in areas like the Austin MSA where there are only the minimum number of monitors.

Response 1: The TCEQ appreciates the recognition of the FYA air monitoring information value. The TCEQ is federally required to operate a minimum of two O₃ monitors in the Austin MSA, based on the most recent MSA population estimates and the three-year O₃ design value, and currently operates two O₃ monitors fulfilling Austin area requirements for one downwind maximum concentration monitor and a second monitor supporting additional area characteristics. Similarly, the TCEQ is federally required to operate a minimum of two PM_{2.5} monitors in the Austin MSA to represent area-wide air quality and monitoring in an area of expected maximum concentration, and operates three: one downwind, east of central Austin; one near-road in north Austin, and one downwind in north Austin. There are no PM_{2.5} requirements for upwind monitoring; however, the TCEQ does operate Central Texas area PM_{2.5} monitors providing regional transport data in Waco and Bryan. The TCEQ meets O₃ monitoring requirements and exceeds PM_{2.5} monitoring requirements in this MSA. These monitors support federal monitoring objectives providing a dispersed area network to evaluate contributing sources and regional levels.

Local entities also support additional O₃ monitoring with ten non-regulatory monitors (these monitors do not meet criteria specified in 40 CFR Part 58 for data evaluation) spread throughout the region in Bastrop, Caldwell, Hays, Travis, and Williamson counties. Even though the data from non-regulatory monitors do not meet requirements for comparison to the National Ambient Air Quality Standards (NAAQS), the TCEQ considers the data as supporting information for the area's

air quality decisions. Data from these additional O₃ monitors are located on the TCEQ Texas Ambient Monitoring Information System (TAMIS) webpage (<https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=home.welcome>).

The TCEQ understands the concern regarding data loss during times of site relocation and works to avoid or minimize data loss; however, site relocations are uncommon (for example, the Austin Northwest monitoring station has been in the same location since the 1970s). Federal monitoring objectives and resource constraints do not support placement of monitors solely for resiliency during occasional and unexpected data loss periods.

As stated in the FYA, monitors with a total low value may be considered for decommission in the 2021 Annual Monitoring Network Plan (AMNP). If a low value monitor is recommended for decommission, the TCEQ will assess the need to reallocate the resource and where it would be most useful in the network.

Comment 2: The CAC commented that TCEQ's scoring methodology and characterization of 40 CFR Part 58.14 gives the mistaken impression that a monitor cannot be redeployed or decommissioned with a NAAQS design value of 80 percent (%) or higher. The CAC commented that 40 CFR Part 58.14(c)(1) states that if a monitor has a less than 10% chance of having a design value of 80% of the NAAQS or higher automatically qualifies for decommissioning, that monitors can be considered for decommission based on criteria provided in 40 CFR Part 58.14(c)(2)-(6), and on a case-by-case basis described in 40 CFR Part 58.14. The CAC recommended the TCEQ reconsider the "critical" scoring methodology by increasing the threshold and to add additional text clarifying other potential decommission or relocation circumstances.

Response 2: The TCEQ developed the NAAQS Value scoring methodology to align with 40 CFR Part 58.14(c)(1), and determined that if a monitor's design value was equal to or greater than 80% of the standard, then there was at least a 10% chance of having a design value of 80% of the standard in the next three years; and, therefore, would not be a likely candidate for decommission. The TCEQ will reconsider the scoring methodology for the 2025 FYA.

Comment 3: The CAC encouraged the TCEQ to include inter-monitor correlation statistics, like information provided in the 2015 FYA, to help evaluate if monitors were redundant or could better achieve monitoring objectives if redeployed.

Response 3: The TCEQ evaluated all the metrics used in the 2015 FYA and determined that the inter-monitor correlation statistic for O₃ and PM_{2.5} in Texas did not provide meaningful information to evaluate whether individual network monitors should be added, relocated, or decommissioned. For example, in the 2015 FYA, 71 O₃ monitors were assessed with the inter-monitor correlation tool and of those monitors, 13 showed low correlation; but all 13 monitors had design values greater than 84% of the NAAQS, and were thus ineligible for decommission or reallocation. The pollutant network evaluation metrics (regulatory value, NAAQS value, data trend value, historical value, and source impact value) were determined to collectively provide more meaningful monitor evaluation.

Comment 4: The CAC recommended that the TCEQ include a more substantial susceptible population analysis, especially due to the current EPA NAAQS PM review showing disparate racial PM exposure impacts.

Response 4: The TCEQ appreciates the information of the recent PM NAAQS review regarding PM exposure impacts and will consider that in the development of future FYAs. In April 2020, the EPA announced a proposal to retain, without changes, the NAAQS for PM after careful review and consideration of the most current available scientific evidence and risk exposure information. As is stated in the FYA, the TCEQ federal ambient air quality network meets, and in many cases exceeds, the federal monitoring requirements and objectives specified in 40 CFR Part 58 and its appendices, and as such, the number, type, and location of monitors in the TCEQ federal network is sufficient to characterize area air quality for use in evaluations to determine compliance with the NAAQS, for all members of the public, including susceptible individuals.

Comment 5: The CAC requested that the TCEQ deploy a second near-road nitrogen dioxide (NO₂) monitoring station by 2025 in the Austin MSA based on the area's projected population. The CAC recommended that the TCEQ begin securing an alternative location for the current Austin North Interstate 35 near-road site, due to forthcoming construction to allow for a quick re-location.

Response 5: As indicated on page 81 of the FYA, the TCEQ stated that a second near-road NO₂ monitor will be required when the Austin MSA reaches a population of 2.5 million. The TCEQ evaluates the Austin MSA population annually in the AMNP and will propose the monitor in the AMNP when the estimated population meets the threshold. The property owner of the current Austin MSA near-road monitoring site, Austin North Interstate 35, confirmed that future interstate construction will not require a site relocation.

Comment 6: The CAC recommended scoring all monitors that report data to the TCEQ website in the FYA and AMNP, including state-funded non-regulatory monitors, and recommended the TCEQ to use 2019 design values and populations instead of the 2018 data.

Response 6: As stated in the introduction, the FYA is limited to the portion of the TCEQ air monitoring network designed to comply with federal monitoring requirements and supported by federal funding. The TCEQ state-initiative network monitors, supporting a variety of purposes including potential health effects evaluation, are outside the scope of the FYA and were not included. The TCEQ utilized the most recently available EPA certified data and design values for the FYA, which were from 2018. Ambient air monitoring data are required to be certified by Primary Quality Assurance Organizations by May 1 of the following year, and the EPA has historically reviewed certified data and calculated design values after the July 1 FYA and AMNP deadlines. Population estimates from 2018 were used to correlate with the most recently available EPA certified data and due to the population estimate release dates and report development time constraints. Census Bureau annual population estimates are released in late March to April; the release dates are beyond the control of the TCEQ. The 2020 AMNP also utilized the most recently available EPA certified data and population estimates for 2018.

Comment 7: The CAC requested that PM_{2.5} NAAQS and trends scores be assigned for non-regulatory monitors (specifically for the Austin Northwest monitor) and that the PM_{2.5} trend for Austin Webberville be re-scored to account for increasing recent design value trends. The CAC noted that Figure 25 does not show the San Antonio urbanized area.

Response 7: The FYA is intended to confirm that the existing network continues to meet the objectives in 40 CFR Part 58, Appendix D, and to evaluate whether individual network monitors should be added, relocated, or decommissioned to best understand and evaluate air quality with existing resources. Due to this defined scope, non-NAAQS comparable monitors do not meet the objectives of 40 CFR Part 58. As noted in the 2020 AMNP, the Austin Northwest PM_{2.5} non-NAAQS comparable monitor will be replaced with a PM_{2.5} federal equivalent monitor (FEM) upon deployment of the relocated site. The Austin Webberville PM_{2.5} trend data are accurately listed in the FYA based on the defined years; 2019 data will be incorporated in the next FYA. Additionally, the Austin Webberville PM_{2.5} monitor was valued as critical due to meeting a required monitoring objective. Changes to the data trend metric would not change the critical value assessment. The TCEQ acknowledges that the San Antonio urbanized area in Figure 25 is not outlined, however the urban area is provided in Figure 27.

Comment 8: A citizen commented that the TCEQ should review all available ambient air monitoring technologies in the FYA so that the public can compare what is currently being used and available and that this inclusion should be mandatory.

The citizen commented that there was crucial data missing from the NAAQS values and Data Trend values and that even partial data from a new monitor is still crucial that could be potentially lifesaving and the NAAQS value metric should be used (even for non-NAAQS comparable monitors). The citizen similarly commented that crucial data were missing from the Data Trend Values to provide a realistic and accurate assessment and that the Data Trend metric should be used for pollutants without NAAQS and for non-NAAQS comparable monitors.

Response 8: The TCEQ continually evaluates advances in ambient air monitoring technology. However, because regulatory monitors used for determination of compliance with the NAAQS are required to meet federal methods, a full review of all available technologies was not required, nor detailed in this assessment. The TCEQ continues to evaluate newer technologies as they become available as updated and listed on the EPA webpage (<https://www.epa.gov/amtic/air-monitoring-methods-criteria-pollutants>) and proposes method changes through the AMNP.

Due to the FYA defined scope, non-NAAQS comparable monitors do not meet the objectives of 40 CFR Part 58 and the resulting data are only used for comparison purposes and were not scored with the NAAQS Values or the Data Trend Values. The EPA determines the pollutant requirements and necessary calculations for NAAQS design values, see <https://www.epa.gov/criteria-air-pollutants/naaqs-table>, and most criteria pollutant design values are based on three years of data. Monitors with less than the required length of data do not have enough information for direct NAAQS comparison. In many FYA instances, annual monitor data, insufficient for NAAQS design value calculation, were provided in tables to provide as much information about the monitor data as possible. Additionally, a new monitor may only have one design value scored in the metric, but a single design value data point was not used on a trend graph.

Comment 9: A citizen requested the Lavaca County O₃ levels and asked why smaller counties with ongoing air quality issues were not listed, that counties with current or ongoing documented non-compliance issues should be a top priority, and that the Texas non-compliant oil and gas facility names and numbers should be included in the FYA's and annual assessments.

Response 9: As stated in the introduction, the FYA was drafted to confirm that the existing ambient air monitoring network continues to meet the objectives in 40 CFR Part 58, Appendix D, and to evaluate whether individual network monitors should be added, relocated, or decommissioned to best understand and evaluate air quality with existing resources. The TCEQ places air monitors according to federal air monitoring requirements. Federal O₃ monitoring requirements are based on the most recent MSA population estimates and the area three-year O₃ design value concentration. The counties for each MSA are delineated by the U.S. Office of Management and Budget (OMB). Lavaca County, designated by the OMB as an outlying county in the Corpus Christi region, is not delineated in an MSA and thus, there are no federally required monitors. All Texas counties are listed in Appendix D of the FYA with additional OMB information regarding the county type, central or outlying, and the statistical area, if any.

Comments related to adding elements to the FYA that are not required under 40 CFR Part 58.10(d), like adding information on counties with non-compliance issues and lists of non-compliant oil and gas facility names are outside the scope of this assessment.

Comment 10: A citizen commented that the Lowest Achievable Emission Rate (LAER) installation and emission offsets should be enforced more rigorously in residential areas and areas with sensitive populations, that non-compliant facilities should be targeted by the TCEQ to attain LAER, and enforcement should be mandatory, with disregard to industrial growth. The commenter noted that industrial growth should not come at the cost of human lives or well-being and noted that there should be repercussions when allowable emissions are exceeded and that facilities should not be legally allowed to exceed emissions.

Response 10: As stated previously, the FYA was drafted to confirm that the existing ambient air monitoring network continues to meet the objectives in 40 CFR Part 58, Appendix D, and to evaluate whether individual network monitors should be added, relocated, or decommissioned to best understand and evaluate air quality with existing resources. Comments related to LAER, emissions offsets, and permit enforcement are outside of the FYA scope.

Comment 11: A citizen commented that the NAAQS are set without parameters and that exposure limits should be based tightly around parameters such as area type, proximity to receptors, facility proximity to sensitive population residential areas. The citizen further commented that there were no federal ambient air quality standards for O₃ precursors like volatile organic compounds (VOCs) and carbonyls.

Response 11: The Federal Clean Air Act (FCAA) requires the EPA to set the NAAQS (40 CFR Part 50) for six principal “criteria” pollutants considered harmful to public health and the environment. Information on the NAAQS and how EPA sets, reviews and revises the standards can be found on the EPA website (<https://www.epa.gov/criteria-air-pollutants>). Comments related to the NAAQS, exposure limits and proximity, and national standards for VOCs and carbonyls are outside of the FYA scope.

Comment 12: A citizen commented that the FYA should include a review of the VOC monitoring network supplemented by state and industry-initiated monitoring and that everything must be shown to be adequate and that more must be required from the FYA to ensure the safety and well-being of Texas citizens.

Response 12: As stated in the introduction the FYA is designed to comply with requirements under 40 CFR Part 58.10(d) and as such, is limited to the portion of the TCEQ air monitoring network designed to comply with federal monitoring requirements under 40 CFR Part 58, Appendix D and supported by federal funding. Comments related to state and industry-initiated monitoring and changes to the FYA requirements in the CFR are outside of the FYA scope.

The TCEQ robust network of state-initiative monitors that support a variety of purposes, even though outside of the scope of this document, provides valuable information for assessing public health. Data from these state-initiative monitors are located on the TCEQ webpage (<https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=home.welcome>).

Additionally, the TCEQ evaluates measurements of air toxics in ambient air collected from air monitoring sites that are located throughout the state. TCEQ toxicology personnel evaluate these measured chemical concentrations for potential to cause adverse health effects and odors. The TCEQ uses screening levels, termed Air Monitoring Comparison Values (AMCVs), that are set to protect human health and welfare, including for sensitive populations, to evaluate monitored concentrations of ambient pollutants. AMCVs are used by the TCEQ to determine if there is a potential health concern. Toxicology Division evaluations of ambient air toxic data for monitors that are operated in addition to those that are federally required are available online at <https://www.tceq.texas.gov/toxicology/regmemo/AirMain.html>.

Comment 13: A citizen commented that O₃ monitors provide near real-time data to the public and allow for trends assessment and that these data are needed anywhere oil or gas plants are nearby homes or receptors. The citizen further commented that Corpus Christi West’s O₃ levels did not continually decrease during the 18-year span as there was an increase from 2007 to 2008 and 2009 to 2012 and that there were similar increases at Corpus Christi Tuloso and Victoria.

Response 13: The TCEQ operates an air monitoring network that is intended to measure pollutant concentrations representative of regional areas frequented by the public. The monitors measure pollutant concentrations in ambient air, which can be impacted by industrial sources present in an area. These monitors do not, however, provide measurement of emissions from specific individual sources. Placement of air monitors discussed in the FYA is determined according to federal air monitoring requirements, many of which dictate the required number of monitors for an area based on population. As described in the FYA on pages 23-24, federal O₃ monitors are required for MSAs with populations of 350,000 or greater. The TCEQ meets and exceeds the federal O₃ monitoring requirements.

The FYA Data Trend metric was developed to evaluate a monitor’s historical concentration data from the last ten years, or as many years as available. The overall trend determines the metric score. Figure 11 of the FYA show that the O₃ monitor trends in Corpus Christi and Victoria correlate together, and even though the trend graphs indicate slight, intermittent increases, the overall trend from 2002 to 2018 is decreasing.

Comment 14: A citizen commented that *Table 13: Corpus Christi and Victoria Ozone Network Evaluation* Data Trend and Source Impact Values were misleading and that even though there were minimal source contributions, the contributions were not insignificant and that the

evaluation was misleading because it diminished the emissions adverse impact.

Response 14: The Source Impact Value metric was based on a monitor's importance in evaluating the impacts of pollutant sources on an area's air quality. As discussed in the FYA page 23, ground-level O₃ is not emitted directly into the air but is created by chemical reactions in the presence of sunlight, therefore, there are no O₃ sources and all FYA O₃ monitors were assigned a minimal source contribution for the Source Impact Value metric. The Coastal Area emission inventory were included in Table 10 of the FYA by area and by pollutant. See Response 13 for information related to the Data Trend metric.

Comment 15: A citizen commented that the oil and gas industry's environmental justice sector should introduce legislation, add taxes and fees, and create mandatory increases in the distance of wells to receptors in residential areas, and create the ability to renegotiate oil and gas leases after serious violations. The citizen further commented that warning labels and health effects should be included next to allowable emissions.

Response 15: As stated previously, the FYA was drafted to confirm that the existing ambient air monitoring network continues to meet the objectives in 40 CFR Part 58, Appendix D, and to evaluate whether individual network monitors should be added, relocated, or decommissioned to best understand and evaluate air quality with existing resources. Comments related to the oil and gas industry environmental justice sector, increases in oil well distances from residential areas, oil and gas lease renegotiation, and permitted emissions warning labels and health effects are outside of the FYA scope.

Comment 16: A citizen commented that the FYA should include medical data, ongoing and past lawsuits, death rates, and cancer statistics from the five-year period.

Response 16: As stated previously, the FYA was drafted to confirm that the existing ambient air monitoring network continues to meet the objectives in 40 CFR Part 58, Appendix D, and to evaluate whether individual network monitors should be added, relocated, or decommissioned to best understand and evaluate air quality with existing resources. Comments related to adding elements to the FYA that are not required under 40 CFR Part 58.10(d), like medical data, ongoing and past lawsuits, death rates and cancer statistics, are outside of the scope.

Comment 17: The Sierra Club, Environmental Defense Fund (EDF), Environmental Integrity Project, Public Citizen, Texas Environmental Justice Advocacy Services, and Air Alliance Houston (Sierra Club et al.) commented that the FYA did not contain sufficient consideration to two elements required under 40 CFR Part 58.10(d) including the assessment of whether new monitoring technologies may be appropriate for monitoring network incorporation and the assessment considering the ability of the network in supporting air quality characterization for areas with relatively high populations of susceptible individuals. The Sierra Club et al. commented that the TCEQ must perform a technology review, compliant with 40 CFR Part 58.10(d), and should consider using mobile air quality monitoring to identify potential air quality problems not currently monitored, for example rural areas with high levels of oil and gas activity.

Further, the Sierra Club et al. commented that the TCEQ did not satisfy the obligation to consider the ability of the network to support air quality characterization for areas with relatively high populations of susceptible individuals and that the fact that the network satisfies minimum monitoring requirements does not mean it adequately characterizes areas with relatively high populations of susceptible individuals. Sierra Club et al. further commented that if compliance with minimum requirements were sufficient, the EPA would not have promulgated a separate requirement, and that it was not satisfactory to say a large percentage of TCEQ monitors are located in nonattainment areas as there may be locations with a high number of susceptible individuals experiencing air quality problems lacking monitors. Sierra Club et al. recommended that the TCEQ consult Texas Department of State Health Services (DSHS) data to determine which parts of the state have a higher than average prevalence of air-pollution-related health problems like asthma and pulmonary disease <sic> (COPD) and noted that a recent study and DSHS map showed that Ector County experienced risk-adjusted rates of COPD and asthma in older adults

nearly double the state-wide average, thus the TCEQ must review similar analyses to determine if there are areas with relatively high populations of susceptible individuals, but insufficient air monitoring.

Response 17: The TCEQ does not agree with these comments. Title 40 CFR Part 58.10(d) requires states to include an assessment of whether new technologies are appropriate for incorporation into the ambient air monitoring network. The TCEQ addressed this in the FYA by noting that the TCEQ continually evaluates advances in ambient air monitoring technology and proposes method changes through the AMNP, thus fulfilling the requirements in 40 CFR Part 58.10(d). Title 40 CFR Part 58.10(d) does not require states to assess every available technology, such as mobile monitoring, in the FYA. The TCEQ continues to evaluate newer technologies as they become available as updated and listed on the EPA webpage (<https://www.epa.gov/amtic/air-monitoring-methods-criteria-pollutants>) and proposes air monitoring equipment (including use of new technology) and method changes annually through the AMNP. For example, the TCEQ has replaced non-NAAQS comparable PM_{2.5} continuous monitors and non-continuous PM_{2.5} monitors with new advanced technology, federally equivalent PM_{2.5} continuous monitors, since the last FYA, documented annually in the TCEQ AMNP.

The TCEQ does not agree with the comment that the FYA did not satisfy the obligation to consider the ability of the network to support air quality characterization for areas with relatively high populations of susceptible individuals. Federal requirements state the FYA must consider the monitoring network's ability to support air quality characterization for areas with relatively high populations of susceptible individuals; however no definition is provided for "susceptible individuals" nor is guidance provided on the term "relatively high" or how to perform such an evaluation. In 71 Federal Register (FR) 61236 (October 17, 2006), concerning the addition of the FYA requirement, several commenters noted that this requirement would be challenging to implement, and the EPA acknowledged the challenge in obtaining information regarding distribution of susceptible individuals in specific geographical areas. However, the TCEQ assessed the ability of the federal monitoring network to support air quality characterization by evaluating the network compliance with 40 CFR Part 58 and its appendices, as well as evaluating monitor placement. There is no definition for susceptible individuals or relatively high populations and the TCEQ continues to support the FYA analysis.

Comment 18: The Sierra Club et al. commented that the FYA shows that the monitoring objectives under 40 CFR Part 58, Appendix D are not met in the Midland-Odessa area. Sierra Club et al. commented that this area is one of the fastest growing areas in Texas and the nation and that emissions exceed Texas' largest metropolitan areas and that researchers have found that Permian Basin emissions are underreported. The commenters noted that there is a single regional PM_{2.5} monitor in Odessa, that the TCEQ has not proposed to install any new monitors during the five year period covered by the FYA, and that the lack of regional ambient air quality monitoring makes it impossible to determine if the area is attaining the NAAQS, deprives citizens of air pollution data, and hinders air pollution research. The commenters stated to achieve these monitoring objectives the TCEQ must, minimally, install one O₃ monitor and one sulfur dioxide (SO₂) monitor in the Midland-Odessa area.

In addition, the Sierra Club et al. commented in the 2020 AMNP and again here, that the installation of these monitors is mandated by the minimum monitoring requirements and that because the Midland-Odessa population exceeds 350,000, one ozone monitor is required. They further suggest that at least one SO₂ population weighted emission index (PWEI) monitor is required because the score exceeds 5,000, calculated by multiplying the population of the area (378,249 for Midland-Odessa) by the total SO₂ emissions for the area (27,374 tons for TCEQ Region 7), and dividing by 1,000,000, resulting in a PWEI score of 10,354.

Response 18: The TCEQ does not agree with these comments. Minimum federal monitoring requirements for O₃ outlined under 40 CFR Part 58, Appendix D, Section 4.1(a) apply specifically to MSAs. According to the final rule, 71 FR 61,236 (October 17, 2006), page 61,267, the EPA investigated the current network compared with using either CSA or MSA as the basis for applying

the minimum network requirements. The results demonstrated that using MSA would ensure a few more sites in the small number of large CSAs that have high populations and large geographical areas without unnecessarily requiring new sites. Since using MSAs would not impose a significant new burden on the States and would make it more likely that within-MSA gradient characterization of O₃ would be characterized in high concentration areas, EPA adopted MSA as the appropriate unit of a metropolitan area to apply to the minimum O₃ monitoring requirements. In addition, while the final rule required fewer O₃ monitors, the EPA did not intend to encourage net reductions, however intended the surplus in the existing networks relative to minimum requirements to give States more flexibility to choose where to apply O₃ monitoring resources. The final rule further states that the EPA will work with each State to determine what affordable monitoring activities above minimum requirements would best meet the diverse needs of the program as well as the needs of other data users. EPA Region 6 concurred with the TCEQ monitoring activities as listed in the 2019 AMNP and the TCEQ concludes that the approved monitoring activities meet the diverse needs of the TCEQ program and data users.

Further, 40 CFR Part 58, Appendix D, Section 4.1(b), in regards to utilizing CSA information if multiple MSAs are involved, is related to siting an O₃ monitor (if required) and recording the maximum concentration for an area, and is not related to requiring the number of monitors for an area, which is detailed in 40 CFR Part 58, Appendix D, Section 4.1(a) (based on MSA populations).

MSAs are delineated by the OMB and used by the U.S. Census Bureau when reporting population estimates. The OMB delineated the Midland MSA as containing Midland and Martin Counties and a separate Odessa MSA as containing Ector County. Federal O₃ monitoring requirements are triggered by the MSA population based on the latest available census figures (see 40 CFR Part 58.50(c) and Table D-2 of Appendix D to Part 58). The Midland and Odessa individual MSA populations do not trigger O₃ monitoring for MSA populations with greater than 350,000 persons. TCEQ meets or exceeds federal monitoring requirements for MSAs in the Permian Basin area as detailed in the 2020 AMNP and the FYA.

The TCEQ does not agree with the Sierra Club et al. PWEI calculation result and use of emissions from counties outside of the individual Core Based Statistical Areas (CBSAs). The TCEQ used 2018 U.S. Census Bureau population estimates and 2017 National Emission Inventory data with 2018 TCEQ point-source emissions inventory data to calculate the PWEIs and to determine the minimum monitoring requirements for each CBSA (assessment included in the 2020 AMNP Appendix E). Based on this assessment, and the required CBSA population and associated CBSA emissions, the Midland CBSA, for Martin and Midland Counties, PWEI totaled 1,354, and the Odessa CBSA, for Ector County, PWEI totaled 1,627. The emission inventory information provided in Table 74 includes all TCEQ Region 7 - Midland, as footnoted and referenced in Appendix D, this includes 17 counties, 14 of which do not apply to either Midland or Odessa CBSAs.

As stated previously, the FYA was drafted to confirm that the existing federal ambient air monitoring network continues to meet the objectives in 40 CFR Part 58, Appendix D, and to evaluate whether individual federal network monitors should be added, relocated, or decommissioned to best understand and evaluate air quality with existing resources. The TCEQ also operates a robust state-initiative network outside of the scope of this document. The TCEQ further emphasizes that the Sierra Club et al. omits reference to existing regional monitors, including a federal SO₂ monitor listed in the FYA, at the TCEQ Big Spring Midway site in Howard County, operational since 2016, and the state-initiative VOC monitor at the TCEQ Odessa-Hays Elementary School site in Ector County, operational since 1999. In addition, while not required by federal rule and therefore not included in the FYA, the TCEQ is in the process of deploying three new state-initiative air monitoring sites in Goldsmith, West Odessa, and Midland. The new air monitoring sites, anticipated for deployment in the fall of 2020, will monitor for VOC, SO₂, and hydrogen sulfide. No additional PM or O₃ monitoring are planned at this time.

Comment 19: The Sierra Club et al. applauded the TCEQ for recognizing that additional near-road monitors will be needed in San Antonio by 2021 and in Austin during the five-year assessment period. The commenters also encouraged the TCEQ to install a near-road monitor in El Paso due

to the population of the Paso del Norte region, which includes El Paso, Las Cruces, New Mexico, and Juarez, Chihuahua, noting that the population of this region exceeds the requirement triggers for a near-road NO₂ monitor. The commenters stated that, due to the interconnected nature of the airshed, a monitor is required to achieve the monitoring objectives in Appendix D. Sierra Club et al. also commented that El Paso County will approach the population threshold by the end of the FYA period. The commenter encouraged the TCEQ to seek public input on the San Antonio, Austin, and El Paso near-road monitor placements with attention to environmental justice communities.

Response 19: The TCEQ appreciates the Sierra Club et al. concurrence with the TCEQ recommendation to establish a near-road monitor in the San Antonio CBSA by 2021 and in the Austin CBSA when the population threshold exceeds 2.5 million. Title 40 CFR Part 58, Appendix D, Section 4.3.2, requires that near-road monitors be established in each CBSAs with a population of 1,000,000 or more persons based on the latest available U.S. Census Bureau figures. The OMB defines the El Paso CBSA as containing El Paso and Hudspeth Counties; the El Paso CBSA is projected to have a 2025 population of 912,738, see Table 2. The TCEQ evaluates and documents the latest available U.S. Census Bureau figures annually in the AMNP. The TCEQ will propose the establishment of new near-road monitoring stations as Texas CBSAs reach the appropriate regulatory threshold. All current TCEQ near-road monitoring stations are measuring NO₂ design values less than 50% of the NAAQS (as shown in the FYA); and received a FYA NAAQS Value score of one.

To establish near-road monitoring sites the TCEQ follows requirements under 40 CFR Part 58, Appendix D, Section 4.3.2(a)(1) stating sites shall be selected by ranking CBSA road segments by annual average daily traffic (AADT) counts and then identifying one location adjacent to the highest ranked segments, considering fleet mix, roadway design, congestion pattern, terrain, meteorology, and federal siting criteria. Furthermore, the regulations require states to consider the potential for population exposure if multiple acceptable sites are available. The TCEQ must follow the federal requirements and, if multiple acceptable sites are available, will consider the ability of the site to provide population exposure, including environmental justice communities.

Comment 20: The Sierra Club et al. commented in the 2020 AMNP and again here, that since the TCEQ was installing a PM_{2.5} monitor in west Houston and due to potential elevated PM_{2.5} levels in west Houston (reported in an analysis by the Harvard School of Public Health and the EDF) and high population density, the TCEQ should also install a PM_{2.5} monitor at the TCEQ Bayland Park monitoring station, existing PM_{2.5} monitors should be maintained at their current locations, and that the TCEQ should work with the City of Houston, Harris County, and the EPA to support the installation of lower cost community monitors throughout Houston to provide communities early warning and aid regulators to take action against polluters. The Sierra Club et al. suggested the TCEQ should initiate a PM_{2.5} speciation source apportionment study to determine the sources of PM_{2.5} in west Houston and develop a plan to reduce PM_{2.5} emissions in that area.

Response 20: The TCEQ appreciates the support from the Sierra Club et al. to add a PM_{2.5} monitor in west Houston. The TCEQ Houston area PM_{2.5} federal monitoring network includes 13 area PM_{2.5} monitors to measure ambient PM_{2.5} concentration data through gravimetric, speciation, and continuous measurements to determine maximum concentrations, concentrations in areas of high population density, and background and transport concentrations. The TCEQ exceeds the Houston area federal requirement for eight monitors and as noted in the FYA, a PM_{2.5} continuous monitor will be added to the Houston North Wayside air monitoring site, to improve population exposure coverage just northeast of Interstate Loop 610. The TCEQ notes that the FYA and 2020 AMNP reports do not recommend any PM_{2.5} FEM monitor location changes or decommissions, only additions.

As stated in the introduction, the FYA is intended to confirm that the existing network continues to meet the objectives in 40 CFR Part 58, Appendix D, and to evaluate whether individual network monitors should be added, relocated, or decommissioned to best understand and evaluate air quality with existing resources. With the additions of the new west Houston PM_{2.5} FEM monitor and

the north Houston PM_{2.5} monitor, the PM_{2.5} Houston network, exceeds all federal requirements. TCEQ will further assess west Houston, including monitoring needs at the TCEQ Houston Bayland Park site, or other Houston area PM_{2.5} monitoring needs again in 2021. Community-placed monitors, which are not required and may not be NAAQS comparable, PM_{2.5} speciation source apportionment studies to determine the sources of PM_{2.5} in west Houston, and emissions reduction plans are beyond the scope of the FYA.

Comment 21: The Sierra Club et al. commented in the 2020 AMNP and again here that there was a compelling need for additional VOC monitors along the Houston ship channel and that recent data indicate possible systematic air emissions underreporting errors by facilities along the channel, meaning that Ship Channel facilities are exceeding permitted limits and communities are paying the price with their health. Sierra Club et al. commented that no VOC monitors are located along the Houston ship channel on the southbound side of Interstate Highway 610 and requested that a VOC monitor be placed near John R Harris Elementary school. Commenters also requested additional monitoring in Manchester, Pasadena, Deer Park, and Baytown.

Response 21: As previously stated, the FYA is intended to confirm that the existing network continues to meet the objectives in 40 CFR Part 58, Appendix D, and to evaluate whether individual network monitors should be added, relocated, or decommissioned to best understand and evaluate air quality with existing resources. Due to this defined scope, only Photochemical Assessment Monitoring Stations (PAMS)-related VOC monitoring is included in the FYA. PAMS monitoring objectives include collecting data to evaluate and support air quality model development and O₃ precursor concentration trend assessment for O₃ NAAQS attainment efforts. The TCEQ is required to have one Houston Metro area PAMS automated gas chromatograph (autoGC) for speciated VOCs at the TCEQ National Core Multipollutant Network (NCore) site, Houston Deer Park Number 2. The TCEQ operates two additional area autoGCs at Clinton and Channelview, exceeding federal PAMS VOC monitoring requirements.

The TCEQ also operates a robust network of state-initiative monitors that support a variety of purposes. Even though the TCEQ state-initiative monitors are outside of the scope of the FYA, this state-initiative monitoring network provides valuable information for assessing public health. Data from these state-initiative monitors are located on the TCEQ TAMIS webpage (<https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=home.welcome>). The TCEQ is significantly enhancing its state-initiative air monitoring capabilities along the Houston ship channel by deploying three new autoGC sites to monitor air toxics. The new autoGC air monitors, capable of continuous measurement of 46 volatile organic compounds, are currently planned for the Channelview/Jacinto Port, Manchester, and Pasadena communities. Locations have been identified and site construction activities are underway with monitoring anticipated to begin in the fall of 2020. While an autoGC is not planned at the John R Harris Elementary School, the TCEQ will be placing an autoGC at the Manchester/Central air monitoring site located one mile to the east of the school. The TCEQ is also collaborating with Houston Regional Monitoring Corporation (HRM) to make VOC monitoring data at their monitoring stations publicly available via TAMIS. This will include data from an existing autoGC at HRM Site 16 in Deer Park and a new autoGC to be placed at their existing HRM Site 7 in Baytown (HRM information and site locations are provided at <http://hrm.aecom.com/index.htm>.) The new state-initiative equipment and collaboration will expand TCEQ's ability to rapidly assess air quality and will help with daily monitoring of ambient conditions in the Houston ship channel and surrounding areas.

Comment 22: The Sierra Club et al. commented in the 2020 AMNP and again here that there was a clear need for a PM monitor in the Houston Fifth Ward and that an EDF analysis found that roads adjacent to these facilities had elevated air pollution. Commenters stated that the TCEQ should gather data and monitor for pollutants like lead (Pb) in the Fifth Ward and asserted that the residents needed air quality data so they can take action to protect their health from elevated levels of Pb and VOCs and to alert regulatory officials when they need to take specific action against potential emitters. Commenters noted that Fifth Ward monitoring beyond the minimum requirements would provide data for policy decisions, as required by 40 CFR Part 58.2(a)(5).

Commenters requested TCEQ to place a Pb and VOC monitor in the Houston Fifth Ward.

Response 22: As previously stated, the FYA is intended to confirm that the existing network continues to meet the objectives in 40 CFR Part 58, Appendix D, and to evaluate whether individual network monitors should be added, relocated, or decommissioned to best understand and evaluate air quality with existing resources. The TCEQ operates a robust Houston federal air monitoring network with four air monitoring sites within four to six miles of the Houston Fifth Ward. As described in the FYA, monitoring for particulate matter of 10 micrometers or less (PM₁₀) and PM_{2.5} are either occurring or are planned at the air monitoring sites within four to six miles of the Houston Fifth Ward.

Federal Pb monitoring regulations require monitoring near Pb sources with emissions greater than 0.50 tons per year or near sources expected to exceed the Pb NAAQS. No sources meeting these criteria are in the Houston Fifth Ward. The TCEQ is meeting federal requirements for Pb monitoring. PAMS air monitoring objectives include collecting data to evaluate and support development of air quality models and to track O₃ precursor concentration trends. The TCEQ is required to have one Houston Metro area PAMS autoGC for speciated VOCs and operates three such monitors, exceeding federal PAMS VOC monitoring requirements. See Response 21 for additional details on Houston area state-initiative VOC monitoring and expansion.

Comment 23: The Sierra Club et al. commented in the 2020 AMNP and again here that compelling evidence suggests a VOC monitor is needed in the Portland-Gregory <sic> area in addition to the new PM₁₀ monitor.

Response 23: As previously stated, the FYA is intended to confirm that the existing network continues to meet the objectives in 40 CFR Part 58, Appendix D, and to evaluate whether individual network monitors should be added, relocated, or decommissioned to best understand and evaluate air quality with existing resources. Due to this defined scope, only PAMS-related VOC monitoring is included in this plan. PAMS monitoring objectives include collecting data to evaluate and support air quality model development and O₃ precursor concentration trend assessment for O₃ NAAQS attainment efforts. No current federal PAMS VOC monitoring requirements are applicable for the Gregory-Portland area; however, the TCEQ will continue to evaluate the need for additional area monitors, including pollutants other than PM₁₀.

The TCEQ notes that three new air monitoring stations have been deployed in the Gregory-Portland area through a public-private partnership between area industry, the Gregory-Portland ISD, the University of Texas at Austin, and independent monitoring contractors. These three air monitoring stations, located at the Gregory High School, Stephen F. Austin Elementary, and at the Old East Cliff Elementary School, measure PM_{2.5}, oxides of nitrogen, SO₂, and 46 speciated VOCs. Data from the stations are provided on a publicly available website, <https://gpair.ceer.utexas.edu/>. Per the partnership, the University of Texas at Austin provides independent air monitoring data analyses and ensures data are obtained using methods and quality assurance protocols that meet or exceed EPA's air quality monitoring requirements.

Comment 24: The Sierra Club et al. commented in the 2020 AMNP and again here, that the TCEQ monitoring network was inadequate to determine if the largest SO₂ pollution sources were causing unhealthy levels of SO₂, that TCEQ must evaluate the addition of more SO₂ monitors, including additional SO₂ monitors around some of the largest Texas SO₂ sources such as the 25 coal-burning power plants subject to the EPA's Data Requirements Rule (DRR), above the minimum requirements, for areas with the potential to violate or contribute to a violation of the NAAQS. Specifically, the commenter stated the TCEQ failed to take steps to protect the public from monitored NAAQS violations around Martin Lake in Rusk County and Harrington Station in Potter County, or ensure that the violating areas meet the FCAA objectives and regulations. The commenter stated that by applying the SO₂ standard calculations, the TCEQ Tatum CR 2181d Martin Creek Lake SO₂ monitor in Rusk County and the Amarillo Xcel El Rancho SO₂ monitor (near Harrington Station in Potter County) may have 2017-2019 design values exceeding the NAAQS. The commenter stated that despite these monitored violations, the FYA did not indicate that the

TCEQ took steps to work with the EPA, as required, to ensure that the SO₂ monitoring network met the objectives of the FCAA or the requirements under 40 CFR Part 58, Appendix D, Section 4.4.3, identifying areas with unhealthy air quality and taking steps to bring those areas into attainment. The commenter stated that the TCEQ must take appropriate steps to ensure that air quality near those plants comes into compliance with the FCAA and the TCEQ's failure to work with the EPA or take action to ensure that the monitoring network meets the FCAA monitoring objectives, i.e. compliance with the NAAQS, is arbitrary, capricious, and unlawful.

Response 24: The TCEQ does not agree with this comment or the commenter's assertion that additional air quality monitors are needed in these areas to properly characterize ambient air quality. Title 40 CFR Part 58, Appendix D, section 4.4.3, referenced in the comment, states that the Regional Administrator (RA) may require additional monitoring above the minimum requirements listed in Section 4.4.2 if the minimum monitoring requirements are not sufficient to meet monitoring objectives or where an area has the potential to violate the NAAQS. The TCEQ regularly works with the EPA through the submittal of the AMNP. The EPA concurred with the 2019 AMNP, and previous AMNPs, and the RA has not indicated further monitoring is needed to characterize air quality in these areas. The TCEQ is meeting all regulatory SO₂ requirements in the DRR and as listed in 40 CFR Part 51.1205 and in 40 CFR Part 58, Appendix D, Section 4.4.2. The EPA approved of all TCEQ DRR SO₂ monitor locations in previous TCEQ AMNPs. Further, comments related to air quality compliance to bring areas into attainment are outside the scope of this assessment.

Comment 25: The Sierra Club et al. commented that the TCEQ must evaluate additional monitoring to ensure compliance with the SO₂ NAAQS at W.A. Parish, San Miguel, and Coletto Creek or adopt enforceable emission limits to ensure attainment due to increased facility SO₂ emissions reported in the TCEQ 2020 *Sulfur Dioxide Ongoing Data Requirements Annual Report*. Despite the increases, the commenter stated that the TCEQ failed to consider any evaluation of whether additional monitoring around these sources is needed to ensure compliance with the NAAQS.

Response 25: The TCEQ does not agree with these comments. The TCEQ evaluated the increased facility SO₂ emissions reported in the TCEQ 2020 *Sulfur Dioxide Ongoing Data Requirements Annual Report*, and based on the EPA's preamble to the DRR, determined that the very small increase in emissions from the original designation modeling inputs would not be expected to change the attainment/unclassifiable designation and the areas would be expected to continue meeting the 2010 one-hour SO₂ NAAQS. The TCEQ continues to recommend that no additional SO₂ air quality modeling or monitoring is needed to determine compliance with the 2010 SO₂ NAAQS for any of the seven Texas counties listed in AMNP Appendix F, including the areas around WA Parish, San Miguel, and Coletto Creek. The TCEQ is meeting all regulatory DRR SO₂ requirements.

The imposition of more stringent emission limits is outside the scope of the FYA.

Comment 26: The Sierra Club et al. resubmitted the May 14, 2020, comments regarding the 2020 AMNP.

Response 26: The TCEQ provided responses to the Sierra Club et al. May 14, 2020, comments regarding the AMNP in the 2020 AMNP Appendix N.

Comment 27: The Sierra Club et al. requested that the TCEQ conduct public hearings in Houston and El Paso on the FYA.

Response 27: The FYA is not subject to notice and comment rulemaking procedures and because FYA notice and comment procedures are not required under federal rule and the TCEQ's current public comment process for the FYA exceeds requirements under 40 CFR Part 58.10(d), the TCEQ is not compelled to hold public hearings on the FYA. The TCEQ is responding to the comments that were received during the provided notice period for the FYA and is posting all comments and responses on the TCEQ webpage with the FYA. As noted in the Introduction, comments received on the FYA will be considered during the development of the *TCEQ 2021 Annual Monitoring*

Network Plan.

Acronyms

% - percent
AMCV - Air Monitoring Comparison Values
AMNP - annual monitoring network plan
autoGC - automated gas chromatograph
CAC - Central Texas Clean Air Coalition
CBSA - core based statistical area
CFR - Code of Federal Regulations
DRR - Data Requirements Rule
DSHS - Department of State Health Services
EDF - Environmental Defense Fund
EPA - United States Environmental Protection Agency
FCAA - Federal Clean Air Act
FEM - federal equivalent method
FYA - five-year assessment
HRM - Houston Regional Monitoring Corporation
LAER - Lowest Achievable Emission Rate
MSA - metropolitan statistical area
NAAQS - National Ambient Air Quality Standards
NCore - National Core Multipollutant Network
NO₂ - nitrogen dioxide
O₃ - ozone
OMB - United States Office of Management and Budget
PAMS - Photochemical Assessment Monitoring Stations
Pb - lead
PM - particulate matter
PM₁₀ - particulate matter of 10 micrometers or less in diameter
PM_{2.5} - particulate matter of 2.5 micrometers or less in diameter
PWEI - population weighted emissions index
RA - Regional Administrator
SO₂ - sulfur dioxide
TAMIS - Texas Air Monitoring Information System
TCEQ - Texas Commission on Environmental Quality
U.S. - United States
VOC - volatile organic compound

From: [Hoekzema, Andrew](#)
To: [MONOPS](#)
Cc: [Alepez, Christiane](#)
Subject: Central Texas Clean Air Coalition Comment Letter on TCEQ 2020 5-Year Monitoring Network Assessment
Date: Wednesday, July 1, 2020 4:03:21 PM
Attachments: [image001.png](#)
[2020-07-01 CAC Comment Letter on TCEQ 5 yr Monitoring Assessment.pdf](#)

Hello,

Please see the attached comment letter from the Central Texas Clean Air Coalition on TCEQ's 2020 5-Year Monitoring Network Assessment. Please let us know if you have any questions on any of these comments.

Thank you,

Andrew Hoekzema

Director of Regional Planning and Services

Capital Area Council of Governments

Ph: 512-916-6043 ~ Fax: 512-916-6001

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No electronic communication by a CAPCOG employee may legally obligate the agency





Central Texas Clean Air Coalition

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Council Member Mike Heath
City of Pflugerville

Judge Sam Biscoe
Travis County

Commissioner Terry Cook
Williamson County

July 1, 2020

Ms. Holly Landuyt
Texas Commission on Environmental Quality
P.O. Box 13087, MC-165
Austin, Texas 78711-3087

Subject: Comments on *Texas 2020 Five-Year Ambient Monitoring Network Assessment*

Dear Ms. Landuyt:

The Central Texas Clean Air Coalition (CAC) appreciates this opportunity to comment on the Texas Commission on Environmental Quality's (TCEQ's) *Texas 2020 Five-Year Ambient Monitoring Network Assessment*. We appreciate the hard work that TCEQ staff have put into this important document and the valuable information that it provides on the state's air monitoring efforts. We are providing the following comments for your consideration.

- 1) We recommend an assessment of whether adding additional ozone (O₃) and fine particulate matter (PM_{2.5}) monitors to the Austin-Round Rock-Georgetown Metropolitan Statistical Area (MSA) would better address monitoring objectives than the current network provides with consideration of the value that additional monitors would provide in ensuring resiliency in case a monitor needs to be moved or has a problem. For example, the current re-location of CAMS 3 has left only one regulatory O₃ monitor for the entire MSA over the last several months.
 - a) The current and planned number of O₃ and PM_{2.5} monitors in the MSA does not align with the following TCEQ statements from the assessment:
 - i) The need for "a dispersed network across urban areas" to "fully evaluate contributing sources and regional O₃ levels" (p. 23).
 - ii) "Particulate Matter monitoring is generally conducted over dispersed areas with an emphasis on monitoring in upwind locations to evaluate incoming particulate matter concentrations" (p. 28).
 - b) We note that TCEQ is operating a number of monitors statewide that it considers "low" or "medium" value. TCEQ's statewide monitoring objectives could be better served by re-allocating the resources used for maintaining these monitors to adding monitors in areas like the Austin-Round Rock-Georgetown MSA where TCEQ is only operating the minimum number of monitors.
- 2) We respectfully note that that TCEQ's scoring methodology and characterization of 40 CFR §58.14 on page 16 leaves what we believe to be a mistaken impression that it can't redeploy or decommission any monitor that has a design value that is 80% of the National Ambient Air Quality Standards (NAAQS) or higher. 40 CFR §58.14(c)(1) actually says that a monitor with less than a 10% chance of having a design value of 80% of the NAAQS or higher automatically qualifies for decommissioning under 40 CFR §58.14(c)(1), and a monitor not eligible for decommissioning under this provision can still qualify for decommissioning under any of the criteria provided under §58.14(c)(2) – (6), or on a

case-by-case basis as described in §58.14. We recommend reconsideration of this aspect of the scoring methodology (i.e., assigning a “critical” score to any monitor with a design value of 80% or higher of the NAAQS), perhaps by increasing the threshold, and we recommend including additional text clarifying the other circumstances that 40 CFR §58.14 provides that would allow TCEQ to decommission or relocate a monitor.

- 3) We encourage TCEQ to consider including statistics on inter-monitor correlation, similar to what was included in TCEQ’s 2015 5-Year Assessment, to help evaluate whether any monitors are redundant or could better achieve monitoring objectives if redeployed.
- 4) We recommend a more substantial analysis of susceptible populations (p. 22), especially in light of information in the current PM NAAQS review which shows disparate racial impacts of PM exposure¹.
- 5) We request that TCEQ deploy a second near-road nitrogen dioxide (NO₂) monitoring station by 2025 in the Austin-Round Rock-Georgetown MSA based on the region’s projected population (p. 20 and p. 81).
- 6) Due to the forthcoming construction along IH-35 in Austin, we recommend that TCEQ start working on securing alternative locations for the region’s current near-road monitor, CAMS 1068, in order to facilitate a quick re-location of the existing equipment once construction begins.
- 7) We recommend scoring all monitors that report data to TCEQ’s website in this assessment and future annual monitoring network plans, including state-funded non-regulatory monitors.
- 8) We recommend the use of 2019 design values and county populations rather than 2018 data for design values and county populations.
- 9) We request that scores be assigned for CAMS 3 PM_{2.5} NAAQS and trends. While we realize this is not a “regulatory” analyzer, it still provides data that can be compared to the NAAQS and for public reporting.
- 10) The CAC recommends an analysis of the re-scoring of the PM_{2.5} trend score for CAMS 171 to reflect increasing design values in recent years (Table 38 on p. 98).
- 11) We note that Figure 25 seems to not show the San Antonio Urbanized Area (p. 78).

If you have any questions on any of these comments or would like to discuss with us further, please contact CAPCOG Director of Reginal Planning and Services Andrew Hoekzema at ahoekzema@capcog.org or (512) 916-6043. Again, thank you for this opportunity to comment, and we look forward to continuing to work with TCEQ on air quality in the future.

Sincerely,



City of San Marcos Mayor Jane Hughson
Chair, Central Texas Clean Air Coalition

¹ <https://www.epa.gov/naaqs/particulate-matter-pm-standards-policy-assessments-current-review-0>

From: [Adrenus Craton](#)
To: [MONOPS](#)
Subject: 2020 Texas FYA_Comments.pdf
Date: Monday, June 29, 2020 10:09:39 PM
Attachments: [2020 Texas FYA_Comments.pdf](#)

Please see attached comments and questions in response to the 2020 Texas Five-Year Ambient Monitoring Network Assessment.

The reason why I am stepping forward to comment and question any aspect of this assessment is because we are currently suffering from being systematically poisoned by a nearby gas plant and its facilities situated on our family estate.

There has been so much unnecessary loss of life and loss of quality of life over the past 50 years because of this facility that has changed company hands a multitude of times, leaving us as fallout every time.

If our only hope of survival of my generation and my young nieces' and nephew's generation is to rewrite the legislature currently standing in the way of our absolute safety in our own homes, then here is the place to start.

*Pardon any typos, as this is being written under increasingly stressful, sickening and unreasonably hazardous and toxic conditions due to non-compliant gas plant facilities run by ETC Texas Pipeline, LTD (CN601587652) and Sulphur River Exploration, INC (CN601307911).

Sent from mobile

ATTN: @monops@tceq.texas.gov

Texas 2020 Five-Year Ambient Monitoring Network Assessment
Comments & Questions

1. We would like a full review of the available technologies in ambient air monitoring included in the FYA, so that we can in real time compare with what is currently being used with what is currently available. This should be a mandatory inclusion.
2. There is too much crucial data missing from the Monitor National Ambient Air Quality Standards (NAAQS) Values and Data Trend Values
3. What are the Ozone levels for Lavaca county, and why aren't smaller counties with ongoing air quality issues listed?
4. Why isn't the installation of the Lowest Achievable Emission Rate (LAER) and emission offsets enforced more rigorously in residential areas, and even more so, in areas considered to be part of "sensitive populations" — This should be mandatory, even if it debilitates industrial growth, because human life is more important and should be prioritized. Industrial growth SHOULD NOT come at the cost of human lives or our well-being.
5. NAAQS are set, but without parameters! Exposure limits should be based more tightly around various parameters. For example, area type, well proximity to receptors, facility proximity to residential areas with "sensitive populations" etc, etc.
6. There should be repercussions from plants and their facilities once they exceed allowable emissions. Even more, they should not be legally allowed to exceed emissions period. Every time they exceed, someone is effected adversely. This is UNACCEPTABLE.
7. Why are there no federal ambient air quality standards for O3 precursors (including monitoring for VOC's and carbonyls)?
8. Review of the volatile organic compound (VOC) monitoring network, which is supplemented by state and industry-initiated monitoring around Texas, needs to be included in the Texas FYA's. Anything that the FYA does not cover, needs to be covered by what the VOC monitoring network does, and this must be shown to be adequate. Otherwise, more must be required from the FYA to ensure the safety and well being of Texas citizens who are at the mercy of this industry's harmful, cancer causing emissions that usually end in death.
9. Area O3 monitors are meant to provide near real-time data to the public and allow for its trends assessment. However, this type of data is needed *anywhere* there are oil or gas plants located within close proximity to home / receptors.
10. Corpus Christi West's O3 levels have NOT continually decreases over an 18 year span, as was recorded in Figure 11: Eight Hour Ozone Design Value Trends from 2002 to 2018. There were increases from 2007 to 2008. There were steady increases from 2009 to 2012. Corpus Christi Tuloso's O3 levels increased from 2007 to 2008. There were steady

increases from 2009 to 2011. Victoria's O3 levels increased from 2002 to 2004. There were more increases from 2009 to 2011. And even more increases from 2014 to 2016.

11. In Table 13: Corpus Christi and Victoria Ozone Network Evaluation, The Data Trend and Source Impact Values are misleading. Just because there are minimal source contributions, does not mean that the contributions are insignificant. The way this evaluation has been recorded is misleading because it diminishes the adverse impact such emissions are having.

Comments and questions by Adrenus Craton
Monday, June 29, 2020

From: [Adrenus Craton](#)
To: [MONOPS](#)
Cc: [Kelly Ruble](#); [Cindy Smith](#); [Michael Delacruz](#); [Susan Clewis](#); schaub.lisa@epa.gov; matt.ripley@dot.gov; Walter.Rucker@dot.gov
Subject: 2020 Texas FYA_RevisedComments.pdf
Date: Tuesday, June 30, 2020 2:29:13 AM
Attachments: [2020 Texas FYA_RevisedComments.pdf](#)

Dear All,

Please see attached comments and questions in response to the 2020 Texas Five-Year Ambient Monitoring Network Assessment.

The reason why I am stepping forward to comment and question any aspect of this assessment is because we are currently suffering from being systematically poisoned by a nearby gas plant and its facilities situated on our family estate.

There has been so much unnecessary loss of life and loss of quality of life over the past 50 years because of this facility that has changed company hands a multitude of times, leaving us as fallout every time.

Just because we have not taken the advices of the EPA and gone ahead to make our local news stations, national and international news outlets aware of what is happening to our family, does not mean we don't care about our families out here.

If our only hope of survival for myself, my generation and my young nieces' and nephew's generation, is to rewrite the legislature currently standing in the way of our human rights to absolute safety in our own homes from the some of oil and gas industry's careless, negligent, hazardous, eyesore of operations—then here is the place we start.

God help us,
Adrénus

*Pardon any typos, as this is being written under increasingly stressful, sickening and unreasonably hazardous and toxic conditions due to non-compliant gas plant facilities run by ETC Texas Pipeline, LTD (CN601587652) and Sulphur River Exploration, INC (CN601307911).

Sent from mobile

ATTN: @monops@tceq.texas.gov

Texas 2020 Five-Year Ambient Monitoring Network Assessment
Comments & Questions

1. We would like a full review of the available technologies in ambient air monitoring included in the FYA, so that we can in real time compare what is currently being used with what is currently available. This should be a mandatory inclusion.
2. There is too much crucial data missing from the Monitor **National Ambient Air Quality Standards (NAAQS) Values** to give a realistic and accurate assessment. Even if it is only partial data from new monitoring, it's still crucial data which could potentially be life saving. Therefore, the NAAQS Value metric SHOULD be used.

“NAAQS Value metric was not used for non-NAAQS comparable monitors and pollutants without NAAQS, including PM_{2.5} monitoring by tapered element oscillating microbalance (TEOM) and monitoring for volatile organic compounds (VOCs), carbonyls, total reactive nitrogen compounds (NO_y), PM coarse (PM_{10-2.5}), and PM_{2.5} speciation. If a new monitor was deployed or if a FEM monitor replaced a non-NAAQS comparable monitor in the last three years, design values are not yet effective, therefore the NAAQS Value metric was not used.”— 2020 Texas FYA

3. There is too much crucial data missing from the **Data Trend Values** to give a realistic and accurate assessment. Even if it is only partial data from new monitoring, it's still crucial data which could potentially be life saving. Therefore, the Data Trend metric SHOULD be used. As well, pollutants without NAAQS / non-NAAQS comparable monitors SHOULD be assessed with the Data Trend Value metric.

“Pollutants without NAAQS and non-NAAQS comparable monitors were not assessed with the Data Trend Value metric. If a new monitor was deployed or if a FRM or FEM monitor replaced a non-NAAQS comparable monitor in the last three years, design values are not yet effective, therefore the Data Trend metric was not used.”— 2020 Texas FYA

4. What are the Ozone levels for Lavaca county, and why aren't smaller counties with ongoing air quality issues listed? Counties with current / ongoing documented non-compliance issues (especially related to air quality) should be made TOP PRIORITY. Non-compliant facilities should be more aggressively targeted by TCEQ and other environmental protection agencies, in attaining the lowest achievable emission rate (LAER) and emission reduction (offset). It should be mandatory to include in the FYA's (and annual assessments) the company names and numbers of ALL currently non-compliant oil and gas facilities in Texas.
5. Why isn't the installation of the Lowest Achievable Emission Rate (LAER) and emission offsets enforced more rigorously in residential areas, and even more so, in areas considered to be part of “sensitive populations” — This should be mandatory, even if it debilitates industrial growth, because human life is more important and should be prioritized. Industrial growth SHOULD NOT come at the cost of human lives or our well-being.

6. **NAAQS are set, but without parameters.** Exposure limits should be based more tightly around various parameters. For example, area type, well proximity to receptors, facility proximity to residential areas with “sensitive populations” etc, etc.
7. There should be repercussions from plants and their adjacent / associated facilities once they’ve exceed allowable emissions. Even more, they should not be legally allowed to exceed emissions period. Every time they exceed, someone is effected adversely. This is UNACCEPTABLE.
8. Why are there no federal ambient air quality standards for O3 precursors (including monitoring for VOC’s and carbonyls)?
9. Review of the volatile organic compound (VOC) monitoring network, which is supplemented by state and industry-initiated monitoring around Texas, needs to be included in the Texas FYA’s. Anything that the FYA does not cover, needs to be covered by what the VOC monitoring network does, and this must be shown to be adequate. Otherwise, more must be required from the FYA to ensure the safety and well being of Texas citizens who are at the mercy of this industry’s harmful, cancer causing emissions that usually end in death.
10. Area O3 monitors are meant to provide near real-time data to the public and allow for its trends assessment. However, this type of data is needed *anywhere* there are oil or gas plants located within close proximity to home / receptors.
11. **Corpus Christi West’s O3 levels have NOT continually decreased over an 18 year span, as was alluded to and recorded in Figure 11: Eight Hour Ozone Design Value Trends from 2002 to 2018. There were increases from 2007 to 2008. There were steady increases from 2009 to 2012. Corpus Christi Tuloso's O3 levels increased from 2007 to 2008. There were steady increases from 2009 to 2011. Victoria's O3 levels increased from 2002 to 2004. There were more increases from 2009 to 2011. And even more increases from 2014 to 2016.**
12. In Table 13: Corpus Christi and Victoria Ozone Network Evaluation, **The Data Trend and Source Impact Values are misleading.** Just because there are minimal source contributions, does not mean that the contributions are insignificant. The way this evaluation has been recorded is misleading because it diminishes the adverse impact such emissions are having.

Comments and questions by Adrenus Craton
Monday, June 29, 2020

From: [Adrenus Craton](#)
To: [MONOPS](#)
Cc: [Kelly Ruble](#); [Cindy Smith](#); [Michael Delacruz](#); [Susan Clewis](#); schaub.lisa@epa.gov; matt.ripley@dot.gov; Walter.Rucker@dot.gov
Subject: Re: 2020 Texas FYA_RevisedComments.pdf
Date: Tuesday, June 30, 2020 11:39:51 PM

Dear All,

In addition to the already submitted comments and questions on the 2020 Texas Five-Year Ambient Monitoring Network Assessment, I would like include these and propose this:

1. In the same way new legislation was introduced by federal watchdogs and respected health/medical industry professionals over the tobacco industry (in which at first all those who stood to benefit from cigarette sales vehemently denied its direct link to lung cancer, among others), the oil and gas industry's environmental justice sector NEEDS to employ similar measures. Additional taxes and fees, mandatory increases in distance of wells to receptors in residential areas, mandatory ability to renegotiate O&G leases once serious violations have occurred, etc., etc.

2. This assessment should not be left open ended and grossly one sided. Everyone should be able to see alongside the increments of "5 years of monitoring data and results" shown in your assessments:

- a) the medical data
- b) the ongoing & past lawsuits
- c) the death rates
- d) and the cancer statistics

...from those same 5 years.

3. Warning labels and health effects should be included more prominently next to "allowable" emissions, so that we as citizens are seen as more than "research data" for your assessments.

We are families who have dinner together, go swimming in our pools, cry at sappy romantic comedies on Netflix, who get together for glasses of wine with our best friends and complain about gas companies who use their political power to bully less powerful minorities and populations who are unable to successfully protect themselves from their facilities' emissions (decade after decade, loss after loss).

If these companies are not properly and thoroughly held accountable, then those who regulate them MUST be.

SOMEONE has to care enough to protect the people.

Sincerely,
Adrénus

*Pardon any typos, as this is being written under increasingly stressful, sickening and unreasonably hazardous and toxic conditions due to non-compliant gas plant facilities run by ETC Texas Pipeline, LTD (CN601587652) and Sulphur River Exploration, INC

(CN601307911).

Sent from mobile

On Jun 30, 2020, at 2:27 AM, Adrenus Craton <adrenuscraton@yahoo.com> wrote:

Dear All,

Please see attached comments and questions in response to the 2020 Texas Five-Year Ambient Monitoring Network Assessment.

The reason why I am stepping forward to comment and question any aspect of this assessment is because we are currently suffering from being systematically poisoned by a nearby gas plant and its facilities situated on our family estate.

There has been so much unnecessary loss of life and loss of quality of life over the past 50 years because of this facility that has changed company hands a multitude of times, leaving us as fallout every time.

Just because we have not taken the advices of the EPA and gone ahead to make our local news stations, national and international news outlets aware of what is happening to our family, does not mean we don't care about our families out here.

If our only hope of survival for myself, my generation and my young nieces' and nephew's generation, is to rewrite the legislature currently standing in the way of our human rights to absolute safety in our own homes from the some of oil and gas industry's careless, negligent, hazardous, eyesore of operations—then here is the place we start.

God help us,
Adrénus

<2020 Texas FYA_RevisedComments.pdf>

*Pardon any typos, as this is being written under increasingly stressful, sickening and unreasonably hazardous and toxic conditions due to non-compliant gas plant facilities run by ETC Texas Pipeline, LTD (CN601587652) and Sulphur River Exploration, INC (CN601307911).

Sent from mobile

From: [David Baake](#)
To: [MONOPS](#)
Subject: Environmental Organizations' Comments on Five-Year Network Assessment
Date: Wednesday, July 1, 2020 5:05:03 PM
Attachments: [Comments of Environmental Organizations on TCEQ Five-Year Assessment.pdf](#)
[EDF SC EIP EJ TEJAS PC ET AAH Comments on TCEQ 2020 monitoring network plan FINAL \(1\).pdf](#)

Dear TCEQ:

Please find attached the Comments and Request for Hearing on the *Texas 2020 Five-Year Ambient Monitoring Network Assessment* by Sierra Club, Environmental Defense Fund, Environmental Integrity Project, Public Citizen, Texas Environmental Justice Advocacy Services, and Air Alliance Houston.

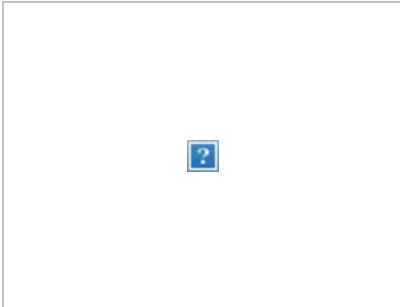
Please also find attached our comments on the 2020 Monitoring Plan, which we incorporate by reference.

Please confirm receipt of this email and let me know if you have any questions.

Thanks,

David Baake

--



David R. Baake
New Mexico Bar #150522
California Bar #325087
Las Cruces, New Mexico
www.baakelaw.com
575.343.2782

Please consider donating to [Doctors Without Borders' COVID-19 Relief Efforts](#).

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July 1, 2020

Texas Commission on Environmental Quality
P.O. Box 13087
Attention: Holly Landuyt, MC-165
Austin, Texas 78711-3087
Via Email To: monops@tceq.texas.gov

Re: Comments and Request for Hearing on the *Texas 2020 Five-Year Ambient Monitoring Network Assessment* by Sierra Club, Environmental Defense Fund, Environmental Integrity Project, Public Citizen, Texas Environmental Justice Advocacy Services, and Air Alliance Houston

On behalf of our members and supporters who live, work, and recreate in Texas, Sierra Club, Environmental Defense Fund, Environmental Integrity Project, Public Citizen, Texas Environmental Justice Advocacy Services, and Air Alliance Houston (“Commenters”) respectfully submit these comments in response to the *Texas 2020 Five-Year Ambient Monitoring Network Assessment* (“Five-Year Assessment” or “Assessment”). We respectfully request that the Texas Commission on Environmental Quality (“TCEQ”) carefully consider these comments and modify the Assessment to correct the deficiencies identified herein. We further request that TCEQ conduct public hearings on the Assessment in Houston and El Paso.

We recently offered detailed comments on TCEQ’s proposed Annual Monitoring Network Plan for 2020 (“2020 Plan”).¹ The comments show that TCEQ’s monitoring network fails, in numerous ways, to comply with applicable EPA regulations. These comments are fully applicable here. In order to achieve the monitoring objectives for the 2020–2025 period, TCEQ must first cure the deficiencies that already exist. We incorporate our comments on the proposed 2020 Plan herein by reference, and ask that TCEQ carefully consider these comments in finalizing both the 2020 Plan and the Five-Year Assessment.

In addition, we offer certain comments that are specific to the Five-Year Assessment. Among other things, these comments show that:

- The Five-Year Assessment does not contain certain elements required under 40 C.F.R. § 58.10(d). For example, the Assessment does not provide an adequate assessment of whether new monitoring technologies may be appropriate for incorporation into the monitoring network. Nor does the Assessment adequately assess whether the network is sufficient to support air quality characterization for areas with relatively high populations of susceptible individuals. TCEQ must cure these deficiencies.
- The Five-Year Assessment confirms that TCEQ’s network is not meeting the monitoring objectives set forth in 40 C.F.R. Pt. 58, App. D for the Midland-Odessa Combined Statistical Area. This region is undergoing explosive

¹ Our comments on the proposed 2020 Plan are attached as Exhibit A to these comments.

population growth and emitting tremendous amounts of pollution. In many cases, emissions from this region exceed those from Texas's largest metropolitan areas. Yet the region has only one air pollution monitor—a PM_{2.5} monitor in Odessa—and TCEQ has not proposed to install any additional monitors during five-year period covered by the Assessment. The lack of ambient air quality monitoring in this region makes it impossible to determine whether the area is attaining the National Ambient Air Quality Standards (“NAAQS”), deprives hundreds of thousands of Texans of air pollution data relevant to their health, and hinders air pollution research. To achieve these monitoring objectives, TCEQ must, at minimum, install one ozone monitor and one SO₂ monitor in the Midland-Odessa area.

- TCEQ correctly recognizes that it needs to install additional near-road NO₂ monitors in San Antonio and Austin. We encourage TCEQ to seek public input about where to site these monitors, and to pay particular attention to the needs and concerns of environmental justice communities. Given that the El Paso-Juárez-Las Cruces region has over 2.5 million residents and El Paso County itself will approach 1 million residents by the end of assessment period, installing a near-road NO₂ monitor in El Paso is necessary to achieve the monitoring objectives set forth in Appendix D.
- As discussed in our comments on the 2020 Plan, TCEQ does not have enough air quality monitors planned for the Houston area, and in particular needs more monitors for particulate matter (PM). We strongly recommend installing a new PM_{2.5} FEM continuous monitor at the City of Houston's existing Westhollow monitoring station, along with a new PM_{2.5} monitor at TCEQ's Bayland Park monitoring station. We also strongly recommend that all existing PM_{2.5} monitors be retained.
- As discussed in our comments on the 2020 Plan, TCEQ's monitoring network is inadequate to determine whether some of the largest pollution sources are causing unhealthy levels of SO₂. For areas that have “the potential to have concentrations that may violate or contribute to the violation of the NAAQS,” TCEQ and EPA must evaluate the addition of additional SO₂ monitoring stations above the minimum number of monitors required under the regulations. Yet, the Assessment arbitrarily fails to evaluate additional SO₂ monitors, around some of the largest sources of harmful SO₂ in the state, including many of the 25 Texas coal-burning power plants subject to EPA's Data Requirements Rule.

I. BACKGROUND

40 C.F.R. § 58.10(d) provides that a five-year assessment must assess whether “the network meets the monitoring objectives defined in appendix D to this part.” The monitoring objectives include “[p]rovid[ing] air pollution data to the general public in a timely manner,” “[s]upporting compliance with ambient air quality standards and emissions strategy development,” and “[s]upport[ing] . . . air pollution research studies.” 40 C.F.R. Pt. 58, App. D.

In addition, the five-year assessment must consider whether new sites are needed, whether existing sites are no longer needed and can be terminated, whether new technologies are appropriate for incorporation into the ambient air monitoring network, and whether the network supports air quality characterization for areas with relatively high populations of susceptible individuals (e.g., children with asthma). 40 C.F.R. § 58.10(d).

The monitoring objectives set forth in Appendix D provide the touchstone for determining whether a monitoring network is adequate. EPA’s regulations make clear that a state must install as many monitors as are necessary to achieve these objectives, even in the absence of a specific requirement.² However, the regulations also identify minimum monitoring requirements that apply based on an area’s population, emissions, and/or air quality.

Table D-2 defines the minimum monitoring requirements for ozone:

TABLE D-2 OF APPENDIX D TO PART 58—SLAMS MINIMUM O₃ MONITORING REQUIREMENTS

| MSA population ^{1, 2} | Most recent 3-year design value concentrations | |
|--------------------------------|--|--|
| | ≥85% of any O ₃ NAAQS ³ | <85% of any O ₃ NAAQS ^{3, 4} |
| >10 million..... | 4 | 2 |
| 4–10 million..... | 3 | 1 |
| 350,000–<4 million... | 2 | 1 |
| 50,000– | 1 | 0 |
| <350,000 ⁵ | | |

Table D-4 defines the minimum monitoring requirements for PM₁₀:

TABLE D-4 OF APPENDIX D TO PART 58—PM₁₀ MINIMUM MONITORING REQUIREMENTS (APPROXIMATE NUMBER OF STATIONS PER MSA) ¹

| Population category | High concentration ² | Medium concentration ³ | Low concentration ^{4, 5} |
|------------------------|---------------------------------|-----------------------------------|-----------------------------------|
| >1,000,000..... | 6-10 | 4-8 | 2-4 |
| 500,000–1,000,000..... | 4-8 | 2-4 | 1-2 |
| 250,000–500,000..... | 3-4 | 1-2 | 0-1 |
| 100,000–250,000..... | 1-2 | 0-1 | 0 |

Table D-5 defines the minimum monitoring requirements for PM_{2.5}:

² See, e.g., 40 C.F.R. Pt. 58, App. D, § 4.1(a) (“The total number of O₃ sites needed to support the basic monitoring objectives of public data reporting, air quality mapping, compliance, and understanding O₃-related atmospheric processes *will include more sites than these minimum numbers . . .*”) (emphasis added).

TABLE D-5 OF APPENDIX D TO PART 58—PM_{2.5} MINIMUM MONITORING REQUIREMENTS

| MSA population ^{1, 2} | Most recent 3-year design value \geq 85% of any PM _{2.5} NAAQS ³ | Most recent 3-year design value < 85% of any PM _{2.5} NAAQS ^{3, 4} |
|--------------------------------|--|--|
| >1,000,000..... | 3 | 2 |
| 500,000–1,000,000.... | 2 | 1 |
| 50,000– | 1 | 0 |
| <500,000 ⁵ | | |

In addition, 40 C.F.R. Pt. 58, App. D, § 4.3.2 provides that one Near-Road NO₂ Monitor is required “in each [Core-Based Statistical Area or CBSA] with a population of 1,000,000 or more persons,” while a second Near-Road NO₂ Monitor is required “for any CBSA with a population of 2,500,000 persons or more, or in any CBSA with a population of 1,000,000 or more persons that has one or more roadway segments with 250,000 or greater AADT counts.”

The minimum monitoring requirements for SO₂ depend on both the area’s population and its emissions. Specifically, an agency must calculate the population weighted emissions index (“PWEI”) for each CSBA. The PWEI is calculated:

by multiplying the population of each CBSA, using the most current census data or estimates, and the total amount of SO₂ in tons per year emitted within the CBSA area, using an aggregate of the most recent county level emissions data available in the National Emissions Inventory for each county in each CBSA. The resulting product shall be divided by one million, providing a PWEI value, the units of which are million persons-tons per year. For any CBSA with a calculated PWEI value equal to or greater than 1,000,000, a minimum of three SO₂ monitors are required within that CBSA. For any CBSA with a calculated PWEI value equal to or greater than 100,000, but less than 1,000,000, a minimum of two SO₂ monitors are required within that CBSA. For any CBSA with a calculated PWEI value equal to or greater than 5,000, but less than 100,000, a minimum of one SO₂ monitor is required within that CBSA.

40 C.F.R. Pt. 58, App. D, § 4.4.2(a).

While the regulations use the population of the CBSA or metropolitan statistical area (“MSA”)³ as a starting point for determining the minimum monitoring requirements for ozone, PM₂, PM₁₀, and SO₂, it is clear that states must consider broader areas, including combined statistical areas (“CSAs”), where doing so is necessary to achieve the monitoring objectives. The regulatory text makes this explicit with respect to ozone monitoring. *See* 40 C.F.R. Pt. 58, App. D, § 4.1(b) (“Within an O₃ network, at least one O₃ site for each MSA, *or* CSA if multiple MSAs are involved, must be designated to record the maximum concentration for that particular metropolitan area.”) (emphasis added).

³ An MSA is a CBSA with a population of 50,000 or more.

When it adopted the minimum monitoring requirements in Appendix D, EPA likewise emphasized that states should use the CSA population where appropriate:

By definition, both MSA and CSA have a high degree of integration; however, many such areas cross State or other political boundaries. MSA and CSA may also cross more than one air shed. The EPA recognizes that State or local agencies must consider MSA/CSA boundaries and their own political boundaries and geographical characteristics in designing their air monitoring networks. The EPA recognizes that there may be situations where the EPA Regional Administrator and the affected State or local agencies may need to augment or to divide the overall MSA/CSA monitoring responsibilities and requirements among these various agencies to achieve an effective network design.

71 Fed. Reg. 61,236, 61,317 (Oct. 17, 2006).

To reiterate, the touchstone in all cases is whether the monitoring network is achieving the monitoring objectives—i.e., whether the network provides air pollution data the general public in a timely manner, supports compliance with ambient air quality standards and emissions strategy development, and supports air pollution research studies. The minimum monitoring requirements set forth in Appendix D provide a floor that states are expected to exceed. While those monitoring requirements generally refer to the population of the MSA, states must consider using the broader CSA, or other appropriate geographic area, where a narrower focus is inconsistent with the creation of an effective monitoring network.

II. ARGUMENT

A. The Five-Year Assessment Does Not Contain All of the Required Elements

40 C.F.R. § 58.10(d) lists a number of elements that a state must include in its five-year assessment. Among other things, such an assessment must consider “whether new technologies are appropriate for incorporation into the ambient air monitoring network” and whether the network is sufficient “to support air quality characterization for areas with relatively high populations of susceptible individuals (e.g., children with asthma)”

TCEQ has not given sufficient consideration to either of these elements. Regarding the requirement to consider new monitoring technologies, the Assessment provides a single paragraph:

The TCEQ continually evaluates advances in ambient air monitoring technology. However, because regulatory monitors used for determination of compliance with the NAAQS are required to meet federal reference method (FRM), federal equivalent method (FEM), or approved regional method requirements, a full review of available technology was not detailed in this assessment. TCEQ’s regulatory monitors comply with existing monitoring method requirements and provide consistent, high quality data return. The TCEQ continues to evaluate newer

technologies as they become available and proposes method changes through the AMNP.

Assessment at 16.

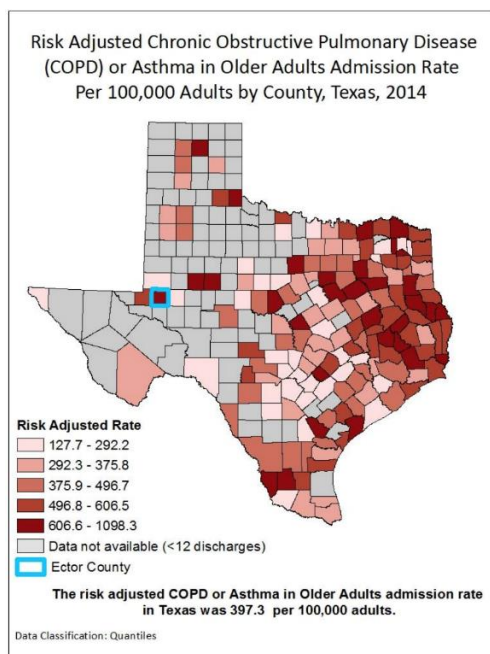
In effect, TCEQ's position is that it should not have to conduct a technology review because EPA regulations specify the types of technologies that can be used for regulatory purposes. But 40 C.F.R. § 58.10(d) specifically requires states to perform a technology review as part of a five-year assessment, notwithstanding the fact that other regulations limit the range of technologies that can be used for regulatory purposes. TCEQ must comply with 40 C.F.R. § 58.10(d) by performing a technology review. Among other things, such a review should consider the possibility of using mobile air quality monitoring technologies to identify potential air quality problems in areas that are not currently served by air quality monitors—for example, rural areas experiencing high levels of oil and gas activity.⁴

Regarding the requirement to consider whether the network is sufficient “to support air quality characterization for areas with relatively high populations of susceptible individuals (e.g., children with asthma),” TCEQ suggests this requirement is “challenging to implement,” but that it views its network as sufficient to satisfy this requirement because TCEQ's network “meets, and in many cases exceeds, the federal monitoring requirements and objectives specified in 40 CFR § 58 and its appendices.” Assessment at 22. TCEQ goes on to note that “[a]pproximately 75% of the TCEQ federally supported monitors are located in CBSAs currently or previously designated nonattainment[,]” and concludes that “[t]he public, including susceptible individuals, are supported by the ambient air monitoring data from air pollutant monitors located in CBSAs with current or previous air quality concerns.” *Id.*

TCEQ has not satisfied its obligation to consider the ability of the monitoring network to support air quality characterization for areas with relatively high populations of susceptible individuals. The fact that a monitoring network satisfies the minimum monitoring requirements set forth in 40 C.F.R. Pt. 58 (and, as shown below and in our comments on the 2020 Plan, TCEQ's network does not fully satisfy these regulations) does not mean it adequately characterizes areas with relatively high populations of susceptible individuals—if compliance with minimum monitoring requirements were sufficient, EPA would not have promulgated a separate requirement for TCEQ to consider air quality characterization for areas with high populations of susceptible individuals. Nor is it satisfactory to say that a large percentage of TCEQ's monitors are located in areas that currently or previously were designated non-attainment. There may be parts of the state that have a high number of susceptible individuals and that are experiencing air quality problems, but which lack monitors.

⁴ For example, the Colorado Department of Public Health and Environment is using a mobile air pollution lab to detect potential air pollution problems in areas experiencing high levels of oil and gas activity. <https://www.denverpost.com/2020/02/02/colorado-mobile-air-monitoring-lab/>

At minimum, TCEQ should consult data from the Texas Department of State Health Services (“DSHS”) to determine which parts of the state have higher than average prevalence of air pollution-related health problems, like asthma and chronic obstructive pulmonary disease (“COPD”). For example, DSHS has analyzed risk-adjusted rates of COPD and asthma in older adults for counties across Texas. See [Potentially Preventable Hospitalizations Program Surveillance Report—Ector County](#) (June 2016). The results of this study are set forth in the following map:



As this map and the associated paper show, Ector County experienced a risk-adjusted rates of COPD and asthma in older adults of 780.5 – nearly double the state-wide average of 397.3.

DSHS has also performed studies of preventable hospitalizations due to pediatric asthma. Other organizations like the United Health Foundation have performed similar analyses.⁵ TCEQ must review analyses like this to determine if there are areas of the state that have a relatively high populations of susceptible individuals, but insufficient air monitoring

B. The Five-Year Assessment Shows that TCEQ is Not Meeting Monitoring Objectives for Midland-Odessa

The Five-Year Assessment shows that TCEQ’s network is not meeting the monitoring objectives set forth in 40 C.F.R. Pt. 58, App. D for the Midland-Odessa area. This region is the fastest growing area in Texas and one of the fastest growing areas in the entire nation. The

⁵ For example, the Colorado Department of Public Health and Environment is using a mobile air pollution lab to detect potential air pollution problems in areas experiencing high levels of oil and gas activity. <https://www.denverpost.com/2020/02/02/colorado-mobile-air-monitoring-lab/>

Assessment indicates that the Midland MSA (Midland County) will grow by a staggering **40%** from 2015–2025, while the Odessa MSA (Ector County) will grow 37% during the same period. *See* Assessment at 20. As of 2020, the cities have a combined population of 378,249; by 2025, this will reach 447,050. *Id.*

Sources in the region—primarily from oil and gas production and rapidly increasing population—are emitting significant amounts of pollution. For many pollutants, emissions of TCEQ Region 7 (which includes Midland-Odessa) rival or exceed emissions from Texas’s largest metropolitan areas:

| Region (All Sources) | VOC | NOx | SO₂ |
|-----------------------------|------------|------------|-----------------------|
| R7-Midland | 362,139 | 85,550 | 27,374 |
| R4-DFW | 157,840 | 123,979 | 8,813 |
| R12-Houston | 175,802 | 132,696 | 51,555 |
| R13-San Antonio | 96,083 | 67,327 | 25,407 |

Data from Assessment, Tables 10, 31, 58, & 74. As these data show, the Midland-Odessa area is responsible for more VOC emissions than Dallas-Fort Worth and Houston *combined*. Midland-Odessa also emits more SO₂ than DFW and San Antonio, and more NOx than San Antonio. In fact, Midland-Odessa’s emissions are likely much greater than reflected here; researchers have found that emissions from oil-and-gas operations in the Permian Basin are dramatically underreported.⁶

Despite its skyrocketing population and emissions, there is only one air pollution monitor in the region—a PM_{2.5} monitor in Odessa—and TCEQ has not proposed to install any additional monitors during five-year period covered by the Assessment. The lack of ambient air quality monitoring in this region makes it impossible to determine whether the area is attaining ambient air quality standards, deprives hundreds of thousands of Texans of air pollution data relevant to their health, and hinders air pollution research. To achieve these monitoring objectives, TCEQ must, at minimum, install one ozone monitor and one SO₂ monitor in the Midland-Odessa area.

In addition, as shown in our comments on the 2020 Plan (pages 18–25), installation of these monitors is mandated by the minimum monitoring regulations. At least one ozone monitor is required because the population of the Midland-Odessa area exceeds 350,000. *See* 40 C.F.R. Pt. 58, App. D, Table D-2 and § 4.1(b) (recognizing that state must look to CSA, rather than MSA, in appropriate circumstances); *cf.* 71 Fed. Reg. at 61,317 (“The EPA recognizes that State or local

⁶ <https://www.americashealthrankings.org/explore/annual/measure/preventable/state/TX>

agencies must consider MSA/CSA boundaries . . . in designing their air monitoring networks”). At least one SO₂ monitor is required because the PWEI score for the area exceeds 5,000.⁷

C. TCEQ Must Prioritize the Needs of Environmental Justice Communities in Making Decisions About Near-Road NO₂ Monitors in San Antonio, Austin, and El Paso

We applaud TCEQ for correctly recognizing that it needs to install an additional near-road NO₂ monitor in San Antonio by 2021. Assessment at 91. We urge TCEQ to seek public input about where this monitor should be located. In particular, TCEQ should conduct meaningful outreach to environmental justice communities in San Antonio, and pay particular attention to their needs and concerns.

We likewise applaud TCEQ for recognizing that an additional near-road NO₂ monitor will likely be required in Austin during the assessment period. Assessment at 81. Again, we urge TCEQ to seek public input, and to meaningfully engage environmental justice communities, as it moves forward with siting this monitor.

Finally, we encourage TCEQ to install a near-road NO₂ monitor in El Paso. Unlike Austin and San Antonio, El Paso does not currently have any such monitor. Yet the population of the Paso del Norte region (which includes El Paso as well as Las Cruces, New Mexico and Juárez, Chihuahua), at approximately 2.5 million, far exceeds the population that triggers the requirement to install a near-road NO₂ monitor.⁸ Given the degree to which residents commute across the region and the interconnected nature of the airshed, considering the population of this broader region is necessary to achieve the monitoring objectives set forth in Appendix D. Moreover, El Paso County itself will approach the population threshold by the end of the assessment period. Again, TCEQ should consult with members of the public, and especially, members of environmental justice communities, in siting this monitor.

D. Public health warrants enhanced air quality monitoring in Houston and surrounding communities

As TCEQ has acknowledged in their 2020 Annual Monitoring Plan there is compelling evidence for installation of at least one new FRM PM_{2.5} monitor in the western or central part of Houston. Given the elevated levels of PM_{2.5} and high population density, we believe TCEQ should also install a new PM_{2.5} monitor at TCEQ’s Bayland Park monitoring station. In addition, funding is also needed to conduct a speciation/source apportionment study to understand what is causing these particulate matter concentrations, and to develop an action plan to reduce the sources of emissions. It is also critical that existing FRM PM_{2.5} monitors be maintained in their current location.

⁷ The PWEI score is calculated by multiplying the population of the area (378,249 for Midland-Odessa) by the total SO₂ emissions for the area (27,374 tons for TCEQ Region 7), and dividing by 1,000,000. This results in a PWEI score of 10,354.

⁸ See 40 C.F.R. Pt. 58, App. D, § 4.3.2 (one near-road NO₂ monitor is required “in each CBSA with a population of 1,000,000 or more persons”).

As described in greater detail in the attached comments elevated levels of PM_{2.5} have major health and economic consequences for residents of Houston. A [new analysis](#) from the Harvard School of Public Health and EDF based on the ensemble data has found that the elevated levels of PM_{2.5} in Houston were responsible for:

- Over 5,200 premature deaths, and
- Over \$49 billion in economic damages.

As described above, TCEQ has not given adequate consideration to emerging technologies. TCEQ should also work with the City of Houston, Harris County, and the U.S. EPA to support the installation of lower cost community monitors throughout Houston. Additional community monitors can play a key role in providing communities an early warning, and can help regulators take action against polluters. TCEQ should initiate a speciation/source apportionment study to determine the sources of PM_{2.5} in western Houston and develop a plan of action to reduce PM_{2.5} exposure in western Houston.

There is also need for a PM monitor in the Fifth Ward. An analysis by the Environmental Defense Fund found levels of air pollution on roads adjacent to these facilities to be significantly elevated, comparable to being within 200 m of a highway and likely the result of diesel emissions. Some of these facilities are in close proximity to schools and other sensitive populations. There is a clear need for PM monitoring in this part of Houston.

Likewise, there is mounting evidence of public health threats in Fifth Ward from lead and other toxic contaminants. TCEQ must take steps to gather data and monitor for pollutants like lead in the air. Fifth Ward residents need air quality data so they can take action to protect their health from elevated levels of lead and VOCs and to alert regulatory officials when they need to take specific action against potential emitters. Currently, there are no lead or VOC air quality monitors in Fifth Ward. It is not enough that TCEQ believes meeting minimum federal requirements is enough to meet VOC monitoring requirements, TCEQ Annual Monitoring Network Plan 24, one of the purposes of the air monitoring network is provide data for policy decisions, 40 C.F.R. § 58.2(a)(5), Commenters request that TCEQ place a lead and VOC monitor in Fifth Ward.

Additional monitors are also needed in the Houston Ship Channel and the Portland-Gregory Area. As described in greater detail in the attachment, there is a compelling need for additional VOC monitors along the Houston Ship Channel. Recent data demonstrate that there are likely systematic underreporting errors with existing air emissions reporting at facilities along the Channel. For example, testing for VOCs and benzene along the Channel, researchers found far higher emissions levels than the estimates produced and reported by the operators themselves.⁹ In fact, the study found that VOC emissions were 41% higher than emissions inventories reported, and benzene emissions were 94% higher.¹⁰ This means that operators along the Channel are exceeding their permitted limits, and communities are paying the price with their health.

⁹ Daniel Hoyt & Loren H. Raun, Measured and Estimated Benzene and Volatile Organic Carbon (VOC) Emissions at a Major U.S. Refinery/Chemical Plant: Comparison and Prioritization, 65 J AIR & WASTE MGMT. ASS'N 1020, 1021 (2015), available <https://www.tandfonline.com/doi/pdf/10.1080/10962247.2015.1058304?needAccess=true>.

¹⁰ *Id.* at 1029.

Commenters request that TCEQ place additional VOC monitors along the Houston Ship Channel because of the staggering number of air polluting facilities there. Currently, there are no VOC monitors along the Channel on the southbound side of IH 610. Here, Commenters recommend that TCEQ place a VOC monitor at or near J.R. Harris Elementary School—a public school where nearly all of the children are racial minorities and over two-thirds of the students are English Language Learners. Commenters would like to see additional monitoring in Manchester, Pasadena, Deer Park, and Baytown within the 5-year time horizon for this plan. Likewise, there is compelling evidence to suggest additional VOC monitors should be located in the Portland-Gregory Area in addition to the new PM₁₀ monitors in that area.¹¹

E. TCEQ’s monitoring network is inadequate to determine whether some of the largest pollution sources are causing unhealthy levels of SO₂.

EPA’s monitoring assessment regulations require TCEQ to “work together” with EPA to design and maintain the most appropriate sulfur dioxide (“SO₂”) network to provide sufficient data to meet monitoring objectives. 40 C.F.R. Pt. 58, App. D at § 4.4.3. For areas that have “the potential to have concentrations that may violate or contribute to the violation of the NAAQS,” the state and EPA should evaluate the addition of additional SO₂ monitoring stations above the minimum number of monitors required under the regulations. in 4.4.2 of this part, where the minimum monitoring requirements are not sufficient to meet monitoring objectives. *Id.*

In its monitoring assessment, TCEQ arbitrarily fails to evaluate additional SO₂ monitors around some of the largest sources of harmful SO₂ in the state, including many of the 25 Texas coal-burning power plants subject to EPA’s Data Requirements Rule, which is designed to ensure compliance with the NAAQS at the largest sources of pollution in the state.¹² Specifically, and as explained further in the attached comments, TCEQ must evaluate additional monitoring to ensure compliance with the SO₂_NAAQS at W.A. Parish, San Miguel, and Coletto Creek, or adopt enforceable emissions limitations to ensure attainment. In its Sulfur Dioxide Ongoing Data Requirements Annual Report, TCEQ notes that total SO₂ pollution from the San Miguel Electric Plant, W.A. Parish Electric Generating Station, and Coletto Creek Power Station have increased significantly since 2019.¹³ In fact, in each of the past four years, each plant has increased its overall SO₂ emissions. Despite these increases, the agency arbitrarily fails to consider any evaluation of whether additional monitoring around these sources is needed to ensure compliance with the NAAQS.

Perhaps more egregious than its failure to consider additional SO₂ monitors, TCEQ has failed to take steps to protect the public from *monitored* violations of the NAAQS, or ensure that monitors in those violating areas meet the objectives of the Clean Air Act and its regulations. Indeed, the agency’s own *monitoring* data indicates that air quality at multiple monitors located near very large coal-burning power plants—including Martin Lake in Rusk County and Harrington

¹¹ See p 13-14 of our 2020 Monitoring Plan Comments Attached.

¹² Data Requirements Rule for the 2010 1-Hour Sulfur Dioxide (SO₂) Primary National Ambient Air Quality Standard (NAAQS), 80 Fed. Reg. 51,052 (Aug. 21, 2015) (codified at 40 C.F.R. § 51, Subpart BB).

¹³ 2020 Air Monitoring Network Plan, App’x F, Sulfur Dioxide Ongoing Data Requirements Annual Report.

Station in Potter County—is regularly exceeding the health-based SO₂ NAAQS. The 2010 SO₂ NAAQS requires that the three-year average of the 99th percentile 1-hour daily maximum SO₂ concentration—*i.e.*, the average of the fourth highest maximum one-hour reading for three years—must not exceed 75 ppb. 40 C.F.R. § 50.17(b). Applying this standard, TCEQ’s Martin Lake monitor will have a minimum 2017-2019 design value of 82.03 ppb, well above the NAAQS.¹⁴ Air quality in the area surrounding Xcel Energy’s coal-burning Harrington Station similarly fails to meet EPA’s health-based SO₂ standard. TCEQ’s monitor indicates that in 2018, hourly SO₂ concentrations near the Harrington power plant were as high as 209.1 ppb—nearly *triple* the maximum concentration EPA has determined is safe to breathe.¹⁵ The 99th percentile in 2018 was 132.8 ppb. The year before, in 2017, the 99th percentile was somewhat lower—114 ppb. And in 2019, the fourth highest hourly reading was 95.4, meaning that the 2017-2019 design value was 114.2—nearly double the NAAQS.

Despite TCEQ’s own monitored violations of the NAAQS, there is no indication in the five-year assessment that TCEQ has taken any steps to “work together” with EPA, as required under the regulations, to ensure that its SO₂ monitoring network meets the objectives of the Clean Air Act or the regulations, 40 C.F.R. Pt. 58, App. D at § 4.4.3—specifically, identifying areas with unhealthy air quality and taking steps to bring those areas into attainment with the NAAQS. *See generally* 42 U.S.C. §§ 7407, 7410. If the Clean Air Act or EPA’s air quality monitoring regulations are to have any meaning or effect, TCEQ must take appropriate steps to ensure that air quality near those plants comes into compliance with the Clean Air Act’s health-based standards. *See* 40 C.F.R. § 51.1205(d); *see also* 30 Tex. Admin. Code § 101.21 (“The National Primary and Secondary Ambient Air Quality Standards as promulgated pursuant to section 109 of the Federal Clean Air Act, as amended, will be enforced throughout all parts of Texas.”). TCEQ’s failure to work with EPA or take any action to ensure that the monitoring network actually meets the objectives of the Clean Air Act—*i.e.*, compliance with the NAAQS—is arbitrary, capricious, and unlawful.

¹⁴ *See* Ex. (CAMS 1082 monitoring data for Tatum CR 2181d Martin Creek Lake, EPA Site Number: 484011082, *available at* https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=report.view_site&CAMS=1082). To calculate the design value, Sierra Club averaged the fourth-highest 1-hour daily maximum values from available data for 2017, 2018, and 2019. The fourth-highest value for 2018 was 109.1 ppb. The fourth-highest value for 2019 was 114.8 ppb. And although the monitor operated for just 32 days of 2017, the fourth-highest reading for that period was 22.2 ppb. The average of 109.1 ppb, 114.8 ppb, and 22.2 ppb is 82.03 ppb,¹⁴ making clear that the area is failing the NAAQS. 109.1 ppb (2018 fourth highest hourly reading) + 114.8 ppb (2019 fourth highest hourly reading) + 22.2 ppb (2017 fourth highest hourly reading) = 246.1 ppb. 246.1 ppb ÷ 3 = 82.03 ppb. Significantly, the 82.03 ppb design value for 2017-2019 is almost certainly conservative because the Martin Lake monitor was not operable until November 2017, and thus the 82.03 ppb design value essentially assumes *zero* emissions for the first ten months of 2017. It is likely the design value for 2017 would have been comparable to the other two years (*i.e.*, greater than 100 ppb) if the monitor had operated for the entire year.

¹⁵ *See* CAMS 1077 Monthly Monitoring Data, Amarillo Xcel El Rancho, EPA Site Number: 483751077, *available at* https://www.tceq.texas.gov/cgi-bin/compliance/monops/monthly_summary.pl?cams=1077.

III. CONCLUSION

We respectfully request that TCEQ conduct a hearing on the proposed Assessment. In addition, we respectfully request that TCEQ respond to these Comments, and our comments on the 2020 Plan, by making appropriate changes to the Assessment.

Sincerely,

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May 14, 2020

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

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Submitted via email

Re: Public comment and public hearing request on proposed 2020 Annual Monitoring Network Plan by Sierra Club, Environmental Defense Fund, Environmental Integrity Project, Public Citizen, Environment Texas, and Texas Environmental Justice Advocacy Services, Air Alliance Houston.

On behalf of our members and supporters who live, work, and recreate in Texas, Sierra Club, Environmental Defense Fund, Environmental Integrity Project, Public Citizen, Environment Texas, Texas Environmental Justice Advocacy Services (“Commenters”) respectfully submit these comments regarding the Texas Commission on Environmental Quality (“TCEQ”) proposed 2020 Annual Monitoring Network Plan.

Because the proposed 2020 Annual Monitoring Network Plan is a revision to Texas’s State Implementation Plan, it should be subject to notice and comment rulemaking. Commenters request that Texas Commission on Environmental Quality (“TCEQ”) remand the proposal, publish the plan in both English and Spanish, and allow the public to provide additional comment on the agency’s network plan through the notice and comment rulemaking process. Further, Commenters request that TCEQ hold public hearings in Houston and El Paso.

While Commenters appreciate the fact that TCEQ has proposed some new monitoring sites, there is a pressing need for many additional monitoring stations across Texas. Due to concentrated industrial operations and persistent unauthorized emissions, Houston communities urgently need enhanced volatile organic compound air quality monitoring. Other Houston communities face historic pollution that is little understood, in part, because of a lack of air quality data. Similarly, west Texas communities know they are subject to ozone and sulfur dioxide pollution but lack air quality data to protect their health and to require stronger protections from polluting industries.

Communities along the Gulf Coast, including in the Corpus Christi area and the Rio Grande Valley, are facing new air quality challenges as oversupply of oil and gas has fueled a refining and petrochemical industry expansion. These communities deserve to know what is in the air, too.

Impressive growth in San Antonio and El Paso has exacerbated ozone, carbon

monoxide, and nitrogen dioxide pollution – these Texas communities need more air quality data, too. Lastly, staggering sulfur dioxide emissions across Texas pose a serious public health threat that warrants not just enhanced monitoring, but a reconsideration of Texas’ sulfur dioxide modeling. We are urging TCEQ to address the lack of monitoring in communities where oil and gas drilling – the “upstream” oil and gas industry – continue to flare and vent air pollution at unprecedented and dangerous levels.

Commenters urge TCEQ not simply to look at federal standards, which provide mere minimum criteria, but also pressing public health threats to assess the air quality monitoring needs of all Texans.

Respectfully submitted,

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**COMMENTS OF SIERRA CLUB, ENVIRONMENTAL DEFENSE FUND,
ENVIRONMENTAL INTEGRITY PROJECT, PUBLIC CITIZEN, TEXAS
ENVIRONMENTAL JUSTICE ADVOCACY SERVICES, AIR ALLIANCE HOUSTON
ON 2020 ANNUAL MONITORING NETWORK PLAN**

I. Clean Air Act background.

A. Texas must maintain an air quality monitoring network.

The federal Clean Air Act (“CAA” or “Act”) requires Texas to establish and maintain an air quality monitoring network. This monitoring plan must be included in the applicable State Implementation Plan (“SIP”). 42 U.S.C. § 7410(a)(2)(B). Texas’s network must meet three criteria: “(a) Provide air pollution data to the general public in a timely manner ... (b) Support compliance with ambient air quality standards and emissions strategy development ... (c) Support for air pollution research studies...” 40 C.F.R. Part 58 App. D ¶ 1.1.

Crucially, monitoring data are used to determine whether areas are in compliance with National Ambient Air Quality Standards (“NAAQS”). 40 C.F.R. Part 58 App. A ¶ 1.1(a). The U.S. Environmental Protection Agency (“EPA”) has established NAAQS for only six criteria pollutants: ozone (O₃), particulate matter (PM_{2.5} and PM₁₀), carbon monoxide (CO), lead (Pb), sulfur dioxide (SO₂) and nitrogen dioxide (NO₂). To determine whether an area meets a NAAQS, EPA compares monitoring data to the NAAQS. 40 C.F.R. Part 58 App. D ¶ 1.1(b). Areas that fail to meet a NAAQS are subject to more stringent public health protections under the Act. For example, monitoring data demonstrate that the Houston area failed to meet its deadline for the 2008 ozone standard. 83 Fed. Reg. 56,781 (Nov. 14, 2018). As a result, more major sources of ozone-forming pollution in Houston will have to obtain federal operating permits, and these polluters will have to reduce their ozone-forming emissions or secure offsets to more than offset the new pollution they will emit. 42 U.S.C. §§ 7503, 7511a.

Each year, Texas must demonstrate compliance with federal minimum monitoring requirements. 40 C.F.R. § 58.10(a)(1), (b). The monitoring network plan must include detailed information about the network’s design, including the exact location of each monitor in the network, how each monitor operates, and proposed changes to individual monitors. 40 C.F.R. § 58.10(b)(1)-(5), Part 58 App. D. EPA determines whether the plan meets minimum network design criteria, and the Regional Administrator may require additional information. 40 C.F.R. § 58.10(a)(1). EPA also has authority to order changes to a plan. 40 C.F.R. § 58.14(b). Plans that propose new monitoring sites or other modifications, like the TCEQ plan here, must be approved or denied by the Regional Administrator within 120 days of submission. 40 C.F.R. §§ 58.10(a), (e), 58.11(c), 58.14. Thus, after this comment period, TCEQ must submit the plan to EPA for authorization.

Federal regulations prescribe only minimum design criteria for State and Local Area Monitoring Stations (“SLAMS”) networks to monitor for criteria pollutants, leaving room for states to establish enhanced air monitoring as areas in their states may require. *See* 40 C.F.R. § 58.1; *see also* 40 C.F.R. Part 58 App. D ¶¶ 4.1-4.8.1 (establishing “Pollutant-Specific Design Criteria” for monitoring networks). SLAMS networks are a collection of devices in various

locations that sample the ambient air (or outdoor air) to detect the level of a particular pollutant.¹ The design of a monitoring network—the number of monitors, their specific placement, how frequently they take samples—is critical to getting accurate and representative results. *See generally* 40 C.F.R. Part 58 App. D (establishing mandatory “Network Design Criteria for Ambient Air Quality Monitoring”). Because different pollutants and standards are especially sensitive to particular design criteria, such as the choice of monitor location, EPA provides monitoring network design guidance documents.² In part, the purpose of the network is “to provide support to the [SIP], national air quality assessments, and *policy decisions*.” 40 C.F.R. § 58.2(a)(5) (emphasis added). Thus, network design and operating procedures are critical to assessing compliance with the public health goals of the Clean Air Act and for state and regional air quality planning efforts.

Apart from Act compliance, there are other uses for air quality data that call on Texas to enhance its monitoring network for the protection of public health. Federal regulations envision members of the public making use of publicly available air quality data—the regulations themselves require data dissemination in urban centers, 40 C.F.R. § 58.50, and EPA maintains daily reports via AirNow, available at <https://airnow.gov/>.³ Because air quality data from Texas’s network is publicly available near real-time,⁴ it is crucial to community groups responding to disaster, such as the recent ITC and KMCO fires in the Houston area.

¹ A map of the Texas air monitoring network is available here: <https://tceq.maps.arcgis.com/apps/webappviewer/index.html?id=ab6f85198bda483a997a6956a8486539>.

² *See, e.g.,* EPA, Guidance for Network Design and Optimum Site Exposure for PM_{2.5} and PM₁₀ at 2-7 (1997) (“A PM sampler location, especially its proximity to local sources, can play a large role in its ability to assess spatial variability and source contributions”) (available at: <https://www3.epa.gov/ttn/amtic/files/ambient/pm25/network/r-99-022.pdf>); *see also* EPA, Guidance for Using Continuous Monitors in PM_{2.5} Monitoring Networks at 6-1 to 6-2 (1998) (discussing the difference between Community Representative or “CORE” PM_{2.5} monitors located where people live, work and play in comparison to hot spot monitor sites “located near an emitter with a microscale or middle-scale zone of influence” and Special Purpose Monitors (“SPMs”) “used to understand the nature and causes of excessive concentrations measured at [CORE] or hot spot compliance monitoring sites.”) (available at: <https://www3.epa.gov/ttnamti1/files/ambient/pm25/r-98-012.pdf>); *see also* EPA, Photochemical Assessment Monitoring Stations Implementation Manual at 2-6 (1994) (“Site selection is one of the most important tasks associated with monitoring network design and must result in the most representative location to monitor the air quality conditions being assessed.”) (available at: <https://www3.epa.gov/ttn/amtic/files/ambient/pams/b93-051a.pdf>).

³ AirNow data is also shared with and broadcast by major media outlets that disseminate air quality forecasts to individuals. *See* <https://www.airnow.gov/index.cfm?action=ani.airnowUS> (AirNow “[d]istributes air quality forecasts and data with The Weather Channel, USA Today, CNN, weather service providers, NOAA National Weather Service”).

⁴ TCEQ, AutoGC Data by Day by Site (all parameters), available at: https://www.tceq.texas.gov/cgi-bin/compliance/monops/agc_daily_summary.pl.

B. The public process afforded to the proposed Monitoring Network Plan violates the Clean Air Act.

TCEQ’s proposed Monitoring Network Plan is a SIP revision that should be subject to notice and comment rulemaking. The CAA and its implementing regulations make it clear that a State’s monitoring plan is part of its SIP.⁵ Because an update to the monitoring plan is a SIP revision, federal law requires TCEQ to provide notice and undertake a public hearing before promulgating the plan. *See Hall v. EPA*, 273 F.3d 1146, 1162 (9th Cir. 2001) (“The Act requires that SIP revisions ‘be adopted by the State after reasonable notice and public hearing.’”) (quoting 42 U.S.C. § 7410(l)).

On its webpage, TCEQ solicits public comment for the proposed Plan but does not explain whether it will respond to comments or make changes in response to any comments. It also appears that TCEQ did not and will not hold any public meetings or hearings to explain this Plan to the public. “[N]otice and comment helps to prevent mistakes, because agencies receive more input and information before they make a final decision.” *Ivy Sports Medicine v. Burwell*, 767 F.3d 81, 87 (D.C. Cir. 2014).

Indeed, not only is notice and comment for the Plan required by law and a basic value of American administrative law, TCEQ’s lack of outreach continues to disenfranchise Texas communities long deprived of proportionate representation in environmental regulation, including native and non-English speaking communities who are deprived of critical information about air quality and public health by TCEQ’s arbitrary refusal to publish air quality monitoring data and the monitoring plan itself in Spanish and other languages. As discussed below, many low-income communities and communities of color throughout Texas suffer from poor air quality and would benefit from greater air quality monitoring in their area. However, due to TCEQ’s failure to publish notice and conduct public outreach regarding its proposed Plan—again, including its failure to publish this basic information in Spanish—Texans in these communities may be wholly unaware of Texas’ air quality monitoring network or that it changes every year.

Commenters request that TCEQ remand this Plan and revise it through notice and comment rulemaking. Further, that TCEQ hold a public hearing, with Spanish interpretation services available, in Houston or El Paso to afford the public an opportunity to ask questions about the Plan of TCEQ staff responsible for its creation and implementation.

⁵ *See* 42 U.S.C. § 7410(A)(2)(b) (each SIP must “provide for establishment and operation of . . . systems . . . necessary to . . . monitor, compile, and analyze data on ambient air quality”); 40 C.F.R. § 51.17(b)(1)-(6) (each SIP “shall include a description of the . . . proposed air quality surveillance system, which shall set forth,” among other things: the exact location of the monitors; how each monitor operates; and the timetable for installing any equipment needed to complete the monitoring system”).

I. Public health warrants enhanced air quality monitoring in Houston and surrounding communities

A. We strongly support TCEQ's placement of a new federal reference monitor for PM_{2.5} in west Houston, but more monitors are needed in Houston.

TCEQ's 2020 Annual Monitoring Plan recommends installing a new PM_{2.5} FEM continuous monitor at the City of Houston's existing Westhollow monitoring station. Commenters strongly agree with TCEQ's plan to deploy a new PM_{2.5} monitor at this location. In addition, we believe TCEQ should also install a new PM_{2.5} monitor at TCEQ's Bayland Park monitoring station. We also strongly recommend that all existing PM_{2.5} monitors be retained.

TCEQ should also work with the City of Houston, Harris County, and the U.S. EPA to support the installation of lower cost community monitors throughout Houston. Additional community monitors can play a key role in providing communities an early warning, and can help regulators take action against polluters. TCEQ should initiate a speciation/source apportionment study to determine the sources of PM_{2.5} in western Houston and develop a plan of action to reduce PM_{2.5} exposure in western Houston.

1. New peer-reviewed data demonstrates high concentrations of PM pollution in Western Houston.

Recent peer-reviewed, published research, described in greater depth below, provides nationwide high resolution (1km x 1km) annual PM_{2.5} ambient concentration data for 2000 to 2015.⁶ Using this research in an ensemble model of satellite and other data, Commenters were able to identify high concentrations of particulate pollution in areas of Houston with no current EPA federal reference monitors. According to this data, there are high concentrations of PM_{2.5} pollution in western Houston that have never previously been identified due to a lack of monitors. EPA requires that "monitoring stations or sites must be sited to represent area-wide air quality," and be placed in "an area of expected maximum concentration" however, there is currently no monitor in this area. 40 C.F.R. Part 58 App. D. Based on this new PM_{2.5} ambient concentration data and the population density data in the area, it is clear the existing monitoring network in Houston does not meet the EPA regulatory requirements. Even though the ensemble model draws on 2000-2015 data, it is highly likely that these areas in western Houston are still most likely the areas of maximum PM_{2.5} concentration. TCEQ should finalize the monitor it proposes in Westhollow and install a new monitor at Bayland Park monitoring station.

2. Overview of the data sources for Houston PM_{2.5} air quality assessment

Each of the data sets described below were assembled into an interactive ArcGIS data platform. The geographical representation of the data allowed us to evaluate how well the existing FRM PM_{2.5} monitors were meeting EPA's regulatory requirements for monitor placement.

⁶ Di, Q, Kloog, I, Koutrakis, P, Lyapustin, A, Wang, Y and Schwartz, J (2016). Assessing PM_{2.5} exposures with high spatiotemporal resolution across the Continental United States. Environ Sci Technol 50(9): 4712-4721.

Ensemble Data To conduct our assessment, we used PM_{2.5} ambient concentration data from an EPA funded peer reviewed study⁷ that estimated daily PM_{2.5} concentrations at a resolution of 1 km x 1 km for 2000 to 2015. The study combined estimates from three different model types: 1) neural network, 2) random forest and 3) gradient boosting. Each model was run nationwide and each used a unique combination of FRM PM_{2.5} monitoring, EPA CMAQ, land-use, satellite and other data. A regression was performed comparing the results of each model against FRM monitors and then a weighted average was calculated for each 1km by 1km tract. The model performed well up to 60ug/m³ with an R² of 0.86 for the daily PM_{2.5} predictions and 0.89 for the annual results.

In EPA's *Policy Assessment for the Review of the NAAQS for Particulate Matter*⁸, they reviewed a wide range of new hybrid modeling methods, including the Di et al⁹, approach. According to EPA, "Excellent performance in cross-validation tests suggests that hybrid methods are reliable for estimating PM_{2.5} exposure in many applications."¹⁰ While EPA noted that there are important limitations to these hybrid models, including their performance in rural areas, western U.S. and where emission concentrations are low, these limitations do not appear to be a factor for estimates in the Houston MSA area.

CMAQ Data CMAQ is the primary modeling tool used by States and EPA to support implementation of the Clean Air Act. CMAQ integrates the modeling of meteorology, emissions and chemistry to estimate ozone, PM and air toxics at the local, national and hemispheric levels. It has been in use by state and EPA air quality officials for over 20 years and is considered "EPA's premier modeling system for studying air pollution..."¹¹ For our analysis, we used EPA's annual PM_{2.5} CMAQ concentrations averaged over the 2014-2016 period for the Houston MSA.

Population Density Population data was taken from the 2010 US Census.

PM_{2.5} Monitor Locations The latitude and longitude for the Houston MPA FRM PM_{2.5} monitors was taken from the EPA AirNow web site.¹²

Major PM_{2.5} Stationary Sources Data for major PM_{2.5} emissions is from TCEQ State of Texas Air Reporting System.¹³

⁷ Qian Di, et al. *An ensemble-based model of PM_{2.5} concentration across the contiguous U.S. with high spatiotemporal resolution*. Environment International 130 (2019) 104909.

⁸ U.S. EPA, *Policy Assessment for the Review of the National Ambient Air Quality Standards for Particulate Matter*, EPA-452/R-20-002 (Jan. 2020).

⁹ Di, Q, Kloog, I, Koutrakis, P, Lyapustin, A, Wang, Y and Schwartz, J (2016). Assessing PM_{2.5} exposures with high spatiotemporal resolution across the Continental United States. Environ Sci Technol 50(9): 4712-4721.

¹⁰ U.S. EPA, *Policy Assessment for the Review of the National Ambient Air Quality Standards for Particulate Matter*, EPA-452/R-20-002 at 2-53 (Jan. 2020).

¹¹ U.S. EPA. Science in Action. *Community Multiscale Air Quality (CMAQ) Modeling System*. Office of Research and Development. (Aug. 2019), available at:

https://www.epa.gov/sites/production/files/2018-10/documents/cmaq_factsheet_.pdf.

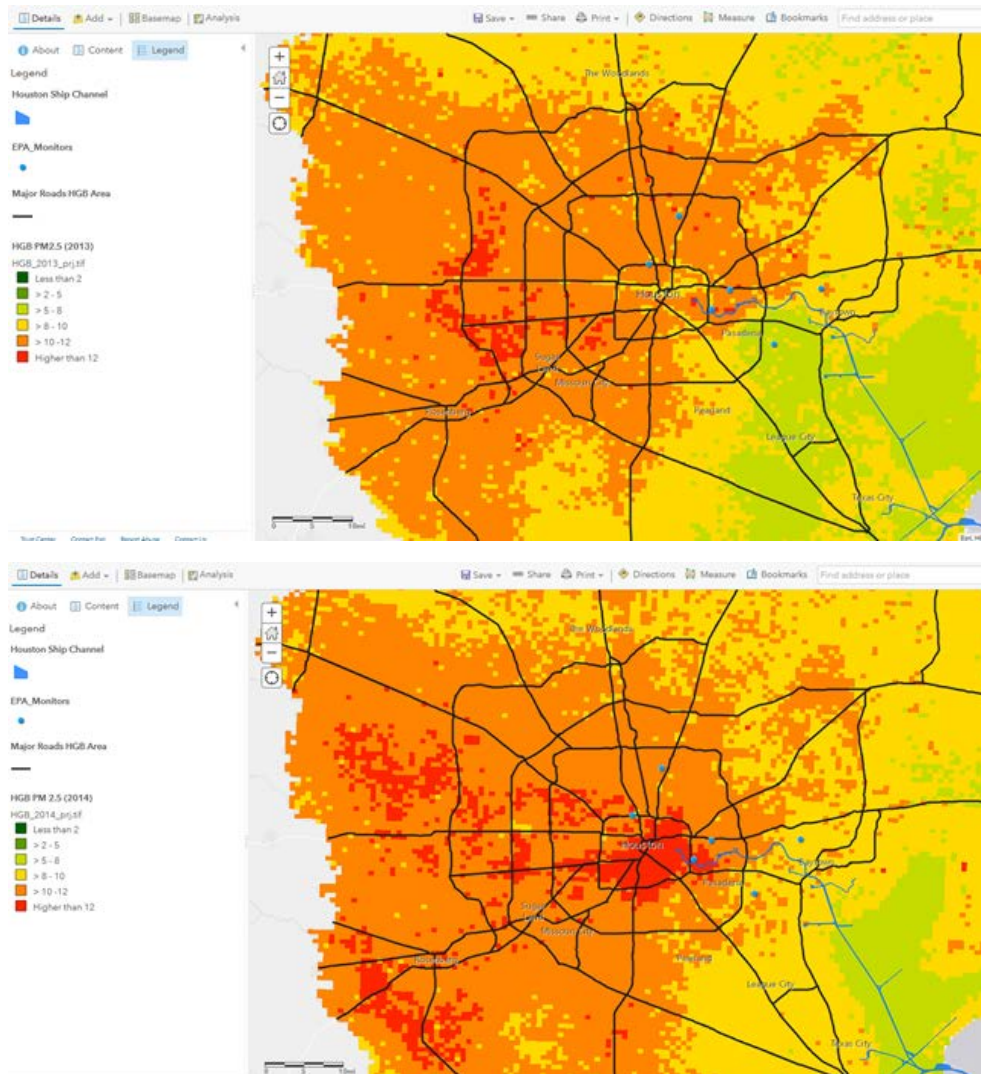
¹² <https://www.epa.gov/outdoor-air-quality-data/download-daily-data>.

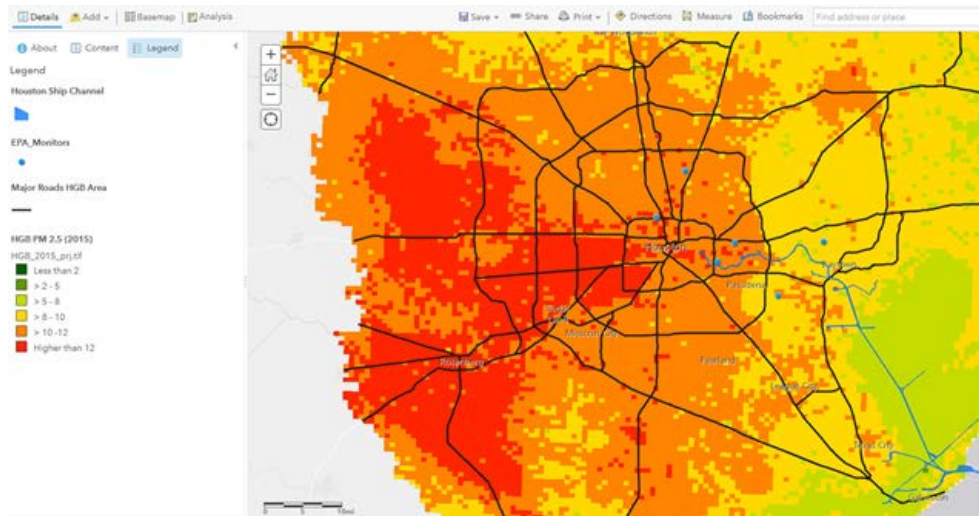
¹³ <https://www.tceq.texas.gov/airquality/point-source-ei/psei.html>.

3. 2013 to 2015 PM_{2.5} ambient concentrations in Houston

The maps below show the growth of a PM_{2.5} plume in western Houston from 2013 to 2015, which is the most recent available data from the ensemble analysis. The ensemble analysis, including the satellite data, made it possible, for the first time, to identify this air pollution even though there were no FRM monitors located in western Houston.

We believe the PM_{2.5} in western Houston is from secondary formation of NO_x emissions, which are being transported from industrial and marine sources around the Houston Ship Channel, along with diesel vehicles and construction equipment, however, more research is needed.





4. Health damages from particulate matter pollution

These elevated levels of PM_{2.5} have major health and economic consequences for residents of Houston. A new analysis¹⁴ from the Harvard School of Public Health and EDF based on the ensemble data has found that the elevated levels of PM_{2.5} in Houston were responsible for:

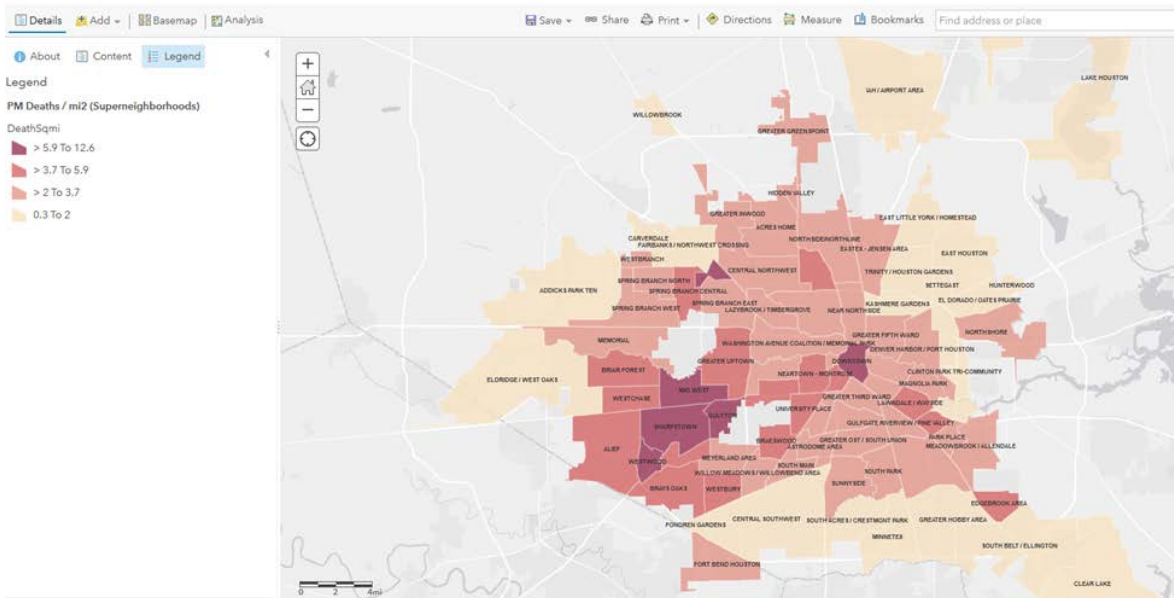
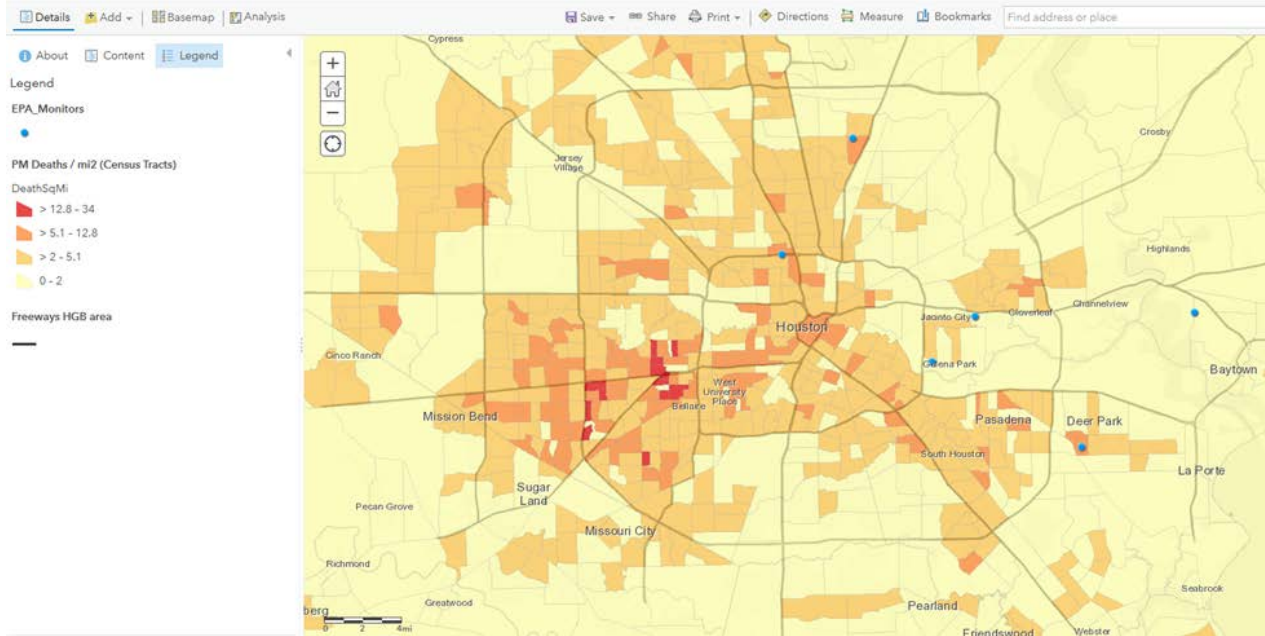
- Over 5,200 premature deaths, and
- Over \$49 billion in economic damages.

Particulate pollution is made up of small toxic airborne particles like dust, soot, and liquid particles, or aerosols. Most particulate pollution in Houston is from the chemical and petroleum industry, power generation, and diesel vehicles and construction equipment. These toxic particles penetrate deep into the lungs and are linked to heart attacks, lung disease, strokes, asthma, cancer, and can lead to early death. This pollution is particularly dangerous for young people – studies show that PM_{2.5} exposure can impair childhood lung development.

The following maps show how the 5,213 deaths from PM_{2.5} exposure in 2015 are distributed across Houston. The first map shows the deaths per square kilometer by census tract. The average number of deaths is 2.6 per square mile; however, in 23 census tracks the 2015 rate exceeded 10 deaths per square mile.

¹⁴ <http://blogs.edf.org/health/2020/05/11/pm-standards-houston-analysis/>.

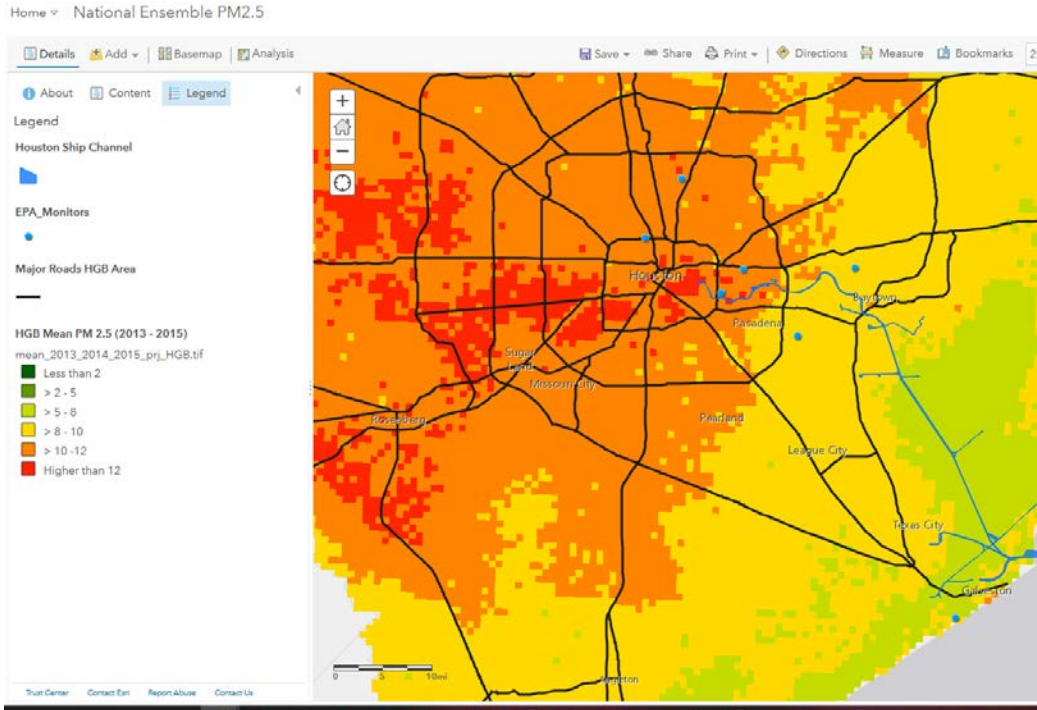
In Houston, residents are encouraged to work with their Super Neighborhood council to identify issues of concern that need to be raised to the City of Houston. For that reason, we have also presented the health damages from PM_{2.5} for each Super Neighborhood. The white areas on the map are not currently represented by a Super Neighborhood.

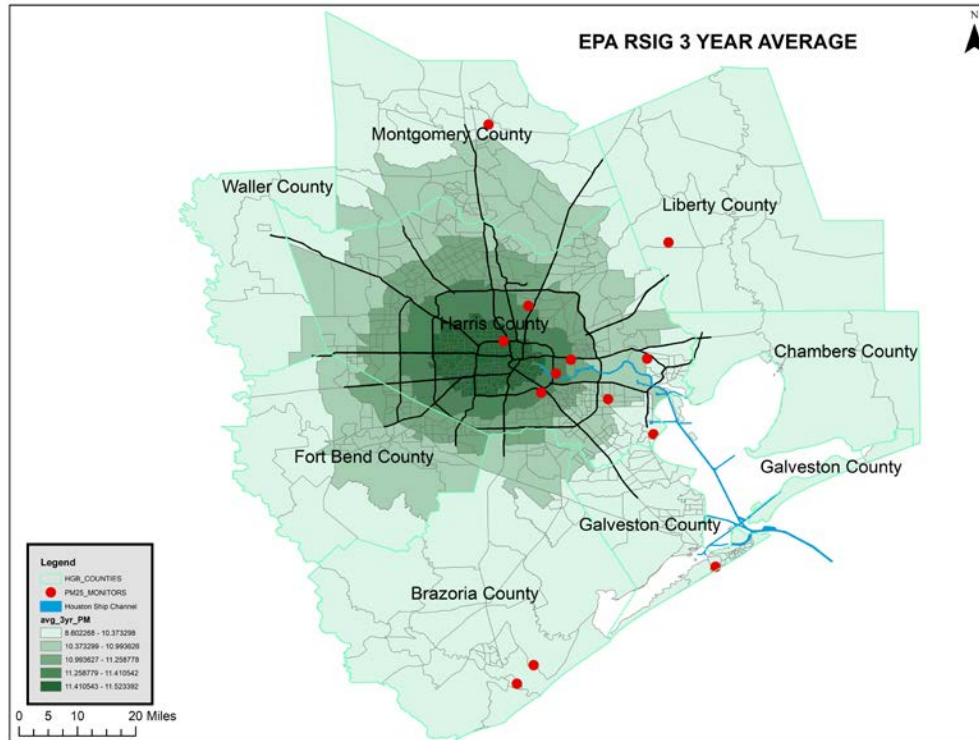


5. Assessment of federal reference monitors for PM_{2.5} monitor locations in Houston

In this section, we review the co-location/spatial distribution of Houston’s FRM PM_{2.5} monitors and areas of elevated PM_{2.5} concentration. We also review whether the FRM PM_{2.5} monitors are in areas of high population density, and we compare the ensemble data with EPA’s PM_{2.5} CMAQ data.

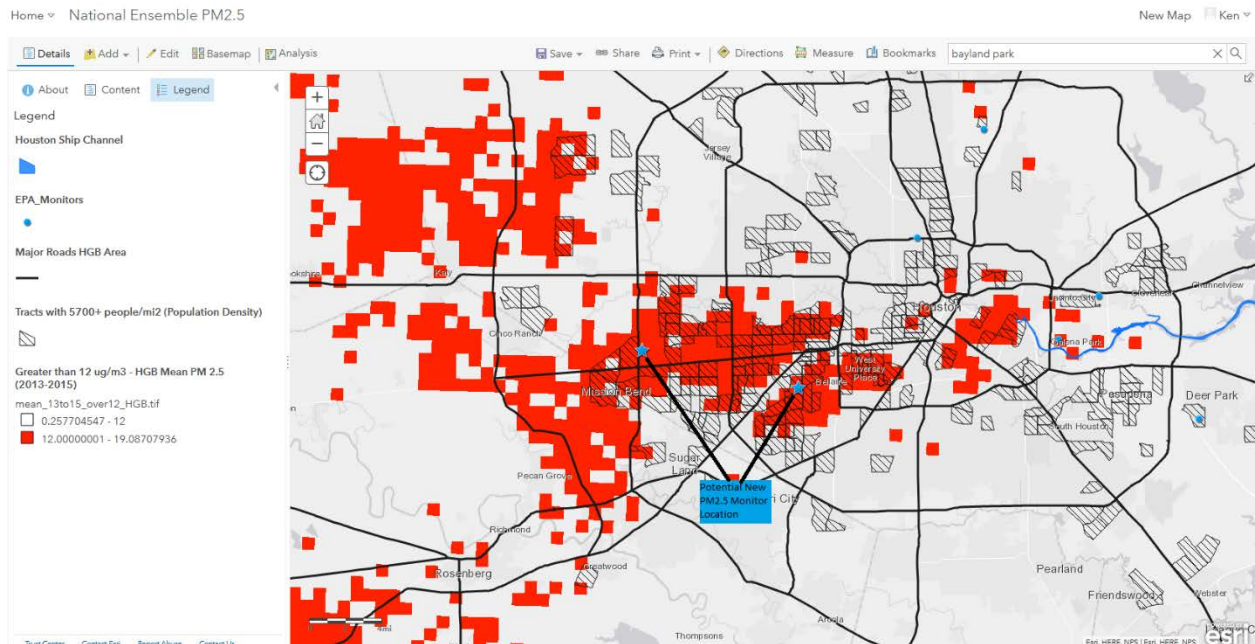
For our analysis, we defined areas of “maximum concentration” as areas where the average 2013-2015 PM_{2.5} concentration exceeded the 12.0 ug/m³ NAAQS standard. As can be seen in the map below, there are currently no FRM PM_{2.5} monitors (blue dots) in central and western Houston where average annual PM_{2.5} concentrations exceeded 12.0 ug/m³ for 2013-15 (red areas). For comparison purposes, we have also included a map of EPA’s PM_{2.5} CMAQ/RSIG data for the same period. The CMAQ data also demonstrates that PM_{2.5} levels in western Houston are elevated.





The second major criteria for determining the location of FRM PM_{2.5} monitors is population density. The next map overlays areas in Houston where PM_{2.5} is greater than 12.0ug/m³ and where population density is greater than 5,700 people per square mile.¹⁵ As can be seen in the map, there are no existing FRM PM_{2.5} monitors (blue dots) in central or western Houston where PM_{2.5} is greater than 12.0ug/m³ and population density is greater than 5,700 people per square mile.

¹⁵ We chose 5,700 people/mi² because ArcGIS identified it as a “Natural Break” in the population.



As TCEQ has acknowledged in their 2020 Annual Monitoring Plan, and as these analyses further demonstrate, there is compelling evidence for installation of at least one new FRM PM_{2.5} monitor in the western or central part of Houston. Given the elevated levels of PM_{2.5} and high population density, we believe TCEQ should also install a new PM_{2.5} monitor at TCEQ’s Bayland Park monitoring station. In addition, funding is needed to conduct a speciation/source apportionment study to understand what is causing these particulate matter concentrations, and to develop an action plan to reduce the sources of emissions. It is also critical that existing FRM PM_{2.5} monitors be maintained in their current location.

B. Houston’s Fifth Ward

Fifth Ward is a predominantly low-income African American community in east Houston that is home to the Many Diversified Interests, Inc. (“MDI”) Superfund site.¹⁶ MDI is a nuisance to its community and a constant source of offsite, onsite, and residential lead contamination, among other pollutants. Despite ongoing remediation efforts, a new housing development is being built on top of the MDI property.¹⁷ Fifth Ward is also home to another nuisance; creosote contamination at the former Union Pacific Houston Wood Preserving Works facility.¹⁸ Every

¹⁶ EPA, Superfund Site: Many Diversified Interests, Inc. Houston, Texas, available at: <https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.contams&id=0605008> (last visited May 16, 2019)

¹⁷ Houston Business Journal, Houston’s Fifth Ward Redevelopment Efforts Continue With Plans for Single-Family Homes, (Mar. 3, 2014), available at: https://www.bizjournals.com/houston/morning_call/2014/02/houstons-fifth-ward-redevelopment-efforts-continue.html.

¹⁸ Union Pacific has recently applied for a modification and renewal of its remediation permit; affected residents have objected to Union Pacific’s proposed cost-cutting measures. TCEQ, Notice of Receipt of Application and Intent to Obtain Hazardous Waste Permit/Compliance

time it rains and in hot weather, residents report strong chemical smells from this only partially remediated site.

There is mounting evidence of public health threats in Fifth Ward from lead and other toxic contaminants. In 2014, a study reported that almost all of Fifth Ward experiences amongst the highest probabilities for very low birth weights which could result from exposure to contaminants like lead.¹⁹ Even in 2019, Fifth Ward is a lead poisoning hot spot. Blood lead levels among children were among the highest in the state of Texas.²⁰ The Houston Health Department, Bureau of Community and Children’s Environmental Health was also awarded a grant to expand a lead poisoning prevention pilot in the Fifth Ward.²¹

Now more information is needed about pollutants like lead in the air. Fifth Ward residents need air quality data so they can take action to protect their health from elevated levels of lead and volatile organic compounds (“VOC”) and to alert regulatory officials when they need to take specific action against potential emitters. Currently, there are no lead or VOC air quality monitors in Fifth Ward. It is not enough that TCEQ believes meeting *minimum* federal requirements is enough to meet VOC monitoring requirements, TCEQ Annual Monitoring Network Plan 24, one of the purposes of the air monitoring network is provide data for policy decisions, 40 C.F.R. § 58.2(a)(5), Commenters request that TCEQ place a lead and VOC monitor in Fifth Ward. Lead and VOC monitors in Fifth Ward will allow residents not only to access “air pollution data...in a timely manner,” 40 C.F.R. Part 58 App. D ¶ 1.1(a), but will inform public health policy decisions affecting Fifth Ward. Metal recycling is also a serious public health concern for residents of the 5th Ward. An analysis by the Environmental Defense Fund found levels of air pollution on roads adjacent to these facilities to be significantly elevated, comparable to being within 200 m of a highway and likely the result of diesel emissions. Some of these facilities are in close proximity to schools and other sensitive populations. There is a clear need for PM monitoring in this part of Houston.

C. Portland-Gregory Area

The commenters agree that the Portland-Gregory Area needs additional monitors, particularly to measure PM₁₀, and potentially PM_{2.5}, as well as enhanced VOC Monitoring. As the draft Monitoring report states:

Plan/Major Amendment/Renewal Permit/Compliance Plan No. 50343 (Mar. 13, 2015), available at:

https://www14.tceq.texas.gov/epic/eNotice/index.cfm?fuseaction=main.PublicNoticeDescResult&requesttimeout=5000&CHK_ITEM_ID=963382312015077.

¹⁹ Thompson, J.A., et al., Evaluating geostatistical modeling of exceedance probability as the first step in disease cluster investigations: very low birth weights near toxic Texas sites.607-611 (2014), available at: <https://www.ncbi.nlm.nih.gov/pubmed/24906417>.

²⁰ Agency for Toxic Substances & Disease Registry, Public Health Statement for Lead (Aug. 2007), available at: <https://www.atsdr.cdc.gov/phs/phs.asp?id=92&tid=22>.

²¹ National Environmental Health Association, NEHA and Partners Award HiAP and Lead Poisoning Prevention Funds (Jan. 18, 2019), available at: <https://www.neha.org/news-events/latest-news/neha-and-partners-award-hiap-and-lead-poisoning-prevention-funds>.

Due to industrial and population growth in the Gregory-Portland area north of Corpus Christi, the TCEQ Monitoring Division, Toxicology Division, Air Quality Division, and TCEQ Corpus Christi Regional Office continue to evaluate the potential placement of PM10 monitors in San Patricio County, as previously recommended in the 2019 AMNP.

Since then, new facilities including a steel mill, an ethane cracker, several expansions of other petro-chemical plants, and a major transmission upgrade have been either proposed or approved. Increased traffic connected to the Port of Corpus Christi, and its possible expansion, are other reasons to increase monitoring. The area north of Corpus Christi is in desperate need of further monitoring for both PM and VOC, and the TCEQ should add monitors to the region as part of this plan.

While Commenters appreciate enhanced PM₁₀ monitoring in the Portland-Gregory Area, recent permitting actions by TCEQ urgently warrant enhanced VOC monitoring as well. In 2019, TCEQ pointed to recent industrial and population growth in the Portland/Gregory area as justification for the new PM₁₀ monitor location. However, now that TCEQ has permitted a massive ethane cracker facility, additional pollutants like VOCs should be monitored for as well as PM₁₀.

Last June, TCEQ approved permits for Gulf Coast Growth Ventures Asset Holding LLC (“GCGV”), an ExxonMobil and SABIC joint venture, for the construction of the largest ethane cracker in North America to be sited in Gregory, Texas—a predominantly low-income Latino community.²² At the hearing on the highly contested proposal, consulting engineering expert Dr. Ranajit Sahu testified that plant wide allowable emission totals for this facility will be:

| Pollutant | Tons per year (tpy) |
|---|----------------------------|
| Volatile organic compounds | 976.33 |
| Nitrous oxides | 525.03 |
| Particulate matter | 185.82 |
| Particulate matter of 10 micrometers or less | 176.35 |
| Particulate matter of 2.5 micrometers or less | 167.51 |
| Sulfur dioxide | 38.49 |

Permitted emission limits for this facility alone are staggering and point to the need for more monitors in the area to protect the community and ensure there are no NAAQS violations resulting from this new facility.²³ TCEQ’s reasoning for a new PM monitor should apply to other pollutants emitted by this facility as emissions of VOCs will far exceed new emissions of PM₁₀ by a factor of greater than five. This source alone is massive and threatens exceedances of

²² Application of GCGV Asset Holding, LLC, for Air Quality Permit Nos. 146425/PSDTX1518 & 146459/PSDTX1520 in San Patricio County, Texas, SOAH Docket Nos. 582-18-4846, 582-18-4847; TCEQ Docket Nos. 2018-0899-AIR, 2018-0900-AIR.

²³ *Id.*, Direct Testimony of Ranajit Sahu, Ph.D., QEP, CEM (Nevada) at 12, 33 (Dec. 7, 2018).

applicable NAAQS with the addition of these annual emissions. Because one of the purposes of the air monitoring network is to “[s]upport compliance with ambient air quality standards and emissions strategy development,” 40 C.F.R. Part 58 App. D ¶ 1.1(b), the TCEQ should install new VOC monitors in the Gregory-Portland Area in addition to new PM₁₀ monitoring.

D. Houston Ship Channel

The Commission has a duty “to protect the public from cumulative risks in areas of concentrated operations” and “give priority to *monitoring* and enforcement in areas in which regulated facilities are concentrated.” Tex. Water Code § 5.130 (emphasis added). The Houston area is home the Houston Ship Channel – an area of concentrated operations. There is a compelling need for additional VOC monitors along the Houston Ship Channel. Recent data demonstrate that there are likely systematic underreporting errors with existing air emissions reporting at facilities along the Channel. For example, testing for VOCs and benzene along the Channel, researchers found far higher emissions levels than the estimates produced and reported by the operators themselves.²⁴ In fact, the study found that VOC emissions were 41% higher than emissions inventories reported, and benzene emissions were 94% higher.²⁵ This means that operators along the Channel are exceeding their permitted limits, and communities are paying the price with their health.

The problem of unauthorized emissions is not evenly distributed; some communities along the Channel are exposed to far greater pollution than others. Recent data demonstrate a greater total emissions burden from unauthorized emissions borne by Manchester, Pasadena, Deer Park, and Baytown—all along the Channel.²⁶ When compared to other Channel communities, Manchester exhibited far greater emissions density, meaning that it is a Channel community at greatest vulnerability from its surrounding industrial polluters.²⁷ Indeed, a 2016 study found 26 Risk Management Plan facilities sited within Manchester.²⁸

Daily unauthorized emissions are compounded by the steady stream of preventable plant disasters at Channel facilities. For example, the recent ITC fire in Deer Park exposed local

²⁴ Daniel Hoyt & Loren H. Raun, Measured and Estimated Benzene and Volatile Organic Carbon (VOC) Emissions at a Major U.S. Refinery/Chemical Plant: Comparison and Prioritization, 65 J AIR & WASTE MGMT. ASS'N 1020, 1021 (2015), available at: <https://www.tandfonline.com/doi/pdf/10.1080/10962247.2015.1058304?needAccess=true>.

²⁵ *Id.* at 1029.

²⁶ Sustainable Systems Research, LLC, Vulnerability and Stationary Source Pollution in Houston at 25 (Feb. 8, 2019).

²⁷ *Id.* at 25.

²⁸ Union of Concerned Scientist & Texas Environmental Justice Advocacy Services, Double Jeopardy in Houston, Acute and Chronic Chemical Exposures Pose Disproportionate Risks for Marginalized Communities at 19 (Oct. 2016), available at <https://www.ucsusa.org/sites/default/files/attach/2016/10/ucs-double-jeopardy-in-houston-full-report-2016.pdf>.

residents to unhealthy levels of benzene.²⁹ TCEQ there relied on the air monitoring network for data. In Harvey's wake, a tank at Valero's refinery also released benzene and dozens of other pollutants into Manchester, but not due to hurricane damage— Valero's storage tank had previously failed an inspection and should have been decommissioned.³⁰ Chronic allowable emissions exceedances render the TCEQ air permit review process incapable of protecting public health because the technical assumptions upon which air permits are issued likely greatly underestimate actual pollution levels. As such, enhanced VOC monitoring in Houston Ship Channel communities is necessary to fill this regulatory gap.

Commenters request that TCEQ place additional VOC monitors along the Houston Ship Channel because of the staggering number of air polluting facilities there. Currently, there are no VOC monitors along the Channel on the southbound side of IH 610. Here, commenters recommend that TCEQ place a VOC monitor at or near J.R. Harris Elementary School—a public school where nearly all of the children are racial minorities and over two-thirds of the students are English Language Learners. Commenters would like to see additional monitoring in Manchester, Pasadena, Deer Park, and Baytown.

II. TCEQ Must Increase Monitoring of Ozone Pollution in the Greater San Antonio Area.

A. Ozone is a serious public health problem in the Greater San Antonio Area.

San Antonio is currently violating the 2015 ozone NAAQS. San Antonio's unhealthy air quality has consequences for the more than 1.9 million Texans who live in Bexar County, including approximately 505,510 children and 106,686 adults suffering from asthma.³¹ Recent epidemiological studies suggest that even modest reductions in ozone levels, which could be achieved by reducing pollution from a handful of large sources, would save hundreds of millions of dollars in avoided public health costs, premature deaths, and lost work and school days in the San Antonio area. Indeed, a recent report, conducted using an EPA-approved modeling platform, concluded that compliance with the 2015 ozone NAAQS would prevent 24 premature deaths each year in Bexar County alone, resulting in approximately \$220,000,000 in avoided public health costs.³² The study also estimated that a modest drop in ozone levels would prevent over 38,000 lost school and work days annually in the San Antonio area. *Id.*

B. Additional monitoring is necessary to ensure San Antonio's smog problem is resolved in a prompt and cost-effective manner.

On July 25, 2018, EPA designated Bexar County as a non-attainment area for the 2015 ozone NAAQS. 83 Fed. Reg. 35,136. EPA designated Atascosa, Comal, and Guadalupe Counties as attainment/unclassifiable, even though EPA determined that these three counties

²⁹ TCEQ, High levels of benzene detected at ITC fire site (Mar. 21, 2019), available at: <https://www.tceq.texas.gov/news/releases/high-levels-of-benzene-detected-at-itc-fire-site>.

³⁰ TCEQ, Investigation Report, Valero Energy Partners LP, Investigation No. 1408309 (Oct. 5, 2017 to Nov. 15, 2017).

³¹ <https://www.lung.org/our-initiatives/healthy-air/sota/city-rankings/states/texas/bexar.html>.

³² <https://www.sanantonio.gov/Portals/0/Files/Sustainability/OzoneHealth/final-report.pdf>.

were responsible for approximately 31 percent of the total ozone precursor emissions in the San Antonio area, that air-flow modeling showed air moving from these counties to violating monitors in Bexar County on exceedance days, and that these counties had no ozone monitors of their own, and thus might themselves be violating the NAAQS. EPA’s decision to designate these counties as attainment/unclassifiable is currently the subject of litigation before the U.S. Court of Appeals for the Fifth Circuit. *See Texas v. EPA*, No. 18-60606 (5th Cir.).

Regardless of how this litigation is resolved, TCEQ must add additional ozone monitors in the San Antonio area. Among other things, TCEQ’s monitoring network must be designed to “[p]rovide air pollution data to the general public in a timely manner” and “[s]upport compliance with ambient air quality standards and emissions strategy development.” 40 C.F.R. Pt. 58, App. D, Section 1 (a), (b). Monitoring sites “*must* be capable of informing managers about . . . air pollution transported into and outside of a city or region.” *Id.*, Section 1.1.1. Sites must also be designed “to determine the impact of significant sources or source categories on air quality.” *Id.*

To support these goals, and to ensure that emission control strategies designed for the greater San Antonio area *solve* the region’s smog problem—rather than simply causing industries to migrate from Bexar County to areas that are currently designated as attainment—TCEQ should add ozone monitors in surrounding counties. At minimum, monitors should be added in New Braunfels—to ensure that the approximately 300,000 people who live in Guadalupe and Comal counties have localized air quality data. Adding an additional monitor in New Braunfels is especially appropriate given that Comal County had the second highest growth rate of any county in the United States between 2017 and 2018, increasing by 5.4 percent.³³

In addition, TCEQ should add an additional monitor north of the San Miguel Electric Plant, to help evaluate this plant’s impact on Bexar County’s ozone levels. According to EPA’s 2014 National Emission Inventory, this 500 MW coal-fired power plant is responsible for nearly 2,400 tons of NO_x a year. Consistent with its obligation to “determine the impact of significant sources or source categories on air quality,” TCEQ should install an ozone monitor north of the San Miguel plant to help assess the impact of this plant on Bexar County’s air quality.

III. TCEQ must add additional monitors in the Permian Basin

A. TCEQ must add two ozone monitors to protect residents of the Permian Basin.

40 C.F.R. Part 58, App. D establishes the minimum ozone monitoring requirements applicable to a state monitoring network. The regulations recognize that the number of ozone monitoring sites required will depend upon “area size (in terms of population and geographic characteristics) and typical peak concentrations (expressed in percentages below, or near the O₃ NAAQS).” *Id.*, § 4.1(a). Table D-2 sets forth the minimum number of monitoring sites required for a given metropolitan area, based on the population of the Metropolitan Statistical Area (“MSA”) and the most recent 3-year design value for the area. The regulations clarify that the regulatory agencies should use population data for the Combined Statistical Area (“CSA”) if

³³ *See New Census Bureau Estimates Show Counties in South and West Lead Nation in Population Growth* (Apr. 18, 2019), available at: <https://www.census.gov/newsroom/press-releases/2019/estimates-county-metro.html>.

there are “multiple MSAs” in a metropolitan area. *Id.*, § 4.1(b) (“Within an O₃ network, at least one O₃ site for each MSA, or CSA if multiple MSAs are involved, must be designed to record the maximum concentration for that particular metropolitan area.”) (emphasis added).

Table D-2 provides a starting point but not an ending point. It is expected that “[t]he total number of O₃ sites needed to support the basic monitoring objectives of public data reporting, air quality mapping, compliance, and understanding O₃-related atmospheric processes *will include more sites than these minimum numbers . . .*” *Id.* “The EPA Regional Administrator and the responsible State or local air monitoring agency must work together to design and/or maintain the most appropriate O₃ network to service the variety of data needs in an area.” *Id.*

The Midland-Odessa Combined Statistical Area (“CSA”), composed of Martin and Midland counties (Midland, Texas) and Ector county (Odessa, Texas), is one of the fastest growing regions in the United States.³⁴ According to the U.S. Census Bureau, Midland experienced the greatest percentage growth from 2017 to 2018 of any metropolitan area in the nation—growing by 4.3 percent and adding 7,383 people.³⁵ Odessa was the fifth fastest growing area, experiencing a growth rate of 3.2 percent and adding 4,951 people. *Id.* Including Martin County as well as Midland and Odessa Counties, the combined population of the CSA was 348,826 as of July 1, 2019 (See Figure 1). Together, the CSA’s population as of 2018 was 340,146, and it grew at a rate of 2.5 percent (meaning it was adding about 8,500 people per year). Assuming growth rates remain constant through the second half of 2019 and into 2020, the population of Midland-Odessa CSA will certainly be higher than 350,000 by 2020 (See Figure 1).³⁶

Figure 1

| Annual Estimates of the Resident Population for Counties in Texas: April 1, 2010 to July 1, 2019 | | | | | | | | |
|--|------------------------------------|------------|------------|------------|------------|------------|------------|-------------------------------|
| Geographic Area | Population Estimate (as of July 1) | | | | | | | |
| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| Texas | 26,480,266 | 26,964,333 | 27,470,056 | 27,914,410 | 28,295,273 | 28,628,666 | 28,995,881 | |
| Ector County, Texas | 149,656 | 154,588 | 159,903 | 157,858 | 156,951 | 161,960 | 166,223 | |
| Martin County, Texas | 5,272 | 5,462 | 5,646 | 5,616 | 5,531 | 5,681 | 5,771 | |
| Midland County, Texas | 152,356 | 156,725 | 162,328 | 163,850 | 165,318 | 172,505 | 176,832 | |
| Total Midland - Odessa CSA Population | 307,284 | 316,775 | 327,877 | 327,324 | 327,800 | 340,146 | 348,826 | At least higher than 350,000* |

Note: The estimates are based on the 2010 Census and reflect changes to the April 1, 2010 population due to the Count Question Resolution program and geographic program revisions. All geographic boundaries for the 2019 population estimates are as of January 1, 2019. For population estimates methodology statements, see <http://www.census.gov/programs-surveys/popest/technical-documentation/methodology.html>.

Suggested Citation:
Annual Estimates of the Resident Population for Counties in Texas: April 1, 2010 to July 1, 2019 (CO-EST2019-ANNRES-48)

*Comment not included in US Census Bureau data, added as a clarification note

³⁴ For reference to treatment of these counties as a CSA, see U.S. Department of Economics and Statistics Administration, U.S. Census Bureau:

https://www2.census.gov/geo/maps/econ/ec2012/csa/EC2012_330M200US372M.pdf.

³⁵ See U.S. Census Bureau (2019) discussing metropolitan growth rates at <https://www.census.gov/newsroom/press-releases/2019/estimates-county-metro.html> (accessed on May 12, 2020).

³⁶ Figure comprised of data Published by U.S. Census Bureau (2019) “County Population Totals: 2010-2019” https://www.census.gov/data/tables/time-series/demo/popest/2010s-counties-total.html#par_textimage_242301767.

Midland and Odessa are part of the same metropolitan area, and should be treated as such for purposes of air quality monitoring network design. Together, the Midland-Odessa CSA includes three counties—Martin, Midland, and Ector Counties—which have an area of about 2,700 square miles. Odessa’s north-east border (near Mission Blvd) is about 3 miles away from the Midland airport—which is incorporated within the city limits of Midland. About 20 miles separate the centers of each city. Under longstanding EPA regulations, Midland and Odessa are included in the same Intrastate Air Quality Control Region. *See* 40 C.F.R. § 81.137.

Where a metropolitan area is divided into multiple MSAs, EPA regulations require regulators to consider the entire CSA for purposes of designing the air quality monitoring network. *See* 40 C.F.R. Part 58, App. D, § 4.1(b) (“Within an O₃ network, *at least one O₃ site for each MSA, or CSA if multiple MSAs are involved*, must be designed to record the maximum concentration for that particular metropolitan area.”) (emphasis added). Here, although the U.S. Census Bureau has characterized Midland-Odessa as an MSA consisting of two CSAs, it is clear that the two cities comprise a single metropolitan area. The combined population of the CSA exceeds the threshold above which an ozone monitor is required under Table D-2. Accordingly, under section 4.1(b), TCEQ must operate “at least one O₃ site for . . . [the] CSA” for the purpose of “record[ing] the maximum concentration for that particular metropolitan area.” At present, TCEQ does not have a single ozone monitor in the Midland-Odessa area. That is unlawful under EPA regulations.

Failing to consider Midland and Odessa as a single unit would be arbitrary and capricious. Other metropolitan areas that span much greater distances are treated as a single unit for the purpose of Table D-2. The Houston MSA spans nine counties and has an area of 9,444 square miles. One can drive for 110 miles along I-10 (from Sealy to Winnie) without leaving the MSA. The Dallas-Fort Worth-Arlington MSA is over 9,000 square miles. About 30 miles separate downtown Dallas from downtown Fort Worth. The San Antonio MSA includes eight counties and has an area of 7,340 square miles. It would be arbitrary and capricious to treat these large urban conglomerations as single units under Table D-2, while refusing to do the same for the much smaller Midland-Odessa CSA.

Ironically, regardless of whether TCEQ treats Midland and Odessa as separate units for purposes of Table D-2, the end result is the same: two ozone monitors must be added in the area. That is because both the Midland MSA and the Odessa MSA have more than 50,000 people. As explained, neither city has an existing ozone monitor. As such, TCEQ must look to data that is available at the regional scale—which, pursuant to EPA’s regulations, may require looking at “areas with dimensions of as much as hundreds of kilometers.” *See* 40 C.F.R. Part 58, App. D, ¶ 4(c)(3). The nearest monitor is in Hobbs, New Mexico, which, like Midland-Odessa, is located in the Permian Basin region. The most recent, 3-year design value for this monitor is 0.070 ppm—100 percent of the 2015 eight-hour ozone NAAQS.³⁷ Absent some other data for Midland-Odessa, TCEQ must use this as the best estimate available for Midland-Odessa’s design value. If TCEQ does have other information about the likely design value, it must provide this information and allow the public the opportunity to comment on it.

³⁷ <https://www.env.nm.gov/air-quality/o3-initiative/>.

Applying Table D-2, the result is the same regardless of whether the cities are treated as belonging to the same MSA or not. Table D-2 provides that two monitors are required for a metropolitan area with a population greater than 350,000 if the most recent 3-year design value is greater than or equal to 85 percent of any ozone NAAQS. The best available estimate for Midland-Odessa's design value comes from the monitor in Hobbs, which has a 3-year ozone design value of 0.070 ppm—100 percent of the 2015 eight-hour ozone NAAQS. Accordingly, the best available estimate indicates that Midland-Odessa's ozone levels exceed 85 percent of an ozone NAAQS. Notably, a recent study analyzing satellite observations of the Permian Basin from 2018-2019 estimated that methane emissions from oil and natural gas production in the Basin are approximately $2.7 \pm 0.5 \text{ Tg a}^{-1}$, more than two times higher than bottom-up inventory-based estimates, and equivalent to 3.7% of the gross gas extracted in the Permian.³⁸ Because VOCs are co-emitted with methane during oil and gas production, this study suggests significant VOC emissions.

If the cities are treated as separate MSAs, each with a population greater than 50,000 but less than 50,000, the result is the same. Table D-2 requires cities with more than 50,000 people to have at least one ozone monitor if the most recent 3-year design value is greater than or equal to 85 percent of any ozone NAAQS. Again, the best available estimate for Midland-Odessa's design value exceeds 85 percent of the eight-hour ozone NAAQS. Accordingly, if this approach is used, TCEQ would be required to install one ozone monitor in Midland and a second in Odessa.

B. TCEQ must monitor and model sulfur dioxide emissions in the Permian Basin.

Last year, in our May 21, 2019, Comments on TCEQ's 2019 AMNP, we presented you with the unrefuted fact that, according to TCEQ's Emission Events data, Permian Basin operators reported more than 27 million pounds, or 13,500 tons, of sulfur dioxide emissions from flaring sour gas. We also provided you with a report showing that these unauthorized releases of SO₂ likely cause and contribute to exceedances of EPA's health-based sulfur dioxide NAAQS (1-hour standard) in Ector County.³⁹ The nearest SO₂ monitor is about 60 miles from Odessa, Ector County.⁴⁰ Thus, the existing monitoring network is plainly inadequate to assess SO₂ levels in Ector County, to say nothing of other portions of the Permian Basin. TCEQ must model SO₂ levels in Ector County and the remainder of the Permian Basin and install monitors at expected SO₂ hotspots to serve the purposes of air pollution monitoring. If those modeling and monitoring efforts reveal violations of the NAAQS, TCEQ must take action to fix them, including requesting designation as nonattainment if the data so show.

In addition to the TCEQ Emission Event data, sources under the Texas Railroad Commission's ("RRC") jurisdiction release even more air pollution. Based on the most recent

³⁸ Ex. 5, Zhang, et al, *Quantifying methane emissions from the largest oil-producing basin in the United States from space*, Science Advances (April 22, 2020), available at <https://advances.sciencemag.org/content/6/17/eaaz5120>.

³⁹ See Env'tl. Integrity Project, *Sour Wind in West Texas at 2, 10-12* (May 9, 2019), available at: <https://www.environmentalintegrity.org/wp-content/uploads/2019/05/West-Texas-Air-Pollution-Report-5.9.19.pdf>.

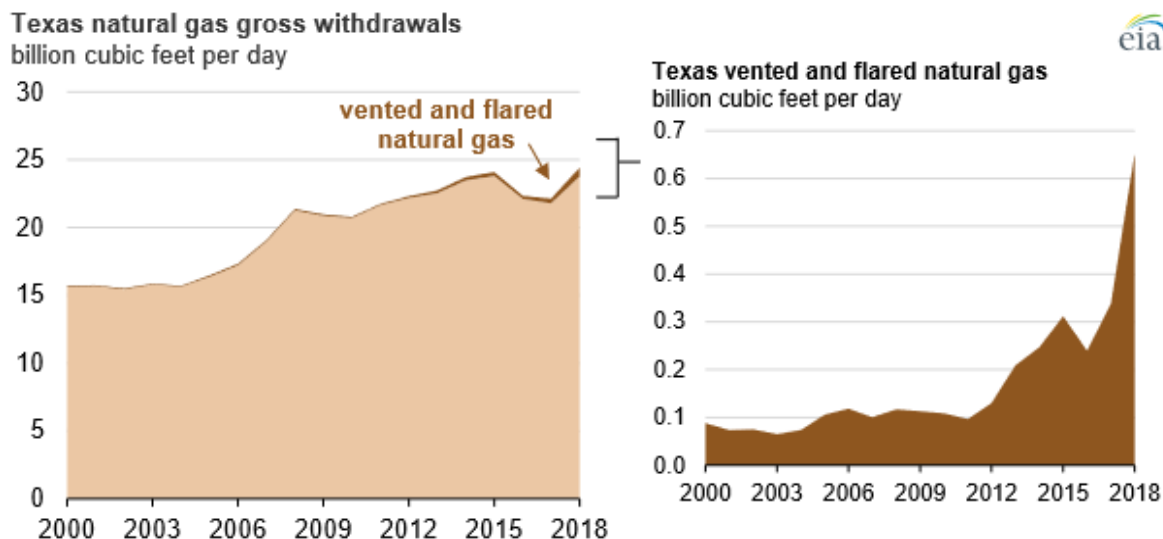
⁴⁰ *Id* at 2, 9.

available data from the Texas Railroad Commission, oil and gas drillers likely flared more than 48,000 TONS of sulfur dioxide into the air. We urge the TCEQ to revise the Plan to include monitoring of air quality around oil and gas production, where rampant flaring and venting is well-documented. The current oil bust only heightens the need for monitoring.

C. Railroad Commission flaring data reinforces the need for enhanced Sulfur Dioxide monitors in the Permian Basin.

Currently, there is only one SO₂ monitor in Big Spring Texas and one PM Monitor in Odessa. There are no ozone monitors in the area despite the relatively large population, vast truck traffic and oil and gas activities. While we believe the most immediate need are additional VOC, SO₂ and Hydrogen Sulfide monitors, placing an ozone monitor in the Odessa-Midland area and an additional PM monitor are also important.

According to the U.S. Energy Information Administration, in 2018, vented and flared gas from oil and gas wells in Texas reached over 0.65 Bcf/d, nearly double the 2017 level:



Source: U.S. E.I.A., available at <https://www.eia.gov/todayinenergy/detail.php?id=42195>

This rise in flared and vented gas tracks the rise in the Texas Railroad Commission’s granting of flaring permits (or Rule 32 flaring exceptions). Flaring permits approved by RRC increased from slightly more than 300 in fiscal year 2010 to nearly 5,500 in fiscal year 2018. As Texas Railroad Commissioner Ryan Sitton has documented, oil and gas producers are currently flaring gas roughly at levels similar to those seen in the 1950s.⁴¹

The current oil bust that is a result of over-production and that has now been severely compounded by the Covid-19 pandemic, makes monitoring in the oil and gas production regions of Texas all the more urgent. All the publicly available data for 2020 indicate that

⁴¹ See Table 1, page 3, available at: <https://www.rrc.state.tx.us/media/56420/sitton-texas-flaring-report-q1-2020.pdf>.

flaring at upstream oil and gas sites has not yet declined. In fact, TCEQ-regulated operators in the Permian Basin continue to file Emission Events reports which show continued flaring as a result of upsets and unplanned maintenance. At the same time, Railroad Commission-regulated sources continue to seek exceptions to that agency's flaring rules as a matter of routine practice.

Moreover, air monitoring in the oil and gas fields will be even more important during a severe oil bust, because air pollution could increase as cash-strapped operators defer maintenance and lay off workers. In addition, we now face heightened risk from volatile organic compounds and hydrogen sulfide emissions resulting from leaks and from orphaned and abandoned wells.

Therefore, we now have an even greater need for monitoring in the oil and gas producing areas than we did last year, as emissions from leaks (venting) and abandoned wells are expected to rise while flaring is still a major source of emissions.

As you know, TCEQ requires operators to report their annual point source emissions inventories. But oil and gas drillers who are regulated by the Railroad Commission do not report directly to TCEQ. Instead, oil and gas drillers report the annual amount of gas that is vented or flared at each oil and gas lease to the Railroad Commission, and then TCEQ obtains this data and uses it to develop area source emission estimates. These emissions are required to be included in the State's Emissions Inventory, and are also included in the State Implementation Plan for achieving and maintaining the national ambient air quality standards.

TCEQ reports detailing the oil and gas emissions estimates, i.e., TCEQ's upstream oil and gas "area source" emissions estimates do not include sulfur dioxide emissions from the RRC-regulated flares. TCEQ's estimates do include emissions from other, much smaller sources at well sites, including drilling rig engines, tanks, and other equipment. But emissions from the flares themselves – the source of most combustion pollution in the oil fields – is not included in the TCEQ's emissions estimates.

To demonstrate the magnitude of the oil and gas well flaring emissions that TCEQ has not considered in drafting the 2020 Annual Monitoring Network Plan, we reviewed the most recent available RRC flare data, which covered the period from October 2018 through September 2019,⁴² for the Railroad Commission's District 8 (which covers a portion of the Permian Basin including Ector and Midland Counties). We relied on the Railroad Commission's Hydrogen Sulfide Fields Concentrations Listings for an average hydrogen sulfide concentration per field.⁴³ We acknowledge that we do not have access to the industry data that TCEQ and the Railroad Commission have, notably the hydrogen sulfide content of all the gas flared, which drives the sulfur dioxide emissions estimates. Therefore, our emission estimates rely on the Railroad Commission's published Fields Concentrations Listings for an average hydrogen sulfide concentration per field. Should TCEQ, RRC, or industry object to our methodology, we

⁴² TX RRC Production Report Queries, available at: <http://webapps.rrc.texas.gov/PR/publicQueriesMainAction.do>.

⁴³ TX RRC Hydrogen Sulfide (H₂S) Fields & Concentrations Listings, available at: <https://www.rrc.state.tx.us/oil-gas/research-and-statistics/field-data/h2s/>.

welcome your critique and invite you to provide your estimate of sulfur dioxide emissions from these oil and gas well flares. We assumed 98% conversion of hydrogen sulfide to sulfur dioxide, which is commonly used in the industry, although we acknowledge that 100% destruction of hydrogen sulfide is typically expected.

We used the following standard engineering calculations to determine how much hydrogen sulfide and sulfur dioxide oil and gas drillers emitted in the Railroad Commission District 8 over the one-year study period:

*Flared Calculations:*⁴⁴

$$\begin{aligned} \text{tons H}_2\text{S} &= \frac{\text{field concentration H}_2\text{S ppm}}{1,000,000 \text{ ppmv}} \times \text{Volume Vented (MCF)} \times 1,000 \left(\frac{\text{scf}}{\text{MCF}} \right) \\ &\times \frac{34.1 \text{ molar weight H}_2\text{S} \frac{\text{lb}}{\text{lb-mol}}}{379.3 \frac{\text{scf}}{\text{mol}}} \times \frac{\text{ton}}{2,000 \text{ lb}} \\ &\times 0.02 \text{ (gas not combusted)} \end{aligned}$$

$$\begin{aligned} \text{tons SO}_2 &= \frac{\text{field concentration H}_2\text{S ppm}}{1,000,000 \text{ ppmv}} \times \text{Volume Vented (MCF)} \times 1,000 \left(\frac{\text{scf}}{\text{MCF}} \right) \\ &\times \frac{34.1 \text{ molar weight H}_2\text{S} \frac{\text{lb}}{\text{lb-mol}}}{379.3 \frac{\text{scf}}{\text{mol}}} \times \frac{64.1 \text{ molar weight SO}_2 \frac{\text{lb}}{\text{lb-mol}}}{34.1 \text{ molar weight H}_2\text{S} \frac{\text{lb}}{\text{lb-mol}}} \\ &\times \frac{\text{ton}}{2,000 \text{ lb}} \times 0.98 \text{ (gas combusted)} \end{aligned}$$

*Vented Calculation:*⁴⁵

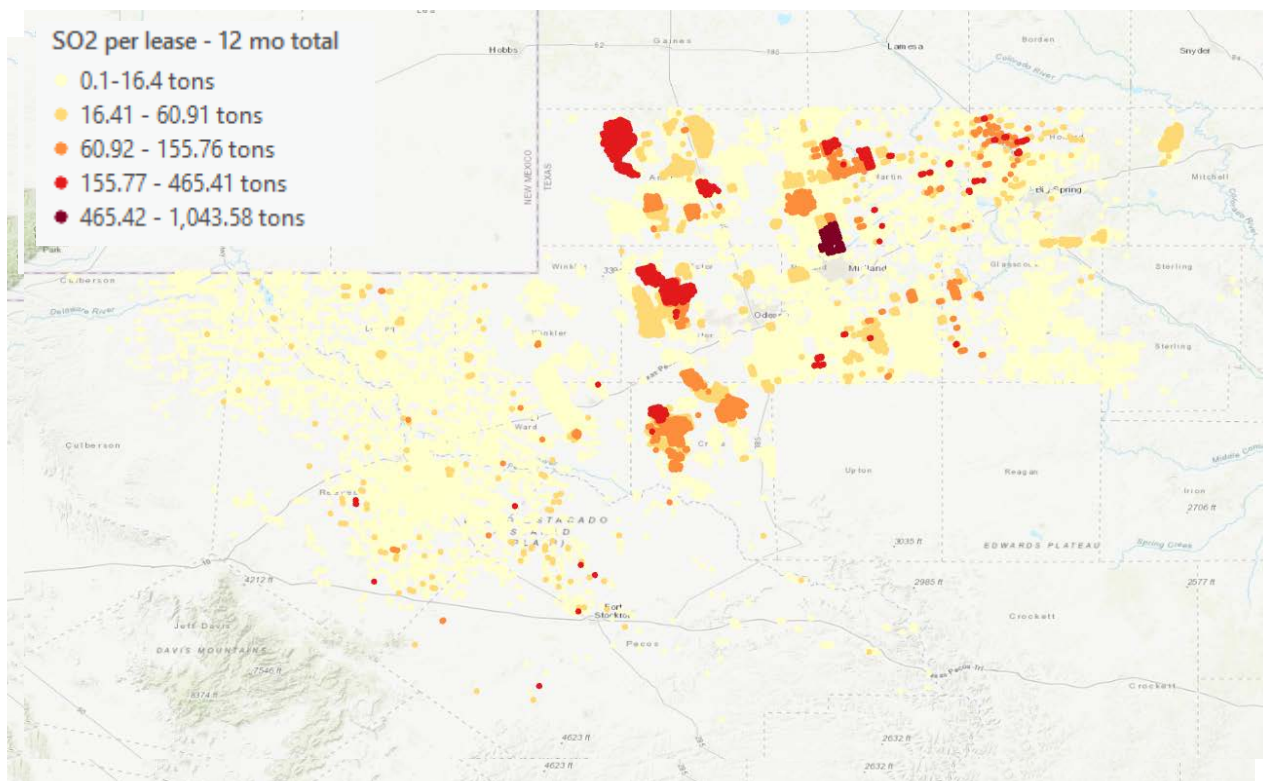
$$\begin{aligned} \text{tons H}_2\text{S} &= \frac{\text{field concentration H}_2\text{S ppm}}{1,000,000 \text{ ppmv}} \times \text{Volume Vented (MCF)} \times 1,000 \left(\frac{\text{scf}}{\text{MCF}} \right) \\ &\times \frac{34.1 \text{ molar weight H}_2\text{S} \frac{\text{lb}}{\text{lb-mol}}}{379.3 \frac{\text{scf}}{\text{mol}}} \times \frac{\text{ton}}{2,000 \text{ lb}} \end{aligned}$$

Based on these calculations using the publicly available data, oil and gas operators in RRC District 8 flared roughly 141 BCF of gas between October 2018 and September 2019, and vented about 3,213 thousand cubic feet during that period. Flaring this much gas, much of it high in hydrogen sulfide content, would have resulted in an estimated 48,459 tons of SO₂ and 1,466 tons of H₂S. Venting and flaring on oil and gas leases located in Martin and Howard

⁴⁴ *Id.*

⁴⁵ TCEQ, Air Permits Division, New Source Review (NSR) Emission Calculations, available at: https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss_calc_flares.pdf.

counties likely resulted in the highest estimated emissions of SO₂ and H₂S, as shown in the following map:



This new information demonstrates that oil and gas drillers regulated by the Texas Railroad Commission flared even more pollution than the TCEQ-regulated sources that report Emission Events.

We appreciate that the TCEQ has to make hard choices about where to measure air quality in Texas. As Texas now faces its most recent – and hopefully the last – oil bust, we urge you to take action to protect air quality in the oil and gas producing regions of the state. Permian Basin residents, especially, need your protection due to the massive and dangerous emissions of sulfur dioxide and hydrogen sulfide prevalent in that region.

IV. TCEQ's SO₂ monitoring network is insufficient to support compliance with the 1-Hour SO₂ NAAQS.

To reflect the most current science on SO₂ impacts, in 2010, EPA set the new ambient standard at 75 ppb (196 µg/m³) as an hourly average.⁴⁶ Due both to its shorter averaging time (1-hour versus 24-hour) and significantly lower allowable concentration (75 ppb versus 140 ppb),

⁴⁶ 40 C.F.R. § 50.17(a); Primary NAAQS for Sulfur Dioxide, 75 Fed. Reg. 35,520, 35,520-21 (June 22, 2010).

the new standard is considerably more stringent than the prior SO₂ NAAQS. In adopting the 1-hour SO₂ NAAQS, EPA recognized the “strong source-oriented nature of SO₂ ambient impacts.” 75 Fed. Reg. at 35,370. Unlike regional pollution problems, short term SO₂ air pollution problems are caused by single sources and occur in the near vicinity of that source. Thus, EPA concluded that the appropriate methodology for purposes of determining compliance, attainment, and nonattainment with the new NAAQS is *modeling*, since it would be virtually impossible to site sufficient monitors around each individual source of SO₂ pollution. *See* 75 Fed. Reg. at 35,551 (describing dispersion modeling as “the most technically appropriate, efficient, and readily available method for assessing short-term ambient SO₂ concentrations in areas with large point sources.”). EPA also determined in the final SO₂ NAAQS rule that it did “not expect monitoring to become the primary method by which ambient concentrations are compared to the new 1-hour SO₂ NAAQS.”⁴⁷

Aside from the difficulties EPA has recognized are inherent in using monitoring to determine compliance with the SO₂ NAAQS at each individual source in the country, Texas’s monitoring and modeling plan is insufficient to demonstrate compliance with the NAAQS, for several reasons. First, Texas was required, but failed, to comply with EPA’s Data Requirements Rule for all sources that emit more the 2,000 tons per year threshold, and must therefore use *modeling* to determine compliance with those sources. Second, monitors alone cannot accurately evaluate compliance with the SO₂ NAAQS. Third, TCEQ’s proposed SO₂ monitoring network is inadequate to determine whether some of the largest pollution sources are causing unhealthy levels of SO₂. Fourth, even if the monitoring network was adequate, TCEQ has arbitrarily and unlawfully failed to take action to address demonstrated monitored violations of the NAAQS. Finally, for the sources that did rely on modeling to demonstrate compliance with the NAAQS, TCEQ has failed to properly address increases in emissions or explain how the area is meeting the NAAQS.

A. Texas was required to comply with the Data Requirements Rule for all sources that emit more the 2,000 tons per year threshold.

EPA’s Data Requirements Rule (“DRR”) requires TCEQ to provide data to characterize air quality around many major sources of SO₂.⁴⁸ In particular, the rule requires the state to characterize the air quality around sources that emit 2,000 tons per year (tpy) or more of SO₂ and that are not located in an area already designated nonattainment. To demonstrate compliance with the 2010 SO₂ NAAQS, Texas submitted modeling data for only seven of the 25 sources subject to the Data Requirements Rule.⁴⁹ Texas now suggests that it can demonstrate attainment for the other sources through monitoring. But the final DRR provides:

⁴⁷ 75 Fed. Reg. at 35,551.

⁴⁸ Data Requirements Rule for the 2010 1-Hour Sulfur Dioxide (SO₂) Primary National Ambient Air Quality Standard (NAAQS), 80 Fed. Reg. 51,052 (Aug. 21, 2015) (codified at 40 C.F.R. § 51, Subpart BB).

⁴⁹ 2020 Air Monitoring Network Plan, App’x F, Sulfur Dioxide Ongoing Data Requirements Annual Report.

each source area subject to requirements for air quality characterization, the air agency shall notify the EPA *by July 1, 2016*, whether it has chosen to characterize peak 1- hour SO₂ concentrations in such area through ambient air quality monitoring; characterize peak 1-hour SO₂ concentrations in such area through air quality modeling techniques; or provide federally enforceable emission limitations by *January 13, 2017*, that limit emissions of applicable sources to less than 2,000 tpy, in accordance with paragraph (e) of this section, or provide documentation that the applicable source has permanently shut down.

40 C.F.R. § 51.1203 (emphasis added). Because the state failed to meet those deadlines for demonstrating attainment through monitoring, the state was required to demonstrate attainment through modeling for some of the largest sources of SO₂ pollution in the state, like Martin Lake and Harrington Station, both of which appear to be violating the NAAQS, as discussed below.

B. Monitors alone cannot accurately evaluate compliance with the SO₂ NAAQS.

As EPA explained in the final 2010 SO₂ NAAQS Rule, “even if monitoring does not show a violation,” that absence of data is not determinative of attainment status absent modeling, and that monitoring in general is “less appropriate, more expensive, and slower to establish.”⁵⁰ TCEQ’s plan to deploy a more extensive monitoring network as part of the NAAQS implementation process suffers from a number of drawbacks that render this approach too slow, too impractical, and too ineffective for monitoring to replace modeling as the primary means of implementing the 1-hr SO₂ NAAQS.

First, a single monitor may not be sufficient to characterize SO₂ air quality or to determine compliance with the 1-hr SO₂ standard. For any area with fewer than three SO₂ monitors positioned to capture peak concentrations from a large SO₂ source, monitoring will be inadequate to establish 1-hr SO₂ compliance. If only one monitor is located near a large source, that source has a clear invitation to game the system by, for example, slightly adjusting its stack or operating parameters to ensure that high impacts will not occur at the one monitor.

Second, even if TCEQ were to have the resources to deploy a sufficient number of monitors, the state may not be able to locate a monitor where the modeling indicates the highest impacts are likely to occur for technical reasons, such as an inability to gain physical or legal access to the site, or lack of access to power supply.⁵¹

Third, even if a sufficiently extensive monitoring network were established, full implementation of the NAAQS through monitoring would take up to a decade, which presents

⁵⁰ 75 Fed. Reg. at 35,551.

⁵¹ An inability to place monitors at appropriate locations is another argument in favor of a modeling approach, as EPA has long recognized: “Although siting criteria may preclude the placement of ambient monitors at certain locations, this does not preclude the placement of model receptors at these sites.” U.S. EPA 1994 SO₂ Guideline Document at 2-6, *available at* http://www.epa.gov/ttn/naaqs/aqmguid/collection/cp2/19940201_oaqps_epa-452_r-94-008_so2_guideline.pdf [hereinafter, “1994 SO₂ Guideline Document”].

unacceptable risk to vulnerable Texans. Not only would this delay be a disservice to the public, it would also be a disservice to the regulated entities, especially owners of coal-fired power plants, which must make critical decisions now about future operations. Many of these sources are already in distress due to a number of factors, including low natural gas prices, declining demand for energy, an increasing availability of zero- or low- SO₂ generating sources, and the age of the existing coal-fired power plant fleet. Evaluating and achieving compliance through more expeditious and cost-effective air dispersion modeling can thus provide the regulatory clarity needed to make prudent decisions about those plants now that reliance on increased monitoring alone cannot.

Finally, EPA itself has acknowledged that, for medium to large sources, monitoring is “less appropriate, more expensive, and slower to establish.”⁵² Moreover, the cost of modeling compliance with the SO₂ NAAQS is modest, particularly in comparison to the costs of installing and operating an adequate SO₂ monitoring network. This is particularly true where, as here, the vast majority of SO₂ pollution comes from a relatively small group of very large sources. If TCEQ does not have sufficient in-house modeling resources, the agency would incur some costs charged by third-party modelers, but even these costs are comparatively nominal. Independent third-party modelers could conduct AERMOD time series modeling for SO₂ for less than \$5,000 per source, and in most instances less than \$3,000. In stark contrast, simply purchasing and installing a single monitor can cost upwards of \$100,000 per site. By focusing on modeling the sources subject to the DRR, TCEQ could ensure that the protections promised by the NAAQS are met in a cost-effective and expeditious manner.

C. TCEQ’s proposed SO₂ monitoring network is inadequate to determine whether some of the largest pollution sources are causing unhealthy levels of SO₂.

The 25 Texas coal-burning power plants subject to the Data Requirements Rule emit more sulfur dioxide than all of the sources in Arkansas, Louisiana, Oklahoma, Arizona, Colorado, Kansas, New Mexico, and Mississippi, *combined*.⁵³ Nevertheless, TCEQ operates SO₂ ambient air monitors in the vicinity of only nine of those plants.⁵⁴ And four of those plants—Big Brown, Monticello, Sandow, and J.T. Deely—have ceased operations. By focusing on a subset of sources that is responsible for only a fraction of Texas’s staggering SO₂ emissions, TCEQ undermines the core purposes of EPA’s monitoring regulations: provide the public with accurate data on air pollution.⁵⁵

The agency’s 2020 monitoring plan also fails (as did the 2019 plan) to demonstrate that the current SO₂ monitors are placed in a location and manner that captures the peak predicted emissions concentrations, as required by EPA regulations.⁵⁶ By way of example, air dispersion modeling conducted according to EPA’s SO₂ modeling protocol demonstrates that TCEQ’s

⁵² 75 Fed. Reg. at 35,570.

⁵³ *Id.*

⁵⁴ TCEQ has SO₂ monitors near Harrington, Gibbons Creek, Big Brown, Martin Lake, Welsh, J.K. Spruce, J.T. Deely, Monticello, and Sandow.

⁵⁵ 40 C.F.R. Pt. 58 App. D ¶ 1.1.

⁵⁶ *Id.* at ¶ 1.1(c).

monitoring placements for the Martin Lake power plant does *not* capture peak predicted impacts from that source. Instead, the modeling demonstrates that the highest SO₂ concentrations—concentrations that violate the 2010 SO₂ NAAQS—caused by emissions from Martin Lake are in significantly different areas than the existing monitors. *Compare* Ex. 1 at 1-2 with 2019 Air Monitoring Plan App'x B at B-37 (location of the Martin Lake monitor at 32.2778 N, -94.5708 W). Indeed, air dispersion modeling indicates that location of peak impacts from Martin Lake are more than a half mile from TCEQ's location. Similarly, air dispersion modeling conducted according to EPA protocol demonstrates that the location of peak impacts for the Harrington power plant is also approximately a half mile away from TCEQ's monitor location. *Compare* Ex. 2 at 3-4 with 2019 Air Monitoring Plan App'x B at B-1 (location of the Harrington monitor at 35.3165 W, -101.7418 N).

EPA regulations require TCEQ to place monitors in a location that will capture the peak pollution concentrations caused by a particular source.⁵⁷ The attached modeling, which EPA concluded was conducted according to agency protocol and used recent actual emissions,⁵⁸ demonstrates that TCEQ failed to site monitors in locations with the highest predicted concentration of SO₂ pollution from the respective sources.

D. TCEQ has unlawfully failed to take action to protect the public from *monitored* violations of the NAAQS.

Even if TCEQ correctly sited its SO₂ monitors in locations with the highest predicted concentration of SO₂ pollution (and it did not), the agency's own *monitoring* data indicates that air quality at multiple monitors located near very large coal-burning power plants is regularly exceeding the health-based SO₂ NAAQS. In fact, TCEQ monitoring data demonstrates that the design values for the air quality monitors near Martin Lake in Rusk County and Harrington Station in Potter County are violating the 2010 standard.

The 2010 SO₂ NAAQS requires that the three-year average of the 99th percentile 1-hour daily maximum SO₂ concentration—*i.e.*, the average of the fourth highest maximum one-hour reading for three years—must not exceed 75 ppb. 40 C.F.R. § 50.17(b). Applying this standard, TCEQ's Martin Lake monitor will have a minimum 2017-2019 design value of 82.03 ppb, well above the NAAQS.⁵⁹ To calculate the design value, Sierra Club averaged the fourth-highest 1-hour daily maximum values from available data for 2017, 2018, and 2019. The fourth-highest value for 2018 was 109.1 ppb. The fourth-highest value for 2019 was 114.8 ppb. And although the monitor operated for just 32 days of 2017, the fourth-highest reading for that period was 22.2 ppb. The average of 109.1 ppb, 114.8 ppb, and 22.2 ppb is 82.03 ppb,⁶⁰ making clear that the

⁵⁷ *Id.* at ¶ 1.1.

⁵⁸ *See generally* 81 Fed. Reg. 89,870 (Dec. 13, 2016).

⁵⁹ *See* Ex. 3 (CAMS 1082 monitoring data for Tatum CR 2181d Martin Creek Lake, EPA Site Number: 484011082, available at: https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=report.view_site&CAMS=1082).

⁶⁰ 109.1 ppb (2018 fourth highest hourly reading) + 114.8 ppb (2019 fourth highest hourly reading) + 22.2 ppb (2017 fourth highest hourly reading) = 246.1 ppb. 246.1 ppb ÷ 3 = 82.03 ppb.

area is failing the NAAQS. Significantly, the 82.03 ppb design value for 2017-2019 is almost certainly conservative because the Martin Lake monitor was not operable until November 2017, and thus the 82.03 ppb design value essentially assumes *zero* emissions for the first ten months of 2017. It is likely the design value for 2017 would have been comparable to the other two years (i.e., greater than 100 ppb) if the monitor had operated for the entire year.

Monitoring data is now available through April 27, 2020, and already yields a fourth-highest 1-hour daily maximum value of **61.6 ppb** for the first quarter of 2020.⁶¹ Paired with the fourth-highest 2018 and 2019 values of **109.1 ppb** and **114.8 ppb**,⁶² respectively, the newly-available data thus yields a minimum 2018-2020 design value of **95.2 ppb**—again, well above the NAAQS of 75 ppb. This design value is likewise extremely conservative in that it assumes no emissions for the remainder of the coming year. The fourth-highest 1-hour daily maximum value for 2020 may well exceed 61.6 ppb once all twelve months of monitoring data is available. Indeed, in just the first four months of 2020, the monitor has already (significantly) exceeded the 75 ppb health-based safeguard on three separate occasions—hitting 106.1 ppb on February 3; 86.8 ppb on February 9; and 83.9 ppb on March 1. Given that Martin Lake typically operates at a higher capacity factor in the summer months, monitored SO₂ levels could easily exceed 75 ppb yet again this year. Moreover, the 61.6 ppb value likely underestimates even year-to-date concentrations because, as noted above, the Martin Lake monitor is not sited so as to capture peak hourly SO₂ impacts.

Air quality in the area surrounding Xcel Energy’s coal-burning Harrington Station similarly fails to meet EPA’s health-based SO₂ standard. In fact, air quality surrounding Harrington is significantly worse. TCEQ’s monitor indicates that in 2018, hourly SO₂ concentrations near the Harrington power plant were as high as 209.1 ppb—nearly *triple* the maximum concentration EPA has determined is safe to breathe.⁶³ The 99th percentile in 2018 was 132.8 ppb. The year before, in 2017, the 99th percentile was somewhat lower—114 ppb. And in 2019, the fourth highest hourly reading was 95.4, meaning that the 2017-2019 design value was 114.2—nearly double the NAAQS. Thus, even though these monitors do not actually capture the highest SO₂ concentrations near either plant, they indicate that the areas surrounding both Martin Lake and the Harrington power plants are violating the health-based NAAQS, exposing those communities to significant risk.

If air quality monitoring in 2019 continues to demonstrate violations of the standard, TCEQ must take steps to redesignate those areas as being in nonattainment with the 2010 SO₂ NAAQS. 40 C.F.R. § 51.1205(d); *see also* 30 Tex. Admin. Code § 101.21 (“The National Primary and Secondary Ambient Air Quality Standards as promulgated pursuant to section 109

⁶¹ See Ex. 3 (CAMS 1082 Monthly Monitoring Data, Tatum CR 2181d Martin Creek Lake C1082 - EPA Site: 484011082, available at: https://www.tceq.texas.gov/cgi-bin/compliance/monops/monthly_summary.pl?cams=1082).

⁶² Newly-available data from September through December 2019 confirms 114.8 ppb as the fourth-highest daily maximum value for 2019.

⁶³ See Ex. 4 (CAMS 1077 Monthly Monitoring Data, Amarillo Xcel El Rancho, EPA Site Number: 483751077, available at: https://www.tceq.texas.gov/cgi-bin/compliance/monops/monthly_summary.pl?cams=1077).

of the Federal Clean Air Act, as amended, will be enforced throughout all parts of Texas.”). At a minimum, TCEQ must take appropriate action, including requiring adoption of enforceable emission limits to ensure attainment of the 2010 SO₂ NAAQS near both power plants, or recommend that EPA redesignate the areas to nonattainment. Sierra Club also urges TCEQ to install additional air quality monitors in those areas to properly characterize ambient air quality near those plants and to inform the affected communities.

E. TCEQ should conduct additional modeling to reevaluate compliance with the SO₂ NAAQS at W.A. Parish, San Miguel, and Coletto Creek, or adopt enforceable emissions limitations to ensure attainment.

In its Sulfur Dioxide Ongoing Data Requirements Annual Report, TCEQ notes that total SO₂ pollution from the San Miguel Electric Plant, W.A. Parish Electric Generating Station, and Coletto Creek Power Station have increased significantly since 2019.⁶⁴ In fact, in each of the past four years, each plant has increased its overall SO₂ emissions.

Under 40 C.F.R. §51.1205(b), TCEQ is required to provide EPA with an assessment of the cause of such emissions increase and a recommendation as to “whether additional modeling is needed to characterize air quality in any area to determine whether the area meets or does not meet the 2010 SO₂ NAAQS.” Although TCEQ acknowledges the emissions increases, the agency asserts that no further evaluation is needed because “the original designation modeling evaluated higher average emissions” for W.A Parish and Coletto Creek. Since higher emissions were evaluated, the original designation modeling provides “reasonable assurance” that the areas continue to meet the 2010 one-hour SO₂ primary NAAQS. For San Miguel, TCEQ acknowledges that recent average emissions exceed the levels used for designation modeling by 151 tons per year, but the agency asserts that “this small increase of approximately 1.7 percent of SO₂ emissions would not be expected to change the attainment/unclassifiable designation determined from the original modeling.”⁶⁵

That conclusory explanation for refusing to conduct additional modeling or monitoring is insufficient. As an initial matter, the modeling analyses supporting the original area designations for W.A. Parish, Coletto Creek, and San Miguel are not actually in TCEQ’s monitoring network rulemaking record. Moreover, those air dispersion modeling analyses do not actually reflect total annual emissions for any of the three plants. Instead, the reports reflect emission rates that each company evaluated to demonstrate compliance with the *hourly* standard.

In any event, even if the earlier modeling evaluated higher total annual emissions for each plant, that does not ensure compliance with the *one-hour* NAAQS. In setting the 2010 standard, EPA explicitly recognized that short-term exposure to SO₂ concentrations above 75 ppb were harmful to human health. Accordingly, the 2010 standard imposes a shorter averaging time (1-hour versus 24-hour), which is designed to protect against dangerous short-term exposure. TCEQ’s facile observation that total annual emissions are lower than those modeled

⁶⁴ 2020 Air Monitoring Network Plan, App’x F, Sulfur Dioxide Ongoing Data Requirements Annual Report.

⁶⁵ *Id.*

period does not adequately protect the surrounding communities against periods of high utilization and the associated concentration of SO₂ pollution from these essentially uncontrolled coal plants. And TCEQ's reference to total annual emissions does not ensure—nor is it even relevant to—compliance with the *hourly* standard. TCEQ should conduct additional modeling, based on the most-recent three years of actual hourly emissions and meteorological data to ensure compliance with the NAAQS at San Miguel, W.A. Parish, and Coletto Creek. Alternatively, the agency should impose more stringent emissions limitations under 40 C.F.R. § 1204 to ensure compliance with the standard.

V. **TCEQ Should Install Additional Monitors in El Paso.**

Western Refining Company, L.P., recently obtained TCEQ's approval to *double* the allowable amount of hydrogen cyanide emissions from its fluidized catalytic cracking unit. Residents of neighboring communities are currently being exposed to HCN emissions in amounts that can be expected to cause significant public health impacts. Modeling conducted in connection with Western Refining's application shows numerous exceedances of the one-hour Effects Screening Level for HCN at the fence-line directly north of the Sambrano neighborhood. To our knowledge, no health impact study has been conducted for members of this neighborhood, but this modeling raises serious concerns about potential health impacts on residents. TCEQ should require Western Refining to implement real-time emissions monitoring at the fence-line, so that residents and emergency personnel can be alerted of emissions exceedances in time to take appropriate response measures. TCEQ should also require Western Refining to conduct a health impact study of the Sambrano neighborhood to determine if residents are suffering adverse health effects as a result of HCN or other emissions.

TCEQ should also deploy a near-road NO₂/CO monitor at Zavala Elementary School. EPA regulations require “one near-road NO₂ monitoring station in each [core-based statistical area] with a population of 1,000,000 or more persons to monitor a location of expected maximum hourly concentrations sited near a major road with high [annual average daily traffic] counts” 40 C.F.R. Part 58, App. D, Section 4.3.2(a). In selecting the appropriate site for this station, a monitoring agency must rank all road segments and “identify[] a location or locations adjacent to those highest ranked road segments, considering fleet mix, roadway design, congestion patterns, terrain, and meteorology, where maximum hourly NO₂ concentrations are expected to occur” *Id.* If there are multiple acceptable candidates, the agency “shall consider the potential for population exposure” as a tie-breaking factor. *Id.* The monitor should be designed to reflect “the maximum expected NO₂ concentration . . . [at] the microscale.” *Id.*, section 4.3.5(a). A CO monitor must generally be collocated with any near-road NO₂ site. *Id.*, section 4.2(b).

El Paso does not currently have a near-road monitoring station, and TCEQ lists the required number of near-road monitors as zero in Appendix D of this proposal. TCEQ has misread the regulations. The El Paso-Las Cruces CBSA, which includes El Paso and Hudspeth Counties, Texas, and Dona Ana County, New Mexico, has a population in excess of 1,000,000.⁶⁶ This understates the population using this area, however, as many residents of Ciudad Juarez (a

⁶⁶ https://www.epa.gov/sites/production/files/2017-12/documents/nm_tsd_final.pdf at page 15; https://www2.census.gov/geo/maps/metroarea/stcbsa_pg/Feb2013/cbsa2013_TX.pdf

city with over 1.3 million residents) use the roadways near Zavala. At minimum, TCEQ must install one near-road monitor in this CBSA.

A natural candidate for such a monitor would be Zavala Elementary School. The school is located directly adjacent to the Interstate 110 spur, which connects Interstate 10 with the Cordova International Bridge. This spur has an AADT value of 70,997 in 2017, while I-10 itself—less than a mile away—had an AADT value of over 175,000.⁶⁷ Heavy-duty trucks—many of which are Mexican-domiciled and thus not compliant with U.S. emission standards—often idle on this spur for an extended period of time. Monitoring the emissions at this location would provide important data to residents in the Chamizal community who are concerned about the impact of these vehicle emissions on their children.

VI. Conclusion

For the reasons discussed above, TCEQ's 2020 monitoring plan is inadequate and will not properly characterize peak pollution concentrations in many of the most vulnerable communities across the state. To protect the health of Texas citizens, TCEQ must enhance its air monitoring network as discussed above. Commenters further request that TCEQ remand the proposal, publish the plan in both English and Spanish, and allow the public to provide additional comment on the agency's network plan through the notice and comment rulemaking process.

Thank you for the opportunity to comment. If you have any questions or need additional information, please do not hesitate to contact us.

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http://www.arcgis.com/home/webmap/viewer.html?url=https://services.arcgis.com/KTcxiTD9dsQw4r7Z/ArcGIS/rest/services/TxDOT_AADT_Annuals_viewer/FeatureServer/0&source=sd