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 (O_3) 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 O_3 monitor for the entire MSA for several months. The CAC commented that the current number of Austin MSA O_3 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 O_3 monitors in the Austin MSA, based on the most recent MSA population estimates and the three-year O_3 design value, and currently operates two O_3 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 O_3 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 O_3 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 O_3 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 O_3 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 O_3 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 (NO_2) 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 NO_2 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 O_3 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 O_3 monitoring requirements are based on the most recent MSA population estimates and the area three-year O_3 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 O_3 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 O_3 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 O_3 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 O_3 monitors are required for MSAs with populations of 350,000 or greater. The TCEQ meets and exceeds the federal O_3 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 O_3 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 O_3 is not emitted directly into the air but is created by chemical reactions in the presence of sunlight, therefore, there are no O_3 sources and all FYA O_3 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 O_3 monitor and one sulfur dioxide (SO_2) 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 SO_2 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 SO_2 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 O_3 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 O_3 would be characterized in high concentration areas, EPA adopted MSA as the appropriate unit of a metropolitan area to apply to the minimum O_3 monitoring requirements. In addition, while the final rule required fewer O_3 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 O_3 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 O_3 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 O_3 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 O_3 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 SO_2 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, SO_2, and hydrogen sulfide. No additional PM or O_3 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 NO_2 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 NO_2 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 O_3 precursor concentration trend assessment for O_3 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 (PM_{10}) 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 O_3 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 PM_{10} 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 O_3 precursor concentration trend assessment for O_3 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 PM_{10}.

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, SO_2, 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 SO_2 pollution sources were causing unhealthy levels of SO_2, that TCEQ must evaluate the addition of more SO_2 monitors, including additional SO_2 monitors around some of the largest Texas SO_2 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 Porter County, or ensure that the violating areas meet the FCAA objectives and regulations. The commenter stated that by applying the SO_2 standard calculations, the TCEQ Tatum CR 2181d Martin Creek Lake SO_2 monitor in Rusk County and the Amarillo Xcel El Rancho SO_2 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 SO_2 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 SO_2 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 SO_2 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 SO_2 NAAQS at W.A. Parish, San Miguel, and Coleto Creek or adopt enforceable emission limits to ensure attainment due to increased facility SO_2 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 SO_2 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 SO_2 NAAQS. The TCEQ continues to recommend that no additional SO_2 air quality modeling or monitoring is needed to determine compliance with the 2010 SO_2 NAAQS for any of the seven Texas counties listed in AMNP Appendix F, including the areas around WA Parish, San Miguel, and Coleto Creek. The TCEQ is meeting all regulatory DRR SO_2 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
NO_2 – nitrogen dioxide
O3 – ozone
OMB – United States Office of Management and Budget
PAMS – Photochemical Assessment Monitoring Stations
Pb – lead
PM – particulate matter
PM_{10} – 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
SO_2 – sulfur dioxide
TAMIS – Texas Air Monitoring Information System
TCEQ – Texas Commission on Environmental Quality
U.S. – United States
VOC – volatile organic compound