From:	Hoekzema, Andrew
To:	MONOPS
Cc:	Alepuz, 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

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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
ahoekzema@capcog.org ~ www.capcog.org
No electronic communication by a CAPCOG employee may legally obligate the agency

Central Texas Clean Air Coalition

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Judge Sam Biscoe
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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 (O_3) 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 O_3 monitor for the entire MSA over the last several months.
   a) The current and planned number of O_3 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 O_3 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 exposure[1].
5) We request that TCEQ deploy a second near-road nitrogen dioxide (NO_2) 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 its the FYA, so that we can in real time compare with 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 ares 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.

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God help us,
Adrénus

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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 PM2.5 monitoring by tapered element oscillating microbalance (TEOM) and monitoring for volatile organic compounds (VOCs), carbonyls, total reactive nitrogen compounds (NOy), PM coarse (PM10-2.5), and PM2.5 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 Assemssment, 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 soppy 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.

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<2020 Texas FYA_RevisedComments.pdf>

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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

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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

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David R. Baake
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California Bar #325087
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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 SO_2 monitor in the Midland-Odessa area.

- TCEQ correctly recognizes that it needs to install additional near-road NO_2 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 NO_2 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 SO_2. 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 SO_2 monitoring stations above the minimum number of monitors required under the regulations Yet, the Assessment arbitrarily fails to evaluate additional SO_2 monitors, around some of the largest sources of harmful SO_2 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 O_3 MONITORING REQUIREMENTS

MSA population [1, 2]	Most recent 3-year design value concentrations ≥85% of any O_3 NAAQS [3]	Most recent 3-year design value concentrations <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–<350,000 [5]	1	0

Table D-4 defines the minimum monitoring requirements for PM_{10}:

TABLE D–4 OF APPENDIX D TO PART 58—PM_{10} 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 O_3 sites needed to support the basic monitoring objectives of public data reporting, air quality mapping, compliance, and understanding O_3-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 ⩾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–<500,000 [5]	1	0

In addition, 40 C.F.R. Pt. 58, App. D, § 4.3.2 provides that one Near-Road NO_2 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 NO_2 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 SO_2 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 SO_2 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 SO_2 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 SO_2 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 SO_2 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, PM_2, PM_{10}, and SO_2, 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 O_3 network, at least one O_3 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.

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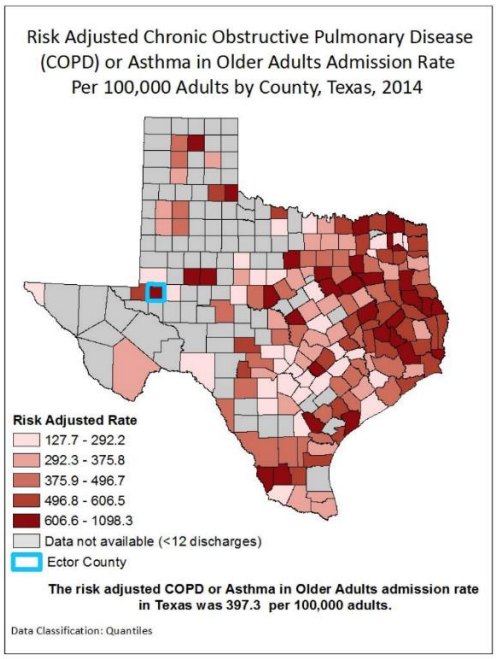
[4] For example, the Colorado Department of Public Health and Environment is using a mobile air pollution lab to detect potential air pollution problems in areas experiencing high levels of oil and gas activity. https://www.denverpost.com/2020/02/02/colorado-mobile-air-monitoring-lab/

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**	**SO_2**
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 SO_2 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 SO_2 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 SO_2 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 NO_2 Monitors in San Antonio, Austin, and El Paso

We applaud TCEQ for correctly recognizes that it needs to install an additional near-road NO_2 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 NO_2 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 NO_2 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 NO_2 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.

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[7] The PWEI score is 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. 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 NO_2 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 PM2.5 in western Houston and develop a plan of action to reduce PM2.5 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.

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[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 PM_{10} 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 SO_2.

EPA's monitoring assessment regulations require TCEQ to "work together" with EPA to design and maintain the most appropriate sulfur dioxide ("SO_2") 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 SO_2 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 SO_2 monitors around some of the largest sources of harmful SO_2 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 SO_2_NAAQS at W.A. Parish, San Miguel, and Coleto 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 Coleto Creek Power Station have increased significantly since 2019.[13] In fact, in each of the past four years, each plant has increased its overall SO_2 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

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[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 SO_2 NAAQS. The 2010 SO_2 NAAQS requires that the three-year average of the 99th percentile 1-hour daily maximum SO_2 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 SO_2 standard. TCEQ's monitor indicates that in 2018, hourly SO_2 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 SO_2 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.

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[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

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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 (O_3), particulate matter ($PM_{2.5}$ and PM_{10}), carbon monoxide (CO), lead (Pb), sulfur dioxide (SO_2) and nitrogen dioxide (NO_2). 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.

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[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 PM2.5 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.

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[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 statement.

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.

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[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 study[7] 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 R^2 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 al[9], 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]

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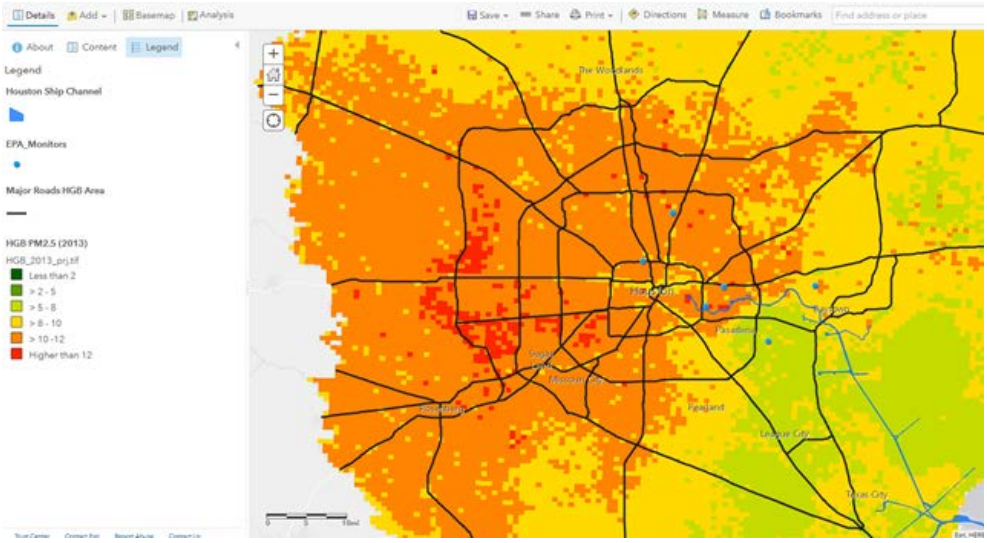
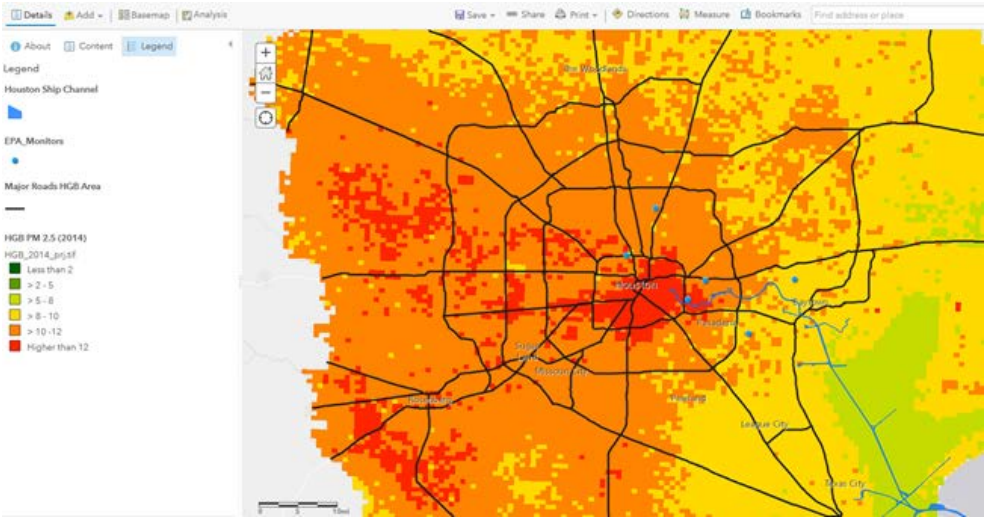
[7] Qian Di, et al. *An ensemble-based model of $PM_{2.5}$ concentration across the contiguous U.S. with high spatiotemporal resolution.* Environment International 130 (2019) 104909.
[8] U.S. EPA, *Policy Assessment for the Review of the National Ambient Air Quality Standards for Particulate Matter*, 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.

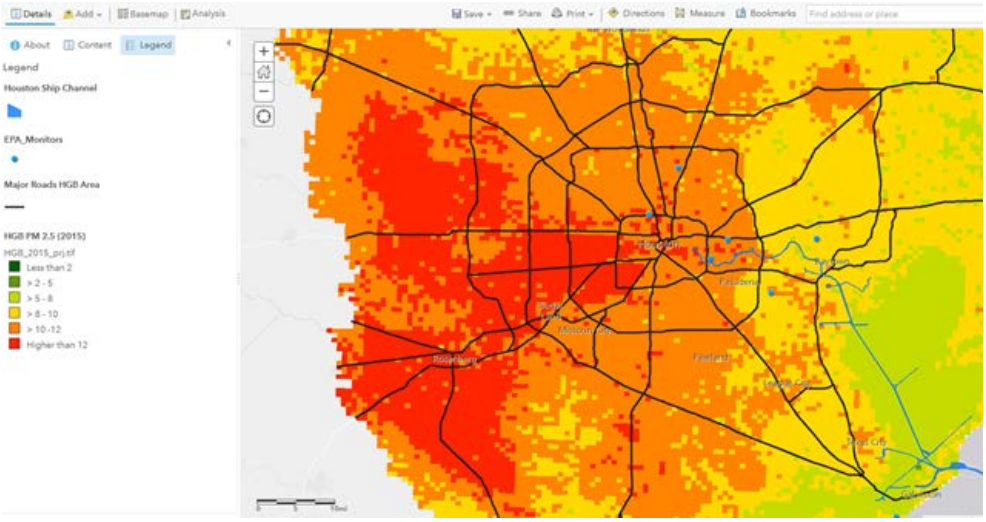
3. 2013 to 2015 $PM_{2.5}$ ambient concentrations in Houston

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 NOx 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 analysis[14] 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:

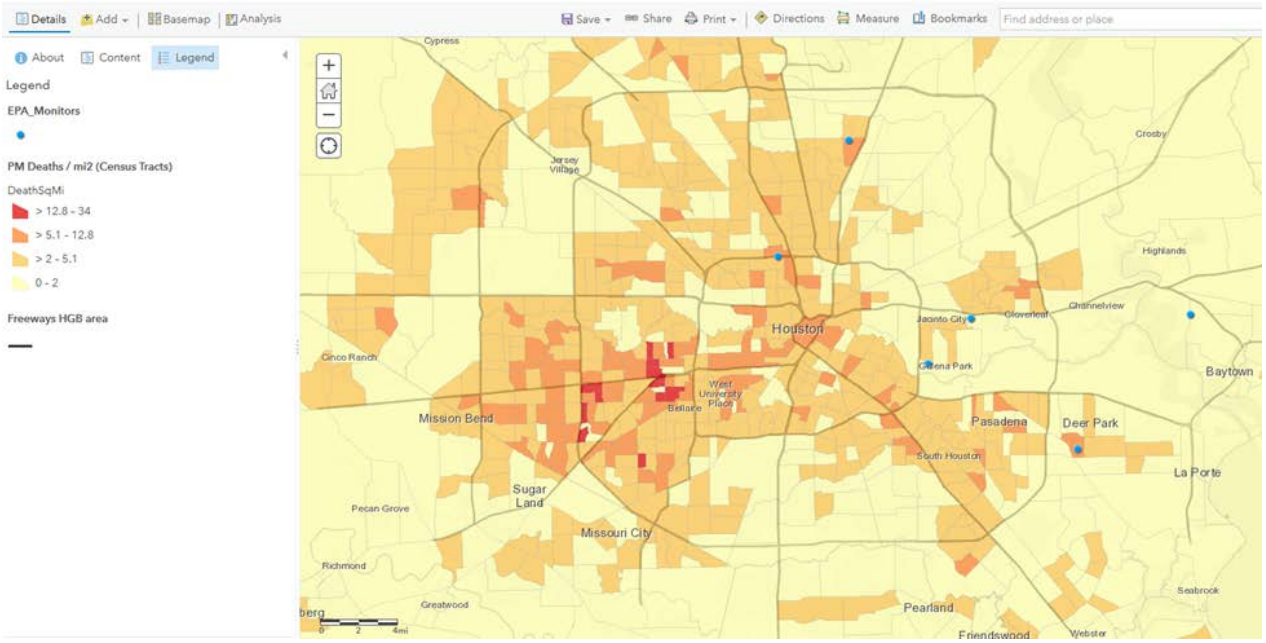
- Over 5,200 premature deaths, and
- Over $49 billion in economic damages.

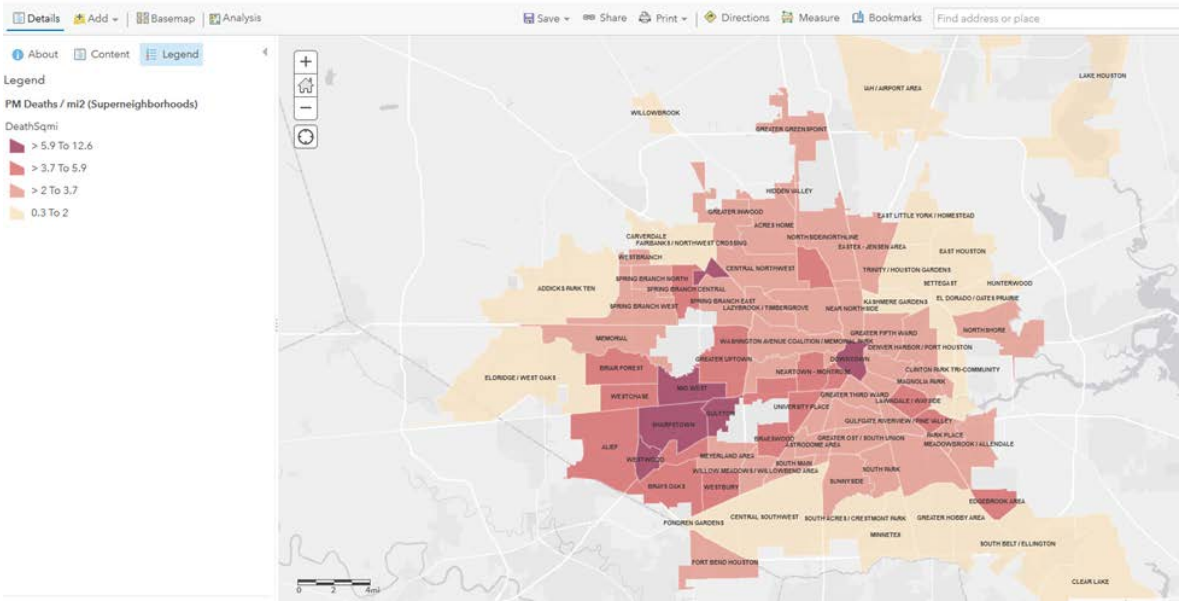
Particulate pollution is made up of small toxic airborne particles like dust, soot, and liquid particles, or aerosols. Most particulate pollution in Houston is from the chemical and petroleum industry, power generation, and diesel vehicles and construction equipment. These toxic particles penetrate deep 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 identity 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.

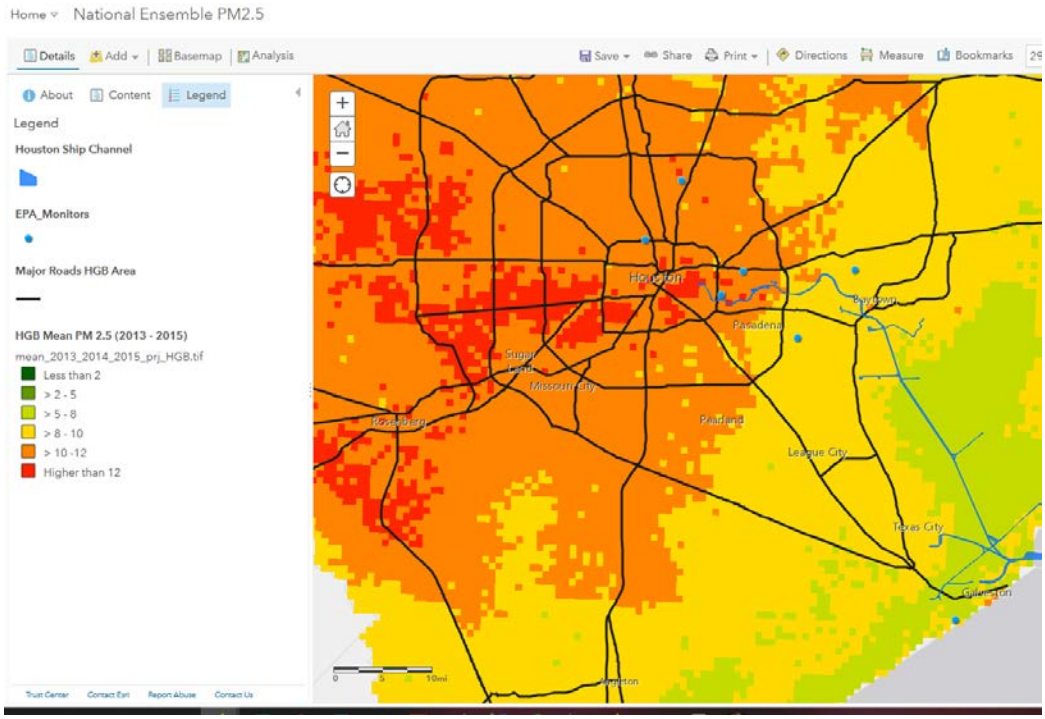


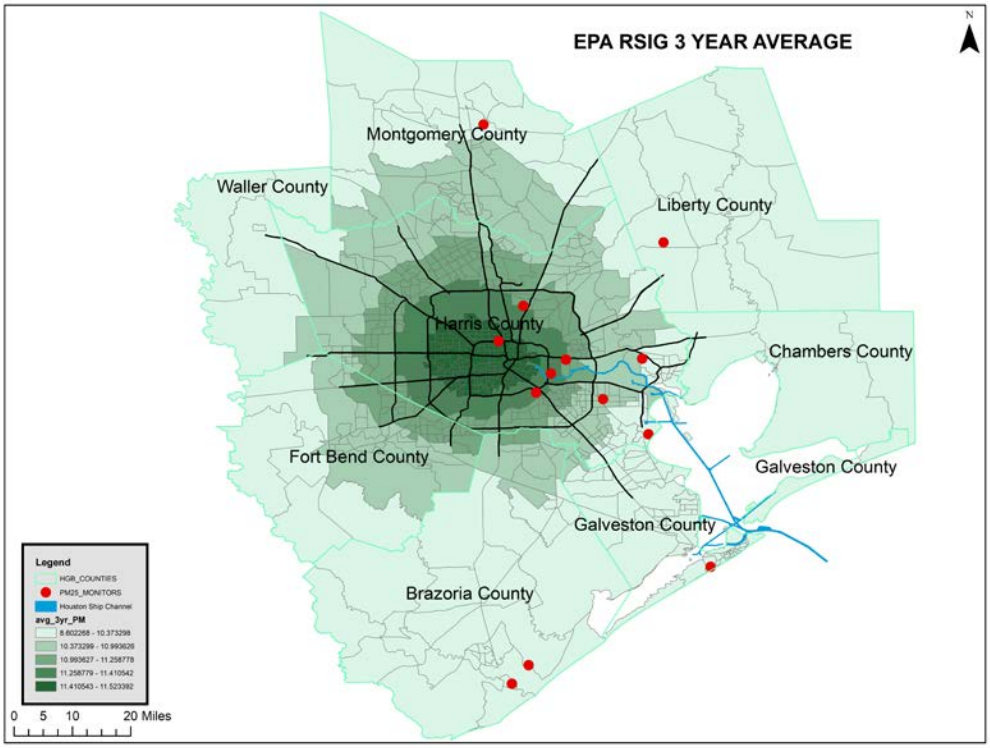


5. Assessment of federal reference monitors for $PM_{2.5}$ monitor locations in Houston

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.

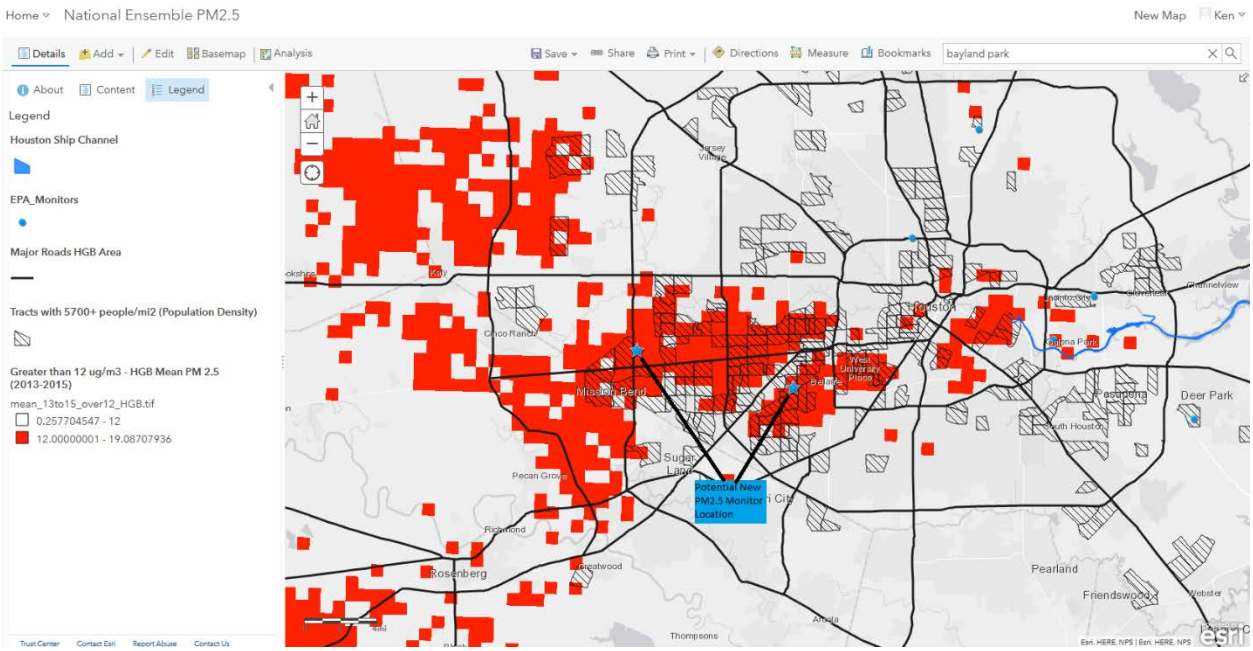
For our analysis, we defined areas of "maximum concentration" as areas where the average 2013-2015 $PM_{2.5}$ concentration exceeded the 12.0 ug/m3 NAAQS standard. As can be seen in the map below, there are currently no FRM $PM_{2.5}$ monitors (blue dots) in central and western Houston where average 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/mi^2 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 PM_{10}, 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.PublicNoticeDescResults&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 PM_{10} 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 PM_{10} monitor location. However, now that TCEQ has permitted a massive ethane cracker facility, additional pollutants like VOCs should be monitored for as well as PM_{10}.

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 PM_{10} 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 PM_{10} 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

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[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

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[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 NOx 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. <u>TCEQ must add additional monitors in the Permian Basin</u>

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 O_3 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 O_3 network, at least one O_3 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 O_3 sites needed to support the basic monitoring objectives of public data reporting, air quality mapping, compliance, and understanding O_3-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 O_3 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 Popultion	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 O_3 network, *at least one O_3 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 O_3 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 ± 0.5 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 SO_2 likely cause and contribute to exceedances of EPA's health-based sulfur dioxide NAAQS (1-hour standard) in Ector County.[39] The nearest SO_2 monitor is about 60 miles from Odessa, Ector County.[40] Thus, the existing monitoring network is plainly inadequate to assess SO_2 levels in Ector County, to say nothing of other portions of the Permian Basin. TCEQ must model SO_2 levels in Ector County and the remainder of the Permian Basin and install monitors at expected SO_2 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

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[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* Envtl. 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.

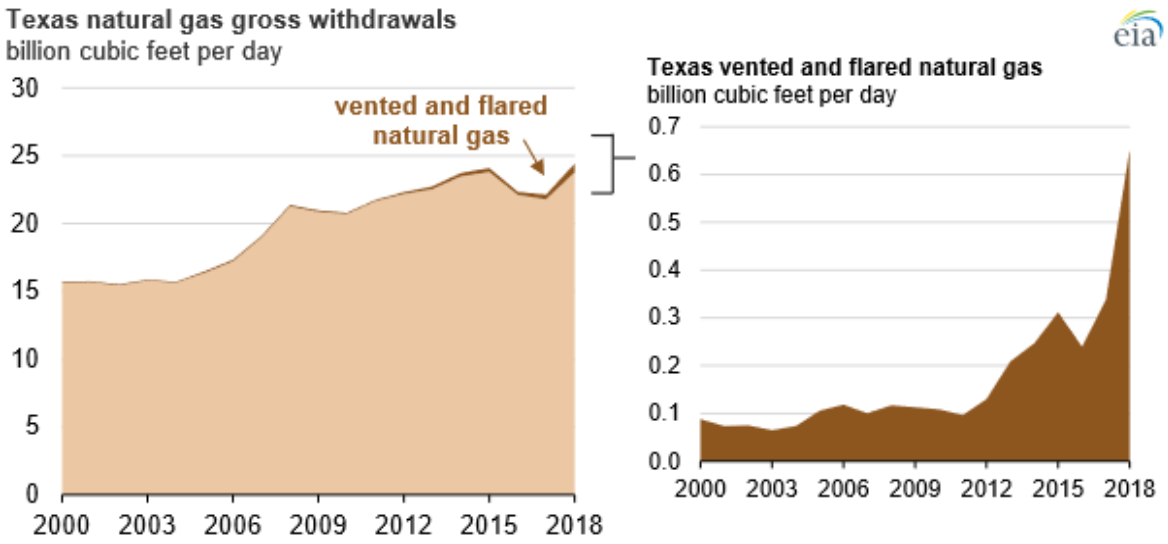
[40] *Id* at 2, 9.

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 SO_2 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, SO_2 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]

$$\boldsymbol{tons\ H_2S} = \frac{field\ concentration\ H_2S\ ppm}{1{,}000{,}000\ ppmv} \times Volume\ Vented\ (MCF) \times 1{,}000\ \left(\frac{scf}{MCF}\right) \times \frac{34.1\ molar\ weight\ H_2S\ \frac{lb}{lb-mol}}{379.3\frac{scf}{mol}} \times \frac{ton}{2{,}000\ lb} \times 0.02\ (gas\ not\ combusted)$$

$$\boldsymbol{tons\ SO_2} = \frac{field\ concentration\ H_2S\ ppm}{1{,}000{,}000\ ppmv} \times Volume\ Vented\ (MCF) \times 1{,}000\ \left(\frac{scf}{MCF}\right) \times \frac{34.1\ molar\ weight\ H_2S\ \frac{lb}{lb-mol}}{379.3\frac{scf}{mol}} \times \frac{64.1\ molar\ weight\ SO_2\ \frac{lb}{lb-mol}}{34.1\ molar\ weight\ H_2S\ \frac{lb}{lb-mol}} \times \frac{ton}{2{,}000\ lb} \times 0.98\ (gas\ combusted)$$

Vented Calculation:[45]

$$\boldsymbol{tons\ H_2S} = \frac{field\ concentration\ H_2S\ ppm}{1{,}000{,}000\ ppmv} \times Volume\ Vented\ (MCF) \times 1{,}000\ \left(\frac{scf}{MCF}\right) \times \frac{34.1\ molar\ weight\ H_2S\ \frac{lb}{lb-mol}}{379.3\frac{scf}{mol}} \times \frac{ton}{2{,}000\ lb}$$

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 SO_2 and 1,466 tons of H_2S. Venting and flaring on oil and gas leases located in Martin and Howard

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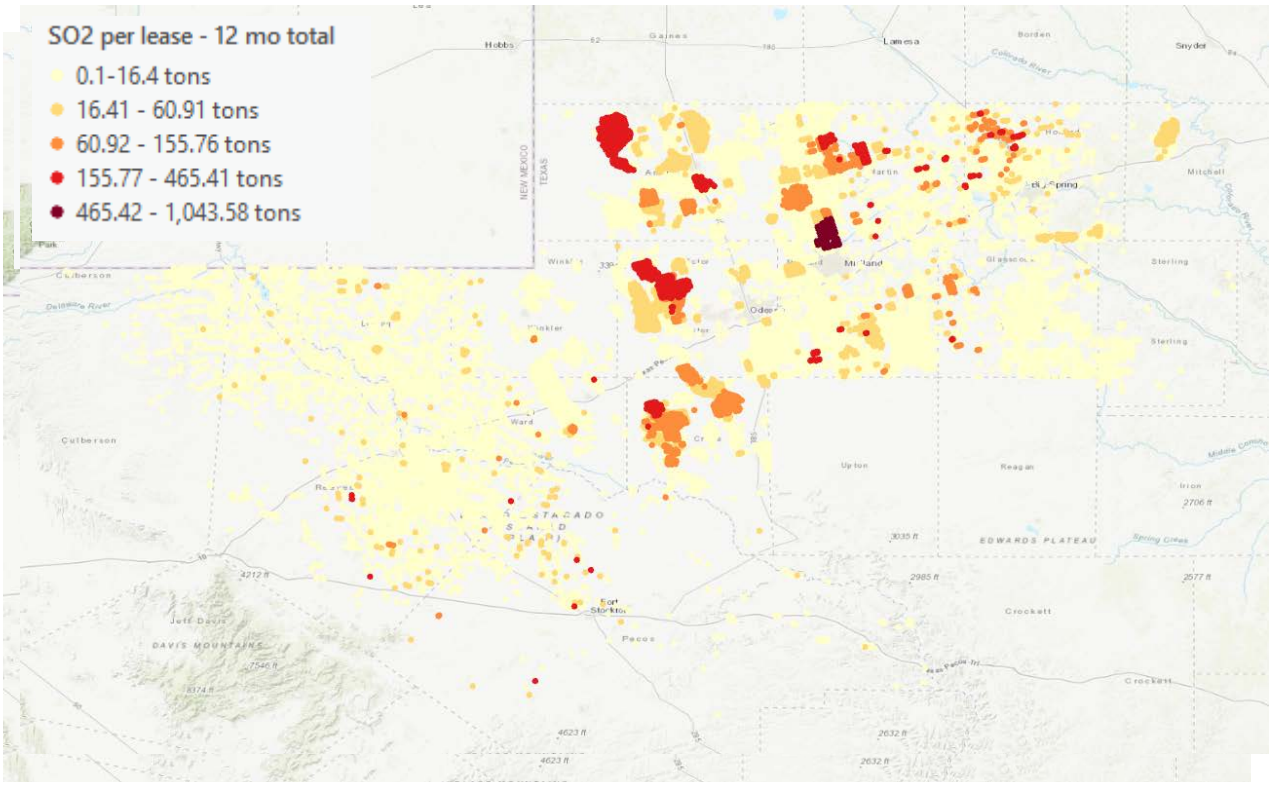
[44] *Id.*

[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 SO_2 and H_2S, 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. <u>TCEQ's SO_2 monitoring network is insufficient to support compliance with the 1-Hour SO_2 NAAQS.</u>

To reflect the most current science on SO_2 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 SO_2 NAAQS. In adopting the 1-hour SO_2 NAAQS, EPA recognized the "strong source-oriented nature of SO_2 ambient impacts." 75 Fed. Reg. at 35,370. Unlike regional pollution problems, short term SO_2 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 SO_2 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 SO_2 concentrations in areas with large point sources."). EPA also determined in the final SO_2 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 SO_2 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 SO_2 NAAQS. Third, TCEQ's proposed SO_2 monitoring network is inadequate to determine whether some of the largest pollution sources are causing unhealthy levels of SO_2. 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 SO_2.[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 SO_2 and that are not located in an area already designated nonattainment. To demonstrate compliance with the 2010 SO_2 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:

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[47] 75 Fed. Reg. at 35,551.

[48] Data Requirements Rule for the 2010 1-Hour Sulfur Dioxide (SO_2) 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 SO_2 NAAQS.

As EPA explained in the final 2010 SO_2 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 SO_2 NAAQS.

First, a single monitor may not be sufficient to characterize SO_2 air quality or to determine compliance with the 1-hr SO_2 standard. For any area with fewer than three SO_2 monitors positioned to capture peak concentrations from a large SO_2 source, monitoring will be inadequate to establish 1-hr SO_2 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

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[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 SO_2 Guideline Document at 2-6, *available at* http://www.epa.gov/ttn/naaqs/aqmguide/collection/cp2/19940201_oaqps_epa-452_r-94-008_so2_guideline.pdf [hereinafter, "1994 SO_2 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- SO_2 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 SO_2 NAAQS is modest, particularly in comparison to the costs of installing and operating an adequate SO_2 monitoring network. This is particularly true where, as here, the vast majority of SO_2 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 SO_2 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 SO_2 monitoring network is inadequate to determine whether some of the largest pollution sources are causing unhealthy levels of SO_2.

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 SO_2 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 SO_2 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 SO_2 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 SO_2 modeling protocol demonstrates that TCEQ's

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[52] 75 Fed. Reg. at 35,570.
[53] *Id.*
[54] TCEQ has SO_2 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 SO_2 concentrations—concentrations that violate the 2010 SO_2 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 SO_2 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 SO_2 monitors in locations with the highest predicted concentration of SO_2 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 SO_2 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 SO_2 NAAQS requires that the three-year average of the 99th percentile 1-hour daily maximum SO_2 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

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[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 SO_2 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 SO_2 impacts.

Air quality in the area surrounding Xcel Energy's coal-burning Harrington Station similarly fails to meet EPA's health-based SO_2 standard. In fact, air quality surrounding Harrington is significantly worse. TCEQ's monitor indicates that in 2018, hourly SO_2 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 SO_2 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 SO_2 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

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[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 SO_2 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 SO_2 NAAQS at W.A. Parish, San Miguel, and Coleto 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 Coleto Creek Power Station have increased significantly since 2019.[64] In fact, in each of the past four years, each plant has increased its overall SO_2 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 Coleto 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, Coleto 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

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[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 SO_2 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 Coleto 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 fenceline 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 NO_2/CO monitor at Zavala Elementary School. EPA regulations require "one near-road NO_2 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 NO_2 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 NO_2 concentration . . . [at] the microscale." *Id.*, section 4.3.5(a). A CO monitor must generally be collocated with any near-road NO_2 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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67 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