

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
AGENDA ITEM REQUEST
for Proposed Revision to the State Implementation Plan

AGENDA REQUESTED: August 25, 2021

DATE OF REQUEST: August 6, 2021

INDIVIDUAL TO CONTACT REGARDING CHANGES TO THIS REQUEST, IF NEEDED: Jamie Zech, Agenda Coordinator, (512) 239-3935

CAPTION: Docket No. 2021-0594-SIP. Consideration for publication of, and hearing on, the proposed Redesignation Request and Maintenance Plan State Implementation Plan (SIP) Revision for the Freestone-Anderson and the Titus 2010 Sulfur Dioxide (SO₂) National Ambient Air Quality Standard (NAAQS) Nonattainment Areas.

The proposed SIP revision includes a request that the United States Environmental Protection Agency redesignate the Freestone-Anderson and Titus nonattainment areas to attainment for the 2010 SO₂ NAAQS and provides 10-year maintenance plans for both areas consistent with Federal Clean Air Act (FCAA), §175A requirements. The proposed SIP revision also addresses the comprehensive emissions inventory and nonattainment new source review certification statement SIP requirements provided under Part D of the FCAA. (Mary Ann Cook, John Minter/Terry Salem; Project No. 2021-007-SIP-NR)

Tonya Baer

Director

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Copy to CCC Secretary? NO YES

Texas Commission on Environmental Quality

Interoffice Memorandum

To: Commissioners **Date:** August 6, 2021

Thru: Laurie Gharis, Chief Clerk
Toby Baker, Executive Director

From: Tonya Baer, Director
Office of Air

Docket No.: 2021-0594-SIP

Subject: Commission Approval for Proposal of the Redesignation Request and Maintenance Plan State Implementation Plan (SIP) Revision for the Freestone-Anderson and Titus 2010 Sulfur Dioxide (SO₂) National Ambient Air Quality Standard (NAAQS) Nonattainment Areas

Redesignation Request and Maintenance Plan for the Freestone-Anderson and Titus SO₂ NAAQS Nonattainment Areas
Project No. 2021-007-SIP-NR

Background and reason(s) for the SIP revision:

The United States Environmental Protection Agency (EPA) revised the SO₂ NAAQS on June 22, 2010, adding the 75 parts per billion (ppb) one-hour primary standard (75 *Federal Register* (FR) 35520). The EPA designated several areas in Texas as nonattainment for the 2010 SO₂ NAAQS, effective January 12, 2017 (81 FR 89870), including portions of Freestone and Anderson Counties (Freestone-Anderson) and a portion of Titus County (Titus). Areas designated as nonattainment for the SO₂ NAAQS are subject to the general nonattainment area planning requirements in §172 of the Federal Clean Air Act (FCAA) and to the SO₂-specific planning requirements in FCAA, §191 and §192. These planning requirements include an emissions inventory, attainment demonstration (AD), reasonably available control measures (RACM) including reasonably available control technology (RACT), enforceable emission limitations and control measures, reasonable further progress (RFP) plan, nonattainment new source review (NNSR), and contingency measures.

SIP submittals for the Texas 2010 SO₂ nonattainment areas were due to the EPA on July 13, 2018. On August 22, 2019, the EPA proposed an error correction to modify designations to unclassifiable for the Freestone-Anderson and Titus nonattainment areas (84 FR 43757). On June 29, 2021, the EPA published a notice withdrawing the proposed error correction (86 FR 34187). Primarily due to ongoing litigation and the expectation for designation revisions, Texas did not submit SIP revisions for the nonattainment areas by the July 13, 2018 due date. On August 10, 2020, the EPA published a final notice of finding of failure to submit, effective September 9, 2020 (85 FR 48111). Under FCAA, §110(c), EPA has an obligation to promulgate a federal implementation plan (FIP) within two years if the SIP planning requirements are not met. If the EPA does not make a completeness determination by March 9, 2022 (18 months after the finding of failure to submit) of a Texas SIP submittal to address the deficiencies, then pursuant to FCAA, §179(a) and (b) and 40 Code of Federal Regulations §52.31, the emissions offset sanction identified in FCAA, §179(b)(2) will apply for the affected nonattainment areas. If the EPA does not determine that the state's submittals are complete within six months after imposing the offset sanction, then the highway funding sanction will apply. If Texas submits the required SIP submittals and the EPA approves those submittals by September

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9, 2022 (two years after the finding of failure to submit), then the EPA will not be required to promulgate a FIP.

The Monticello Steam Electric Station in Titus County was the primary SO₂ emissions source in the Titus SO₂ NAAQS nonattainment area, and it was shut down in late 2017. The Big Brown Steam Electric Station in Anderson County, the primary SO₂ emissions source in the Freestone-Anderson SO₂ NAAQS nonattainment area, ceased operations in early 2018 and was demolished in April of 2021. On May 14, 2021, the EPA published final clean data determinations (CDD) for the Freestone-Anderson and Titus nonattainment areas effective June 14, 2021 (86 FR 26388). EPA made these determinations based on the shutdown of the primary emissions sources in both nonattainment areas and were supported by monitoring data from within or near those areas along with an evaluation of previous modeling. The final CDDs suspend the following SIP planning requirements for the 2010 SO₂ NAAQS related to attainment: the AD and RFP plans, RACT, RACM, contingency measures, and enforceable emission limitations and control measures. These requirements are suspended for as long as the areas continue to attain the standard. The emissions inventory and NNSR SIP requirements are not suspended by a CDD and must be addressed in a SIP submittal by March 9, 2022 to avoid sanctions and a potential FIP. Furthermore, a final CDD is not a redesignation to attainment under FCAA, §107(d)(3), but it does provide support for a redesignation request.

Scope of the SIP revision:

The proposed Redesignation Request and Maintenance Plan SIP Revision for the Freestone-Anderson and Titus SO₂ NAAQS Nonattainment Areas includes the state's request that the EPA redesignate both areas to attainment for the 2010 SO₂ and provides the required 10-year maintenance plan for each area.

The proposed revision includes a comprehensive, detailed inventory of current SO₂ emissions for both nonattainment areas and the state's certification that current regulations provide the means to satisfy NNSR requirements for the Freestone-Anderson and the Titus SO₂ NAAQS nonattainment areas.

A.) Summary of what the SIP revision would do:

The proposed SIP revision for the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas will request that the EPA redesignate both areas to attainment for the 2010 SO₂ NAAQS, provide a 10-year maintenance plan for each area consistent with FCAA, §175A requirements, and address, by the EPA's March 9, 2022 deadline, the outstanding NNSR and emissions inventory requirements that were not suspended by the May 14, 2021 CDDs.

B.) Scope required by federal regulations or state statutes:

The FCAA, §175A(a) indicates that states that submit a request for redesignation to attainment are required to submit a revision to the SIP providing for a maintenance plan for the area for at least 10 years after the effective date of redesignation. The EPA's finding of failure to submit requires complete attainment demonstrations for the nonattainment areas submitted to the EPA by March 9, 2022, but the requirements for AD

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and RFP plans, RACT, RACM, contingency measures, and enforceable emission limitations and control measures are suspended by the CDDs. Because a CDD does not suspend requirements for comprehensive emissions inventories and NNSR certification statements, those elements are included in this proposed SIP revision.

C.) Additional staff recommendations that are not required by federal rule or state statute: None

Statutory authority:

The authority to propose and adopt a SIP revision is derived from FCAA, §110, which requires states to submit implementation plans that contain enforceable measures to achieve the NAAQS; FCAA, §175A, regarding maintenance plans; and other general and specific authority in Texas Water Code, Chapters 5 and 7, and Texas Health and Safety Code, Chapter 382.

Effect on the:

A.) Regulated community:

The regulated community will benefit by receiving relief from sanctions, FIP, and additional nonattainment permitting requirements.

B.) Public:

People in and around the Freestone-Anderson and Titus nonattainment areas have already benefitted from improved air quality due to the closures of the Big Brown Steam Electric Station and the Monticello Steam Electric Station. The public will benefit from the redesignation and continued maintenance of the Freestone-Anderson and Titus areas.

C.) Agency programs:

No impact on agency programs is anticipated.

Stakeholder meetings:

Solicitation of public comment and public hearings will occur after commission approval of the proposal of this plan. Since there are no associated new rules, stakeholder meetings were not held.

Potential controversial concerns and legislative interest:

None.

Would this SIP revision affect any current policies or require development of new policies?

No.

What are the consequences if this SIP revision does not go forward? Are there alternatives to the SIP revision?

The state could choose to not submit the redesignation request and maintenance plan portions of this proposed SIP revision, as it is not a required submittal, but if not

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submitted and approved by the EPA, the Freestone-Anderson and Titus nonattainment areas will remain in nonattainment status.

While final CDDs do suspend attainment-related SIP planning requirements, the TCEQ must still address those nonattainment area requirements that are not suspended by the CDDs. If the portions of this proposed SIP revision that specifically address the emissions inventory and NNSR requirements for both nonattainment areas are not submitted, those SIP requirements would remain outstanding. If those SIP requirements for the Freestone-Anderson and/or the Titus SO₂ NAAQS nonattainment areas remain outstanding on March 9, 2022, the EPA will be required to implement a FIP for each applicable area.

Key points in the proposal SIP revision schedule:

Anticipated proposal date: August 25, 2021

Anticipated public hearing date: September 28, 2021

Anticipated public comment period: August 27 through September 29, 2021

Anticipated adoption date: February 23, 2022

Submittal to EPA: by March 9, 2022

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REVISIONS TO THE STATE OF TEXAS AIR QUALITY
IMPLEMENTATION PLAN FOR THE CONTROL OF SULFUR
DIOXIDE AIR POLLUTION

FREESTONE-ANDERSON AND TITUS 2010 SULFUR DIOXIDE
(SO₂) STANDARD NONATTAINMENT AREAS



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
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**REDESIGNATION REQUEST AND MAINTENANCE PLAN
FOR THE FREESTONE-ANDERSON AND TITUS 2010 SO₂
NATIONAL AMBIENT AIR QUALITY STANDARD
NONATTAINMENT AREAS**

2021-007-SIP-NR

Proposal
August 25, 2021

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EXECUTIVE SUMMARY

Portions of Freestone and Anderson Counties (Freestone-Anderson) and a portion of Titus County (Titus) are designated nonattainment for the 2010 sulfur dioxide (SO₂) National Ambient Air Quality Standard (NAAQS) of 75 parts per billion. The Freestone-Anderson 2010 SO₂ NAAQS nonattainment area was designated nonattainment due to emissions from the Big Brown Steam Electric Station, the primary SO₂ emissions source in that area. The Titus 2010 SO₂ NAAQS nonattainment area was designated nonattainment due to emissions from the Monticello Steam Electric Station, the primary SO₂ emissions source in that area. As of early 2018, both facilities had permanently ceased operations.

SIP submittals for the Texas 2010 SO₂ nonattainment areas were due to the EPA on July 13, 2018. On August 22, 2019, the EPA proposed an error correction to modify designations to unclassifiable for Texas SO₂ nonattainment areas, including Freestone-Anderson and Titus (84 FR 43757). On June 29, 2021, the EPA published a notice withdrawing the proposed error correction (86 FR 34187). Primarily due to ongoing litigation and the expectation for designation revisions, Texas did not submit SIP revisions for the nonattainment areas by the July 13, 2018 due date. On August 10, 2020, the EPA published a final notice of finding of failure to submit, effective September 9, 2020 (85 FR 48111). This action triggered an EPA obligation under FCAA, §110(c) to promulgate a federal implementation plan (FIP) anytime within two years if the SIP planning requirements are not met. If the EPA does not make a completeness determination by March 9, 2022 (18 months after the finding of failure to submit) of a Texas SIP submittal to address the deficiencies, then pursuant to FCAA, §179(a) and (b) and 40 Code of Federal Regulations §52.31, the emissions offset sanction identified in FCAA, §179(b)(2) will apply for the affected nonattainment areas. If the EPA does not determine that the state's submittals are complete within six months after imposing the offset sanction, then the highway funding sanction will apply. If Texas submits the required SIP submittals and the EPA approves those submittals by September 9, 2022 (two years after the finding of failure to submit), then the EPA will not be required to promulgate a FIP.

On June 30, 2020 the Texas Commission on Environmental Quality (TCEQ) sent a letter to the United States Environmental Protection Agency (EPA) requesting clean data determinations (CDD) for the Freestone-Anderson and the Titus nonattainment areas. The TCEQ cited the retirements of the Big Brown Steam Electric Station and the Monticello Steam Electric Station, and preliminary SO₂ design values below the NAAQS in each of these two nonattainment areas. On May 14, 2021, the EPA published final CDDs for the Freestone-Anderson and Titus nonattainment areas (86 *Federal Register* (FR) 26401) concluding that, effective June 14, 2021, both areas are currently in attainment of the 2010 SO₂ NAAQS per the EPA's Clean Data Policy. The CDDs were based on an analysis of available monitoring and modeling data. While a CDD is not a redesignation to attainment under Federal Clean Air Act (FCAA), §107(d)(3)(E), it does provide support for redesignation of each of these nonattainment areas.

The FCAA, §107(d)(3)(E) states that the EPA can redesignate an area to attainment if the following conditions are met:

- the EPA has determined that the NAAQS has been attained;

- the applicable implementation plan has been fully approved by the EPA under FCAA, §110(k);
- the EPA has determined that the improvement in air quality is due to permanent and enforceable reductions in emissions;
- the state has met all applicable requirements for the area under §110 and Part D of the FCAA; and
- the EPA has fully approved a maintenance plan, including a contingency plan, for the area under FCAA, §175A.

A final CDD suspends some of the state implementation plan (SIP) requirements of FCAA, Part D, such as attainment demonstrations, reasonable further progress demonstrations, implementation of reasonably available control measures (including reasonable available control technology), and contingency measures, for as long as the area continues to attain the standard. A CDD does not suspend the comprehensive emissions inventories (EI) and nonattainment new source review (NNSR) certification statement SIP requirements for nonattainment areas. These requirements must be addressed in a SIP submittal by March 9, 2022 to avoid sanctions and a potential FIP.

This proposed SIP revision includes the state's request that the EPA redesignate the Freestone-Anderson and Titus nonattainment areas to attainment for the 2010 SO₂ NAAQS. This proposed SIP revision also includes maintenance plans for the areas, in accordance with FCAA, §175A, to ensure continued attainment of the 2010 SO₂ NAAQS for at least 10 years after the effective date of a redesignation. Finally, this proposed SIP revision includes the outstanding comprehensive EIs and NNSR certification statements required for the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas.

SECTION V-A: LEGAL AUTHORITY

General

The Texas Commission on Environmental Quality (TCEQ) has the legal authority to implement, maintain, and enforce the National Ambient Air Quality Standards (NAAQS) and to control the quality of the state's air, including maintaining adequate visibility.

The first air pollution control act, known as the Clean Air Act of Texas, was passed by the Texas Legislature in 1965. In 1967, the Clean Air Act of Texas was superseded by a more comprehensive statute, the Texas Clean Air Act (TCAA), found in Article 4477-5, Vernon's Texas Civil Statutes. The legislature amended the TCAA in 1969, 1971, 1973, 1979, 1985, 1987, 1989, 1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011, 2013, 2015, 2017, and 2019. In 1989, the TCAA was codified as Chapter 382 of the Texas Health and Safety Code.

Originally, the TCAA stated that the Texas Air Control Board (TACB) was the state air pollution control agency and was the principal authority in the state on matters relating to the quality of air resources. In 1991, the legislature abolished the TACB effective September 1, 1993, and its powers, duties, responsibilities, and functions were transferred to the Texas Natural Resource Conservation Commission (TNRCC). In 2001, the 77th Texas Legislature continued the existence of the TNRCC until September 1, 2013 and changed the name of the TNRCC to the TCEQ. In 2009, the 81st Texas Legislature, during a special session, amended section 5.014 of the Texas Water Code, changing the expiration date of the TCEQ to September 1, 2011, unless continued in existence by the Texas Sunset Act. In 2011, the 82nd Texas Legislature continued the existence of the TCEQ until 2023. With the creation of the TNRCC (and its successor the TCEQ), the authority over air quality is found in both the Texas Water Code and the TCAA. Specifically, the authority of the TCEQ is found in Chapters 5 and 7. Chapter 5, Subchapters A - F, H - J, and L, include the general provisions, organization, and general powers and duties of the TCEQ, and the responsibilities and authority of the executive director. Chapter 5 also authorizes the TCEQ to implement action when emergency conditions arise and to conduct hearings. Chapter 7 gives the TCEQ enforcement authority.

The TCAA specifically authorizes the TCEQ to establish the level of quality to be maintained in the state's air and to control the quality of the state's air by preparing and developing a general, comprehensive plan. The TCAA, Subchapters A - D, also authorize the TCEQ to collect information to enable the commission to develop an inventory of emissions; to conduct research and investigations; to enter property and examine records; to prescribe monitoring requirements; to institute enforcement proceedings; to enter into contracts and execute instruments; to formulate rules; to issue orders taking into consideration factors bearing upon health, welfare, social and economic factors, and practicability and reasonableness; to conduct hearings; to establish air quality control regions; to encourage cooperation with citizens' groups and other agencies and political subdivisions of the state as well as with industries and the federal government; and to establish and operate a system of permits for construction or modification of facilities.

Local government authority is found in Subchapter E of the TCAA. Local governments have the same power as the TCEQ to enter property and make inspections. They also

may make recommendations to the commission concerning any action of the TCEQ that affects their territorial jurisdiction, may bring enforcement actions, and may execute cooperative agreements with the TCEQ or other local governments. In addition, a city or town may enact and enforce ordinances for the control and abatement of air pollution not inconsistent with the provisions of the TCAA and the rules or orders of the commission.

In addition, Subchapters G and H of the TCAA authorize the TCEQ to establish vehicle inspection and maintenance programs in certain areas of the state, consistent with the requirements of the Federal Clean Air Act; coordinate with federal, state, and local transportation planning agencies to develop and implement transportation programs and measures necessary to attain and maintain the NAAQS; establish gasoline volatility and low emission diesel standards; and fund and authorize participating counties to implement vehicle repair assistance, retrofit, and accelerated vehicle retirement programs.

Applicable Law

The following statutes and rules provide necessary authority to adopt and implement the state implementation plan (SIP). The rules listed below have previously been submitted as part of the SIP.

Statutes

All sections of each subchapter are included, unless otherwise noted.

TEXAS HEALTH & SAFETY CODE, Chapter 382 September 1, 2019

TEXAS WATER CODE September 1, 2019

Chapter 5: Texas Natural Resource Conservation Commission

Subchapter A: General Provisions

Subchapter B: Organization of the Texas Natural Resource Conservation Commission

Subchapter C: Texas Natural Resource Conservation Commission

Subchapter D: General Powers and Duties of the Commission

Subchapter E: Administrative Provisions for Commission

Subchapter F: Executive Director (except §§5.225, 5.226, 5.227, 5.2275, 5.231, 5.232, and 5.236)

Subchapter H: Delegation of Hearings

Subchapter I: Judicial Review

Subchapter J: Consolidated Permit Processing

Subchapter L: Emergency and Temporary Orders (§§5.514, 5.5145, and 5.515 only)

Subchapter M: Environmental Permitting Procedures (§5.558 only)

Chapter 7: Enforcement

Subchapter A: General Provisions (§§7.001, 7.002, 7.0025, 7.004, and 7.005 only)

Subchapter B: Corrective Action and Injunctive Relief (§7.032 only)

Subchapter C: Administrative Penalties

Subchapter D: Civil Penalties (except §7.109)

Subchapter E: Criminal Offenses and Penalties: §§7.177, 7.179-7.183

Rules

All of the following rules are found in 30 Texas Administrative Code, as of the following latest effective dates:

Chapter 7: Memoranda of Understanding, §§7.110 and 7.119	December 13, 1996 and May 2, 2002
Chapter 19: Electronic Reporting	March 15, 2007
Subchapter A: General Provisions	
Subchapter B: Electronic Reporting Requirements	
Chapter 35: Emergency and Temporary Orders and Permits; Temporary Suspension or Amendment of Permit Conditions	
Subchapter A: Purpose, Applicability, and Definitions	December 10, 1998
Subchapter B: Authority of Executive Director	December 10, 1998
Subchapter C: General Provisions	March 24, 2016
Subchapter K: Air Orders	July 20, 2006
Chapter 39: Public Notice	
Subchapter H: Applicability and General Provisions, §§39.402(a)(1) - (6), (8), and (10) - (12), 39.405(f)(3) and (g), (h)(1)(A) - (4), (6), (8) - (11), (i) and (j), 39.407, 39.409, 39.411(a), (e)(1) - (4)(A)(i) and (iii), (4)(B), (5)(A) and (B), and (6) - (10), (11)(A)(i) and (iii) and (iv), (11)(B) - (F), (13) and (15), and (f)(1) - (8), (g) and (h), 39.418(a), (b)(2)(A), (b)(3), and (c), 39.419(e), 39.420 (c)(1)(A) - (D)(i)(I) and (II), (D)(ii), (c)(2), (d) - (e), and (h), and Subchapter K: Public Notice of Air Quality Permit Applications, §§39.601 - 39.605	May 14, 2020
Chapter 55: Requests for Reconsideration and Contested Case Hearings; Public Comment, all of the chapter, except §55.125(a)(5) and (6)	May 14, 2020
Chapter 101: General Air Quality Rules	May 14, 2020
Chapter 106: Permits by Rule, Subchapter A	April 17, 2014
Chapter 111: Control of Air Pollution from Visible Emissions and Particulate Matter	August 3, 2017
Chapter 112: Control of Air Pollution from Sulfur Compounds	July 16, 1997
Chapter 113: Standards of Performance for Hazardous Air Pollutants and for Designated Facilities and Pollutants	May 14, 2009
Chapter 114: Control of Air Pollution from Motor Vehicles	July 2, 2020

Chapter 115: Control of Air Pollution from Volatile Organic Compounds	March 26, 2020
Chapter 116: Control of Air Pollution by Permits for New Construction or Modification	May 14, 2020
Chapter 117: Control of Air Pollution from Nitrogen Compounds	March 26, 2020
Chapter 118: Control of Air Pollution Episodes	March 5, 2000
Chapter 122: §122.122: Potential to Emit	February 23, 2017
Chapter 122: §122.215: Minor Permit Revisions	June 3, 2001
Chapter 122: §122.216: Applications for Minor Permit Revisions	June 3, 2001
Chapter 122: §122.217: Procedures for Minor Permit Revisions	June 3, 2001
Chapter 122: §122.218: Minor Permit Revision Procedures for Permit Revisions Involving the Use of Economic Incentives, Marketable Permits, and Emissions Trading	June 3, 2001

SECTION VI: CONTROL STRATEGY

- A. Introduction (No change)
- B. Ozone (No change)
- C. Particulate Matter (No change)
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- G. Sulfur Dioxide (Revised)
 - 1. Harris County SO₂ State Implementation Plan (SIP) Revision (No change)
 - 2. Milam County SO₂ SIP Revision (No change)
 - 3. Redesignation Request and Maintenance Plan for the Freestone-Anderson and Titus 2010 SO₂ National Ambient Air Quality Standard Nonattainment Areas (New)
 - Chapter 1: General
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- H. Conformity with the National Ambient Air Quality Standards (No change)
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LIST OF ACRONYMS

AEDT	Aviation Environmental Design Tool
AERR	Air Emissions Reporting Requirements
APU	auxiliary power unit
CDD	clean data determination
CFR	Code of Federal Regulations
DRR	Data Requirements Rule
EI	emissions inventory
EPA	United States Environmental Protection Agency
ERG	Eastern Research Group
FAA	Federal Aviation Administration
FCAA	Federal Clean Air Act
FIP	federal implementation plan
FM	Farm to Market
FMVCP	Federal Motor Vehicle Control Program
FOP	Federal Operating Permit
FR	<i>Federal Register</i>
GSE	ground support equipment
H ₂ S	hydrogen sulfide
ICI	industrial, commercial, and institutional
MOVES	Motor Vehicle Emission Simulator
NAAQS	National Ambient Air Quality Standard
NEI	National Emissions Inventory
NNSR	nonattainment new source review
NSR	new source review
PM _{2.5}	fine particulate matter
ppb	parts per billion
RACM	reasonably available control measures
RACT	reasonably available control technology
RFP	reasonable further progress
RN	Regulated Entity Reference Number
RRC	Railroad Commission of Texas
SIP	state implementation plan

SO ₂	sulfur dioxide
STARS	State of Texas Air Reporting System
TAC	Texas Administrative Code
TACB	Texas Air Control Board
TCAA	Texas Clean Air Act
TCEQ	Texas Commission on Environmental Quality (commission)
TexN2.1	Texas NONROAD version 2.1
TNRCC	Texas Natural Resource Conservation Commission
tpy	tons per year

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CHAPTER 1: GENERAL

1.1 BACKGROUND

Information on the Texas State Implementation Plan (SIP) and a list of SIP revisions and other air quality plans adopted by the commission can be found on the [Texas State Implementation Plan](http://www.tceq.texas.gov/airquality/sip) webpage (<http://www.tceq.texas.gov/airquality/sip>) and on the [Texas Commission on Environmental Quality's](http://www.tceq.texas.gov/) (TCEQ) website (<http://www.tceq.texas.gov/>).

1.2 PURPOSE

The TCEQ seeks redesignations of the Freestone-Anderson and Titus nonattainment areas to attainment for the 2010 sulfur dioxide (SO₂) National Ambient Air Quality Standard (NAAQS) under Federal Clean Air Act (FCAA), §107(d)(3)(E), which states that the United States Environmental Protection Agency (EPA) can redesignate an area to attainment if all of the following conditions are met:

- the EPA has determined that the NAAQS has been attained;
- the applicable implementation plan has been fully approved by the EPA under FCAA, §110(k);
- the EPA has determined that the improvement in air quality is due to permanent and enforceable reductions in emissions;
- the state has met all applicable requirements for the area under §110 and Part D of the FCAA; and
- the EPA has fully approved a maintenance plan, including a contingency plan, for the area under FCAA, §175A.

The purpose of this proposed SIP revision is to address all of the above requirements, including the comprehensive emissions inventory and nonattainment new source review certification statement requirements under Part D of the FCAA. This proposed SIP also includes maintenance plans that will fulfill the requirements under FCAA, §107(d)(3)(E) and ensure that the Freestone-Anderson and Titus nonattainment areas continue to attain the 2010 SO₂ NAAQS through 2034.

1.3 HISTORY OF THE 2010 SO₂ NAAQS IN RELATION TO FREESTONE, ANDERSON, AND TITUS COUNTIES

On June 22, 2010, the EPA revised the SO₂ NAAQS, adding the 75 parts per billion one-hour primary standard (75 *Federal Register* (FR) 35520). On June 2, 2011, Texas submitted a letter to the EPA recommending designations for nine counties, including unclassifiable designations for Anderson, Freestone, and Titus Counties. On April 20, 2012, TCEQ submitted a revised recommendation but did not change the state's initial recommendation for Anderson, Freestone, or Titus County designations.

On August 5, 2013, the EPA published final nonattainment area designations for areas that had monitored data indicating violations of the 2010 SO₂ NAAQS within the period from 2009 through 2011 (78 FR 47191). The EPA announced nonattainment designations for 29 areas in 16 states but was not prepared to issue designations for the remaining areas, including all of Texas. Following those initial designations, several entities sued the EPA for failing to complete all area designations by a June 2013 deadline.

On March 2, 2015, to resolve outstanding litigation, the United States District Court for the Northern District of California approved and entered a consent decree setting deadlines for the EPA to complete three additional rounds of designations. By July 2, 2016 (for Round 2 designations), the EPA was required to designate areas with newly monitored violations as well as areas with large emissions sources not announced for retirement as of March 2015.¹

In a letter to the TCEQ dated March 20, 2015, the EPA identified 12 electric power plants with emissions meeting the court-ordered criteria for required designation by July 2016. These included the Big Brown Steam Electric Station in Freestone County and the Monticello Steam Electric Station in Titus County. The EPA's letter provided an opportunity for Texas to submit updated recommendations and supporting information for the EPA to consider for area designations by September 18, 2015.

On August 21, 2015, the EPA published the Data Requirements Rule (DRR) for the 2010 SO₂ NAAQS (80 FR 51052). The DRR required states to identify sources with 2014 emissions greater than 2,000 tpy, and to inform the EPA of plans to characterize air quality at the identified sources, either through modeling or monitoring.

On September 18, 2015, Texas submitted revised recommendations in response to the EPA's March 2015 letter, recommending unclassifiable/attainment designations for areas of the state that did not have monitors at that time, including Anderson, Freestone, and Titus Counties.

On January 15, 2016, in compliance with the DRR, Texas submitted to the EPA a list with final identification of 24 sources in the state with 2014 emissions greater than 2,000 tpy. This list included the Big Brown Steam Electric Station in Freestone County and the Monticello Steam Electric Station in Titus County. The state submitted the DRR-required air quality characterization plans for all identified sources by the July 1, 2016 deadline. In its air quality characterization plans, the TCEQ indicated that monitoring would be used to characterize air quality for both the Big Brown Steam Electric Station in Freestone County and the Monticello Steam Electric Station in Titus County. However, the March 2015 consent decree designation deadline for areas where these facilities were located would not allow for sufficient time to collect monitoring data from source-oriented monitors in accordance with the DRR. The DRR required that all source-oriented monitors to be used to characterize air quality to inform designations were to be installed and operating by January 1, 2017, which further limited the state's ability to obtain sufficient qualified monitoring data before the EPA's designations needed to be finalized.

On February 11, 2016, the EPA issued a 120-day notice to Texas with proposed designations for areas surrounding the 12 sources identified in its March 2015 letter. The notice included intended nonattainment area designations for portions of Anderson, Freestone, and Titus Counties, with the portions of Anderson and Freestone Counties in a single nonattainment area (the Freestone-Anderson nonattainment area).

¹ Large emissions sources were defined as those sources with 2021 SO₂ emissions either greater than 16,000 tons per year or greater than 2,600 tons per year with an emission rate over 0.45 pounds per million British thermal units (lbs/MMBtu).

On April 19, 2016, Texas responded to the 120-day notice, restating the position that Anderson, Freestone, and Titus Counties should each be designated unclassifiable/attainment.

On July 12, 2016, the EPA published final Round 2 designations but delayed those for Anderson, Freestone, Titus, and four other counties (81 FR 45039). On December 13, 2016, the EPA published final nonattainment designations for the Freestone-Anderson 2010 SO₂ NAAQS nonattainment area and the Titus 2010 SO₂ NAAQS nonattainment area (81 FR 89870). In making nonattainment designations for the two areas, the EPA considered data available at the time of those designations, including modeling submitted by Luminant Generation Company, LLC (owner of the two facilities) as well as modeling that the Sierra Club had submitted to the EPA in 2016. The EPA's analysis determined that the Big Brown Steam Electric Station and the Monticello Steam Electric Station were responsible for almost 100% of the SO₂ impacts on the maximum modeled concentrations in their respective areas. TCEQ was required to submit SIP revisions for the nonattainment areas by July 13, 2018. However, due to ongoing litigation challenging these designations as well as an EPA proposed error correction that would have revised the designations if finalized (86 FR 34187, June 29, 2021), Texas did not submit the SIP elements required for the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas to the EPA by the submittal deadline.

On October 6, 2017, Luminant, a subsidiary of Vistra Energy, announced plans to retire the Monticello Steam Electric Station in Titus County. Shortly after, on October 13, 2017, Luminant announced plans to retire the Big Brown Steam Electric Station in Freestone County, and to close both facilities at the beginning of 2018. Permits for Big Brown Steam Electric Station were voided on December 1, 2020. Monticello Steam Electric Station changed ownership from Luminant to Golden Eagle Development on June 22, 2020. Golden Eagle voided the permits for the Monticello Steam Electric Station on July 14, 2020. These facilities were the major SO₂ emissions sources in their respective nonattainment areas.

On June 30, 2020, the TCEQ sent a letter to the EPA requesting clean data determinations (CDD) for the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas. The TCEQ cited the retirements of both the Big Brown Steam Electric Station and the Monticello Steam Electric Station and preliminary SO₂ design values below the NAAQS in each nonattainment area. Monitoring data used to determine those preliminary design values were obtained from a source-oriented monitor in Freestone County (the Fairfield Farm to Market (FM) 2570 Ward Rand monitor located approximately three miles southwest of the Big Brown Steam Electric Station), and a monitor in Titus County source-oriented to the Welsh Power Plant (the Cookville FM 4855 monitor located approximately 12 miles east of the Monticello Steam Electric Station).

On August 10, 2020, in response to a notice of intent to sue by the Sierra Club, the EPA published a final action finding that Texas failed to submit the required nonattainment area SIP revisions for the 2010 SO₂ NAAQS (85 FR 48111). This action triggered an EPA obligation under FCAA, §110(c) to promulgate a federal implementation plan (FIP) anytime within two years of the finding of failure to submit if the state fails to meet the SIP planning requirements. If the EPA does not make a completeness determination by March 9, 2022 (18 months after the finding of failure to submit) of a Texas SIP

submission to address the deficiencies, then pursuant to FCAA, §179(a) and (b) and 40 Code of Federal Regulations §52.31, the emissions offset sanction identified in FCAA, §179(b)(2) will apply for the affected nonattainment areas. If the EPA does not determine that the state’s submittals are complete within six months after imposing the offset sanction, then the highway funding sanction will apply. If Texas submits the required SIP submittals and the EPA approves those submittals by September 9, 2022 (two years after the finding of failure to submit), then the EPA will not be required to promulgate a FIP.

On May 14, 2021, the EPA published final CDDs for the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas, suspending the following SIP planning requirements for the 2010 SO₂ NAAQS related to attainment: attainment demonstration, reasonable further progress plan, reasonably available control measures, reasonably available control technology, and contingency measures (86 FR 26401). These requirements are suspended for as long as the areas continue to attain the standard. The CDDs do not suspend the comprehensive emissions inventories and nonattainment new source review SIP requirements for 2010 SO₂ NAAQS nonattainment areas, which are addressed for the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas in this proposed SIP revision. A final CDD is not a redesignation to attainment under FCAA, §107(d)(3). However, the final CDDs support the request for redesignations and the maintenance plans included in this proposed SIP revision.

1.4 PUBLIC HEARING AND COMMENT INFORMATION

The commission will hold a public hearing for this proposed SIP revision at the following time and location.

Table 1-1: Public Hearing Information

City	Date	Time	Location
Austin	September 28, 2021	2:00 p.m. CDT	Virtual Hearing (Hearing registration details will be provided on the Texas SIP Revisions webpage by August 27, 2021 and in the formal hearing notice publication in the <i>Texas Register</i>)

The public comment period will open on August 27, 2021 and close on September 29, 2021. Written comments will be accepted via mail, fax, or through the [eComments](https://www6.tceq.texas.gov/rules/ecomments/) (https://www6.tceq.texas.gov/rules/ecomments/) system. All comments should reference the “Redesignation Request and Maintenance Plan for the Freestone-Anderson and Titus SO₂ NAAQS Nonattainment Areas” and should reference Project Number 2021-007-SIP-NR. Comments may be submitted to Mary Ann Cook, MC 206, State Implementation Plan Team, Air Quality Division, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087 or faxed to (512) 239-6188. Electronic comments must be submitted through the eComments system. File size restrictions may apply to comments being submitted via the eComments system. Comments must be received by September 29, 2021.

An electronic version of this proposed Redesignation Request and Maintenance Plan for the Freestone-Anderson and Titus 2010 SO₂ NAAQS Nonattainment Areas is

provided on the TCEQ's [Air Pollution from Sulfur Dioxide](https://www.tceq.texas.gov/airquality/sip/criteria-pollutants/sip-so2#latest-air-quality-planning) webpage (https://www.tceq.texas.gov/airquality/sip/criteria-pollutants/sip-so2#latest-air-quality-planning). An electronic version of the hearing notice will be available on the [Texas SIP Revisions](https://www.tceq.texas.gov/airquality/sip/siplans.html#prosips) webpage (https://www.tceq.texas.gov/airquality/sip/siplans.html#prosips).

1.5 SOCIAL AND ECONOMIC CONSIDERATIONS

Because rulemaking is not a part of this SIP revision, there are no changes that would impact society or the economy.

1.6 FISCAL AND MANPOWER RESOURCES

The TCEQ determined that its fiscal and manpower resources are adequate and will not be adversely affected through the implementation of this plan.

CHAPTER 2: REDESIGNATION REQUIREMENTS

2.1 INTRODUCTION

Section 107(d)(3)(E) of the Federal Clean Air Act (FCAA) states that the United States Environmental Protection Agency (EPA) can redesignate a nonattainment area to attainment if the following conditions are met:

- the EPA has determined that the National Ambient Air Quality Standard (NAAQS) has been attained;
- the applicable implementation plan has been fully approved by the EPA under FCAA, §110(k);
- the EPA has determined that the improvement in air quality is due to permanent and enforceable reductions in emissions;
- the state has met all applicable requirements for the area under §110 and Part D of the FCAA; and
- the EPA has fully approved a maintenance plan, including a contingency plan, for the area under FCAA, §175A.

This chapter describes how the Freestone-Anderson and Titus nonattainment areas meet the FCAA redesignation requirements for the 2010 sulfur dioxide (SO₂) NAAQS.

2.2 ATTAINMENT OF THE 2010 SO₂ NAAQS

On June 30, 2020, the Texas Commission on Environmental Quality (TCEQ) sent a letter to the EPA requesting clean data determinations (CDD) for the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas designated nonattainment in Round 2. The letter asked the EPA to consider the permanent retirement of the Big Brown Steam Electric Station in Freestone County and the Monticello Steam Electric Station in Titus County in its determinations. These shutdowns eliminated the only significant SO₂ emissions sources in each nonattainment area.

The letter also asked the EPA to consider quality-assured and certified ambient air monitoring data from 2017 through 2019 that showed decreases from previous years in the ambient SO₂ concentrations that resulted from the closures of the Big Brown Steam Electric Station in Freestone County and the Monticello Steam Electric Station in Titus County. At the time the CDD request was submitted, the Fairfield Farm to Market (FM) 2570 Ward Ranch monitor, located approximately three miles southwest of the Big Brown Steam Electric Station, had a preliminary design value of 41 parts per billion (ppb) for 2019—the first full year after the facility shut down. The Cookville FM 4855 monitor, located approximately 12 miles east of the Monticello Steam Electric Station and source-oriented to the still-operational Welsh power plant in Titus County, had a preliminary 2019 design value of 28 ppb. Both preliminary design values were below the 2010 SO₂ NAAQS of 75 ppb.

On September 25, 2020, the EPA proposed CDDs for the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas (85 *Federal Register* (FR) 60407). The EPA's 2014 SO₂ nonattainment area state implementation plan (SIP) guidance states that in order for a nonattainment area that was designated based on modeling data to be

determined as attaining the NAAQS, additional dispersion modeling may be required.² However, the EPA has implemented a different analysis for areas designated based on modeling where the primary cause of the NAAQS violation has been permanently shut down, as is the case in both the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas. In these cases, the EPA stated that “the permanent cessation of SO₂ emissions from primary sources may be sufficient to determine that the area is attaining the NAAQS, if available monitoring, emissions and modeling data for the area also support the finding of attainment” (85 FR 60410).

On May 14, 2021, the EPA published final CDDs for the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas (86 FR 26401). The EPA concluded that each area is currently in attainment of the 2010 SO₂ NAAQS per the EPA’s Clean Data Policy. The EPA stated that Texas had submitted sufficient monitoring data in each area to support a determination of clean data. The EPA based its final decision on the permanent shutdown of both Big Brown Steam Electric Station and Monticello Steam Electric Station, a detailed analysis of monitoring data, consideration of available modeling data, and emission inventory data. The final CDDs affirm that the Freestone-Anderson and Titus County areas are attaining the 2010 SO₂ NAAQS.

2.3 SIP APPROVABILITY UNDER SECTION 110(K) OF THE FCAA

The SIP revision for the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas must be fully approved under FCAA, §110(k). This section of the FCAA contains the requirements for SIP completeness; deadlines; full, partial, and conditional approval; and disapproval. Approval action on SIP elements and the redesignation request may occur simultaneously.³ For the nonattainment areas to be redesignated to attainment, Texas must meet all applicable requirements of the FCAA, §110 and Part D.

2.3.1 Section 110 General SIP Requirements

Section 110(a) of the FCAA contains general SIP requirements for the NAAQS. Within three years of the promulgation of a new NAAQS, states are required to submit an infrastructure SIP that provides for implementation, maintenance, and enforcement of the NAAQS. On April 23, 2013, the TCEQ adopted an infrastructure and transport SIP revision for the 2010 SO₂ NAAQS. This SIP revision was submitted to the EPA on May 9, 2013.

On January 11, 2016, the EPA approved portions of the SIP revision that address the requirements of FCAA, §110(a)(1) and (2) as they apply to the 2010 SO₂ NAAQS (81 FR 1127). This action did not address portions of the SIP revision pertaining to FCAA, §110(a)(2)(D)(i)(I) concerning interstate pollution transport affecting attainment and maintenance of the NAAQS, or §110(a)(2)(D)(i)(II) concerning interstate visibility transport. The portions of the SIP revision pertaining to FCAA, §110(a)(2)(D)(i)(I) were

² USEPA: “Guidance for 1-hour SO₂ Nonattainment Area SIP Submissions” Memorandum from Steve Page, Director, EPA Office of Air Quality Planning and Standards to the EPA Air Division Directors, April 23, 2014. Provides guidance for the application of the clean data policy to the 2010 1-hour primary SO₂ NAAQS.

³ USEPA: “Procedures for Processing Requests to Redesignated Areas to Attainment” Memorandum from John Calcagni, Director, Air Quality Management Division, September 4, 1992.

deemed complete by operation of law on November 9, 2013. On October 17, 2017, the EPA published a final determination that the Regional Haze and Interstate Visibility Transport Federal Implementation Plan (FIP) satisfied the FCAA, §110(a)(2)(D)(i)(II) requirement (82 FR 48324). On August 12, 2020, the EPA finalized amended versions of an intrastate SO₂ trading program as an alternative to best available retrofit technology (BART) requirements for certain sources in Texas (85 FR 49170).

Texas meets all requirements of FCAA, §110 that were applicable prior to submittal of this redesignation request, as identified in Table 2-1: *Status of Texas FCAA, §110(a)(2) 2010 SO₂ NAAQS Infrastructure Requirements*.

Table 2-1: Status of Texas FCAA, §110(a)(2) 2010 SO₂ NAAQS Infrastructure Requirements

SIP Requirement	Latest EPA Action	Date of Latest Action (Effective Date)	Federal Register (FR) Citation
Section 110(a)(2)(A) Emission limits and other control measures	Approval	02/10/2016	81 FR 1127
Section 110(a)(2)(B) Ambient air quality monitoring/data system	Approval	02/10/2016	81 FR 1127
Section 110(a)(2)(C) Program for enforcement of control measures	Approval	02/10/2016	81 FR 1127
Section 110(a)(2)(D)(i) - I Prong 1: Interstate transport - significant contribution	Completeness	11/09/2013	
Section 110(a)(2)(D)(i) - I Prong 2: Interstate transport - interfere with maintenance	Completeness	11/09/2013	
Section 110(a)(2)(D)(i) - II Prong 3: Interstate transport - prevention of significant deterioration	Approval	02/10/2016	81 FR 1127
Section 110(a)(2)(D)(i) - II Prong 4: Interstate transport - protect visibility	Final FIP	11/16/2017	82 FR 48324
Section 110(a)(2)(D)(ii) Interstate and international pollution abatement	Approval	02/10/2016	81 FR 1127
Section 110(a)(2)(E) Adequate resources	Approval	02/10/2016	81 FR 1127
Section 110(a)(2)(F) Stationary source monitoring system	Approval	02/10/2016	81 FR 1127
Section 110(a)(2)(G) Emergency power	Approval	02/10/2016	81 FR 1127
Section 110(a)(2)(H) Future SIP revisions	Approval	02/10/2016	81 FR 1127

SIP Requirement	Latest EPA Action	Date of Latest Action (Effective Date)	Federal Register (FR) Citation
Section 110(a)(2)(J) Consultation with government officials; Public notification; PSD and visibility protection	Approval	02/10/2016	81 FR 1127
Section 110(a)(2)(K) Air quality modeling/data	Approval	02/10/2016	81 FR 1127
Section 110(a)(2)(L) Permitting fees	Approval	02/10/2016	81 FR 1127
Section 110(a)(2)(M) Consultation/participation by affected local entities	Approval	02/10/2016	81 FR 1127

Source: EPA's [Status of Texas State SIP Infrastructure Requirements](https://www3.epa.gov/airquality/urbanair/sipstatus/reports/tx_infrabypoll.html#x110_a_2_so2_2010_) webpage (https://www3.epa.gov/airquality/urbanair/sipstatus/reports/tx_infrabypoll.html#x110_a_2_so2_2010_)

2.3.2 Part D Requirements

Subpart 1 of Part D of the FCAA consists of general requirements applicable to all areas designated nonattainment for any NAAQS. Subpart 5 of Part D contains more specific requirements applicable to the SO₂ NAAQS. FCAA, §172 general SIP requirements and the SO₂-specific planning requirements of FCAA, §191 and §192 include an emissions inventory, attainment demonstration, reasonably available control technology (RACT), reasonably available control measures (RACM), enforceable emission limitations and control measures, reasonable further progress (RFP) demonstration, nonattainment new source review (NNSR), and contingency measures. Texas did not submit any SIP elements required under Part D by the July 13, 2018 submittal deadline.

The EPA's "Clean Data Policy for the Fine Particle NAAQS" describes the SIP planning requirements for nonattainment areas that attain the NAAQS but have not yet been redesignated to attainment.⁴ Additional EPA rulemakings codify the Clean Data Policy for ozone in the final 1997 eight-hour ozone NAAQS implementation rule (70 FR 71612, November 29, 2005) and for fine particulate matter (PM_{2.5}) in the final 2012 PM_{2.5} NAAQS SIP requirements rule (81 FR 58009, August 24, 2016). On April 23, 2014, the EPA issued a memorandum extending the Clean Data Policy to the 2010 SO₂ NAAQS.⁵ Under the Clean Data Policy, the SIP requirements relating to attainment demonstrations, implementation of RACT and RACM, RFP demonstrations, and contingency measures are suspended as long as air quality in the area continues to meet the relevant NAAQS. The NNSR and emissions inventory requirements are not suspended under a CDD and are both addressed in this SIP revision.

On May 14, 2021, the EPA published CDDs for both the Freestone-Anderson and the Titus 2010 SO₂ NAAQS nonattainment areas (86 FR 26401). As a result of these CDDs, Texas is not required to submit attainment demonstrations and associated RACT and

⁴ USEPA: "Clean Data Policy for the Fine Particle National Ambient Air Quality Standards" Memorandum from Steve Page, Director, EPA Office of Air Quality Planning and Standards to the EPA Air Division Directors, December 14, 2004.

⁵ Guidance for 1-Hour SO₂ Nonattainment Area SIP Submissions, April 23, 2014.

RACM, RFP demonstrations, or contingency plans for these areas. This redesignation request and maintenance plan SIP revision addresses the Part D SIP requirements not suspended by the CDDs, being the NNSR and emissions inventory requirements. The NNSR requirements are addressed in Section 2.3.2.1: *NNSR Certification Statement*, and comprehensive emissions inventory information is provided in Chapter 3: *Maintenance Demonstration*.

2.3.2.1 NNSR Certification Statement

SO₂ NAAQS nonattainment area SIPs must include provisions to require permits for the construction and operation of new or modified stationary sources. Major stationary sources in SO₂ nonattainment areas are those sources emitting at least 100 tons per year of SO₂. An NSR permitting program for nonattainment areas is required by FCAA, §172(c)(5) and §173, and further defined in 40 Code of Federal Regulations (CFR) 51, Subpart I (Review of New Sources and Modifications). Under these requirements, new major sources or major modifications at existing sources in an SO₂ nonattainment area must comply with the lowest achievable emissions rate and obtain sufficient emissions offsets. NNSR permits for SO₂ authorize construction of new major sources or major modifications of existing sources of SO₂ in an area that is designated nonattainment for the SO₂ NAAQS. The NSR offset ratio for SO₂ nonattainment areas is 1.00:1. The EPA initially approved Texas' NNSR regulation for SO₂ on November 27, 1995 (60 FR 49781). The TCEQ determined that because the Texas SIP already includes 30 Texas Administrative Code (TAC) §116.12 (Nonattainment and Prevention of Significant Deterioration Review Definitions) and 30 TAC §116.151 (New Major Source or Major Modification in Nonattainment Area Other Than Ozone), the NNSR SIP requirements are met for Texas for the 2010 SO₂ NAAQS for the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas. Further, the TCEQ already certified that Texas has EPA-approved rules that cover NNSR requirements with the timely-submitted 2010 SO₂ NAAQS Infrastructure and Transport SIP Revision.

2.4 PERMANENT AND ENFORCEABLE EMISSIONS REDUCTIONS

In the Freestone-Anderson 2010 SO₂ NAAQS nonattainment area, the Big Brown Steam Electric Station coal-fired steam electric generating Units 1 and 2 were permanently retired on February 12, 2018. By letter dated May 24, 2018, Luminant Generation Company, LLC asked the TCEQ to void the Title V permit, Federal Operating Permit (FOP) 065, and it was voided by the TCEQ on August 29, 2018. A letter was submitted by Luminant to the TCEQ to void Big Brown Steam Electric Station's individual NSR permits (17891, 18744, 45420, 53205, 54810, 56445, 56447, 72206, 83646, 83647, 85296, 94619, 95214, 96276, 99047, 99050, 106862, 108990, 112207, and 148918). On March 28, 2018, the TCEQ voided all NSR authorizations for Big Brown Steam Electric Station's coal-fired steam electric generating Units 1 and 2 and certain other facilities, as requested by Luminant Generation Company, LLC. On December 20, 2019, the Big Brown Steam Electric Station came under new ownership. Falcon Development, LLC acquired the site from Luminant Generation Company, LLC on December 20, 2019. On June 30, 2020, Falcon Development, LLC requested that the TCEQ void the remaining NSR permit authorizations (17891, 18744, 56447, 106862, and 112207) that were maintained while closure activities were completed. On June 30, 2020, these remaining

NSR authorizations were voided. On April 18, 2021, the facility was permanently demolished by the current owners.⁶

In the Titus 2010 SO₂ NAAQS nonattainment area, Luminant Generation Company, LLC permanently retired the Monticello Steam Electric Station coal-fired steam electric generating Units 1, 2, and 3 on December 31, 2017. Luminant Generation Company, LLC filed to void the Monticello Steam Electric Station Title V permit, FOP 64, on May 23, 2018, and it was voided by the TCEQ on August 3, 2018. Luminant Generation Company, LLC submitted a letter on February 9, 2018, asking the TCEQ to void individual NSR permits (2401, 26740, 45432, 54808, 56384, 71238, 85294, 95215, 104897, 105738, 146220, 83645, and 83640). On February 14, 2018, the TCEQ voided all NSR authorizations for Monticello Steam Electric Station Units 1, 2, and 3 and certain other facilities, as requested by Luminant Generation Company, LLC. Golden Eagle Development, LLC acquired the site from Luminant Generation Company, LLC on December 20, 2019. On July 14, 2020, Golden Eagle Development, LLC asked the TCEQ to void the remaining NSR permit authorizations (146278, 2399, 140265, 137864, 56387, 54408, 112334, and 104210) that were maintained while closure activities were completed. On July 14, 2020, these remaining NSR authorizations were voided.

2.5 SECTION 175A REQUIREMENTS FOR MAINTENANCE PLANS

Section 107(d)(3)(E)(iv) of the FCAA stipulates that for an area to be redesignated to attainment from nonattainment, the EPA must fully approve a maintenance plan meeting the requirements of FCAA, §175(A). Section 175A of the FCAA outlines the requirements of a plan to provide for the maintenance of the relevant NAAQS in the area or areas for at least 10 years after redesignation. The remainder of this SIP revision fulfills those maintenance plan requirements of FCAA, §175A and contains the following elements for both the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas:

- attainment emissions inventory;
- maintenance demonstration;
- verification of continued attainment;
- monitoring network; and
- contingency plan.

⁶ “Boom heard Sunday morning demolition of Big Brown Power Plant” *Palestine Herald-Press*, April 18, 2021.

CHAPTER 3: MAINTENANCE DEMONSTRATION

3.1 INTRODUCTION

This proposed state implementation plan (SIP) revision demonstrates that both the Freestone-Anderson and the Titus nonattainment areas will remain in attainment of the 2010 sulfur dioxide (SO₂) National Ambient Air Quality Standard (NAAQS) for the 10-year period following the date that the areas are redesignated to attainment by the United States Environmental Protection Agency (EPA), as required by the Federal Clean Air Act (FCAA), §175A. The maintenance demonstration is satisfied if the state demonstrates that future SO₂ emissions levels are not expected to result in exceedances of the 2010 SO₂ NAAQS.

Since redesignation is contingent upon the EPA's approval of this maintenance plan, the Texas Commission on Environmental Quality (TCEQ) projected SO₂ emissions to a future year of 2034, referred to as the horizon year. Setting the horizon year at 2034 satisfies the 10-year FCAA requirement for maintenance plans. It also allows adequate time for EPA review and approval of the maintenance plan and redesignation of the area to attainment.

The most current periodic emissions inventories (EIs) data were analyzed as part of this maintenance demonstration. TCEQ chose the year 2017 as the base year for the analyses presented in this chapter because it was the most recent periodic inventory year available to develop the EIs for this proposed SIP revision. At the time of preparation of this SIP revision, the 2020 periodic EIs were still under development by TCEQ in accordance with the EPA's Air Emissions Reporting Requirements (AERR) (40 Code of Federal Regulations Part 51, Subpart A). Section 3.3: *General Emissions Inventory Development and 2017 Base Year* provides details on the base year EI development.

3.2 HISTORICAL EMISSIONS INVENTORY TRENDS

For the historical period 2011 through 2019, beginning prior to and including the 2017 base year, the overall anthropogenic SO₂ emissions in both the Freestone-Anderson and the Titus 2010 SO₂ NAAQS nonattainment areas declined substantially. As demonstrated in Figure 3-1: *Freestone-Anderson Nonattainment Area Historical SO₂ Emissions Trends* and Figure 3-2: *Titus Nonattainment Area Historical SO₂ Emissions Trends*, SO₂ emissions have decreased by over 99% in each of the nonattainment areas. These reductions are due to the shutdown of the coal-fired electric generating units in the nonattainment areas. Details of the shutdowns of the Big Brown Steam Electric Station and the Monticello Steam Electric Station are provided in Section 2.4: *Permanent and Enforceable Emissions Reductions*.

The graphs below reflect only point source emissions since area, non-road mobile, and on-road mobile emissions are less than 0.01% of the base year point source emissions.

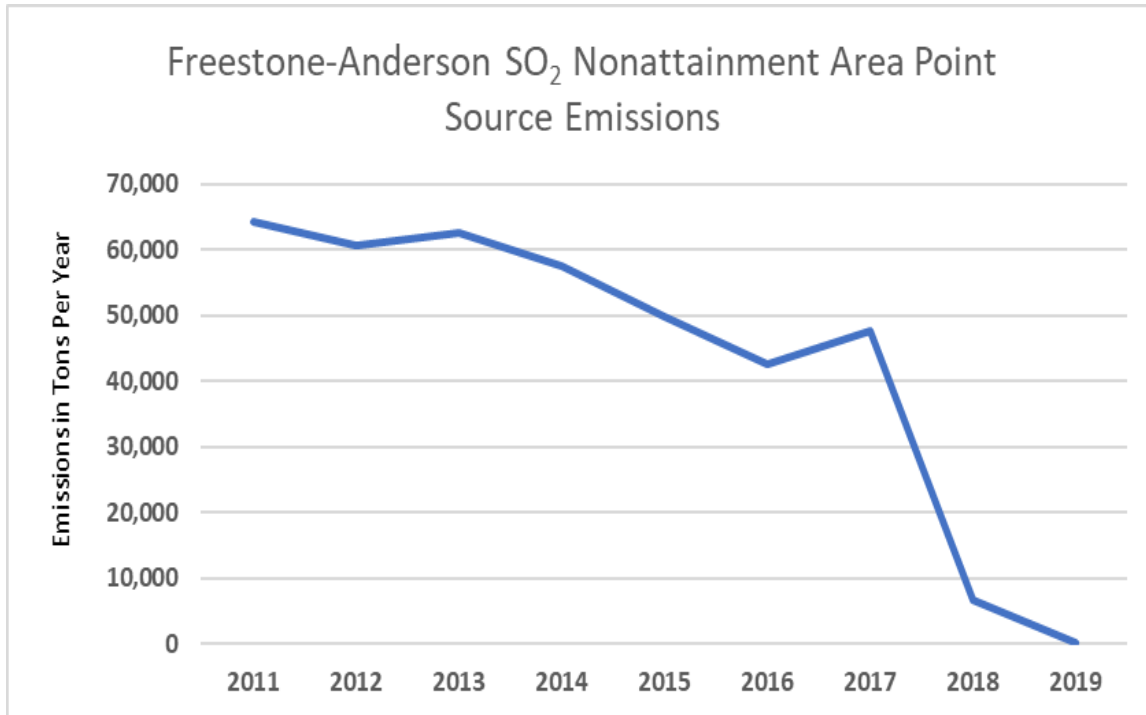


Figure 3-1: Freestone-Anderson Nonattainment Area Historical SO₂ Emissions Trends

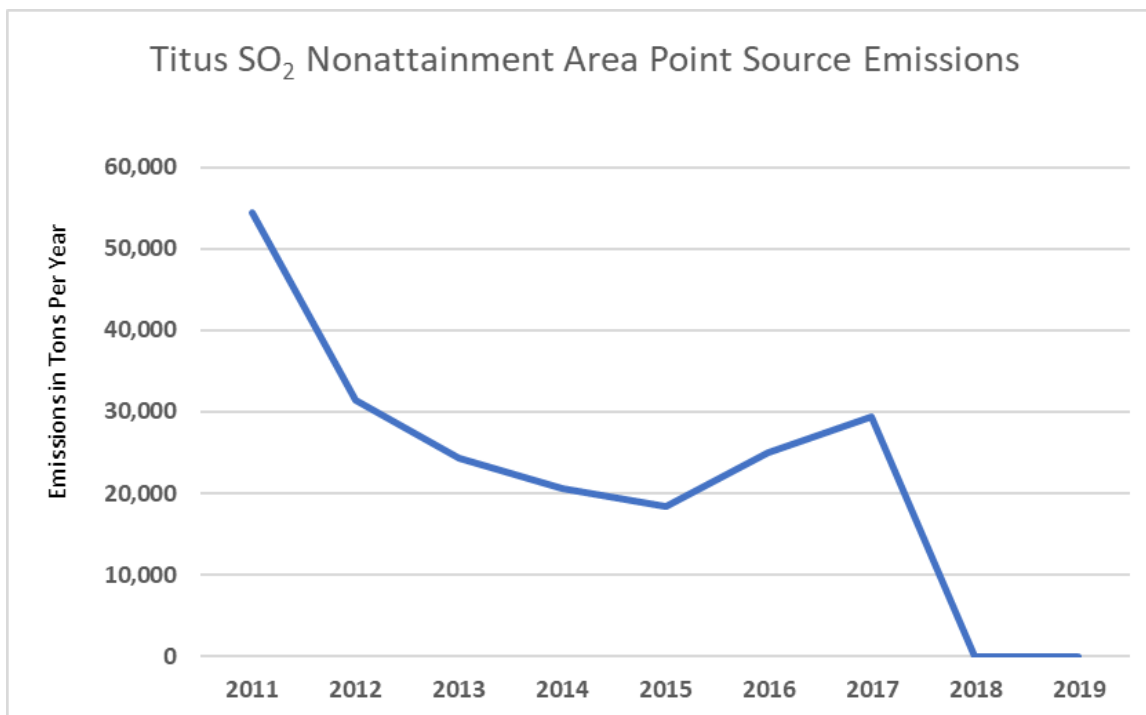


Figure 3-2: Titus Nonattainment Area Historical SO₂ Emissions Trends

3.3 GENERAL EMISSIONS INVENTORY DEVELOPMENT AND 2017 BASE YEAR EMISSIONS INVENTORY

The 1990 FCAA Amendments require that EIs be prepared for SO₂ nonattainment areas. An SO₂ EI must identify the emissions source types present in an area, the amount emitted, and the types of processes and control devices employed at stationary sources or other source categories. The TCEQ maintains an inventory of current information for sources of SO₂ emissions. This inventory identifies the types of emissions sources present in an area, the amount of each pollutant emitted, and the types of processes and control devices employed at each facility or source category. The total anthropogenic inventory of SO₂ emissions for an area is derived from estimates developed for three general categories of emissions sources: point, area, and mobile (both non-road and on-road). The EI also provides data for a variety of air quality planning tasks, including establishing baseline emissions levels, calculating reduction targets, control strategy development for achieving the required emissions reductions, the emissions inputs used in the air quality simulation models, and tracking the actual emissions reductions against the established emissions growth and control budgets.

The TCEQ SO₂ nonattainment area EIs provide the tons of SO₂ emitted annually from anthropogenic sources. Consistent with a September 4, 1992 EPA memorandum entitled *Procedures for Processing Requests to Redesignate Areas to Attainment*, the attainment EI base year may be any one of the three years used to determine the design value for the attainment year. On May 14, 2021, the EPA published clean data determinations for the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas, concluding that each area attained the 2010 SO₂ NAAQS based on 2017 through 2019 certified ambient monitoring data (86 *Federal Register* 26401). The TCEQ selected 2017 as the attainment EI base year since it is one of the three years used to determine the design value for the 2019 attainment year. The 2017 EI is the most recent available periodic inventory year and is also the year of designation.

The total SO₂ EIs for the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas were developed for four general categories of anthropogenic emissions sources, which are detailed in Section 3.3.1: *Point Sources*, Section 3.3.2: *Area Sources*, Section 3.3.3: *Non-Road Mobile Sources*, and Section 3.3.4: *On-Road Mobile Sources*. Summaries of the 2017 SO₂ emissions by source type are provided in Section 3.5: *Emissions Summaries*.

3.3.1 Point Sources

Point source emissions data are collected annually from sites that meet the reporting requirements of 30 Texas Administrative Code (TAC) §101.10. The TCEQ provides detailed reporting instructions and tools for completing and submitting an EI. Companies submit EI data using a Web-based system called the Annual Emissions Inventory Report System. Companies are required to report emissions data and to provide sample calculations used to determine the emissions. Information characterizing the process equipment, the abatement units, and the emissions points is also required. Per the FCAA, §182(a)(3)(B), company representatives certify that reported emissions are true, accurate, and that they fully represent emissions that occurred during the calendar year to the best of the representative's knowledge.

All data submitted in the EI are reviewed for quality assurance purposes and then stored in the State of Texas Air Reporting System (STARS) database. The TCEQ's [Point Source Emissions Inventory](https://www.tceq.texas.gov/airquality/point-source-ei/psei.html) webpage (https://www.tceq.texas.gov/airquality/point-source-ei/psei.html) contains guidance documents and historical point source emissions data. Additional information is available upon request from the TCEQ's Air Quality Division.

3.3.1.1 2017 Base Year Emissions Inventory

The TCEQ extracted the 2017 point source inventory data from STARS on March 19, 2021. The extracted data include annual emissions of SO₂ reported for point sources located within the boundaries of the Freestone-Anderson and Titus nonattainment areas.

Stationary point sources comprised over 99% of the base year SO₂ emissions in the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas. The Freestone-Anderson 2010 SO₂ NAAQS nonattainment area boundaries encompass portions of Freestone and Anderson Counties, where the primary source of SO₂ emissions, Big Brown Steam Electric Station (Regulated Entity Reference Number [RN] RN101198059), was located. The Titus 2010 SO₂ NAAQS nonattainment area boundaries encompass portions of Titus County, where the primary source of SO₂ emissions, Monticello Steam Electric Station (RN102285921), was located. The Big Brown and Monticello Steam Electric Stations were both coal-fired power plants. The Freestone Energy Center (RN102333853), a natural gas-fired power plant, is the only other SO₂ point source located in the Freestone-Anderson nonattainment area, but it is not a major source of SO₂. No other SO₂ point sources are located in the Titus nonattainment area.

A summary of the base year point source SO₂ EIs is presented in Section 3.5 of this proposed SIP revision.

3.3.2 Area Sources

Stationary emissions sources that do not meet the reporting requirements for point sources are classified as area sources. Area sources are small-scale stationary industrial, commercial, and residential sources that use materials or perform processes that generate emissions. Examples of typical SO₂ emissions sources include upstream oil and gas flares, compressor engines, and heaters; stationary source fossil fuel combustion at residences and businesses; outdoor refuse burning; and agricultural crop burning.

Per EPA rule and guidance, area source emissions are calculated as county-wide totals rather than as individual sources. Area source emissions are typically calculated by multiplying an EPA- or TCEQ-developed emissions factor (emissions per unit of activity) by the appropriate activity or activity surrogate responsible for generating emissions. Population is one of the more commonly used activity surrogates for area source calculations. Other activity data that are commonly used include the amount of gasoline sold in an area, employment by industry type, and crude oil and natural gas production.

The emissions data for the different area source categories are developed, quality assured, stored in the Texas Air Emissions Repository database system, and compiled to develop the statewide area source EI.

3.3.2.1 2017 Base Year Emissions Inventory

The 2017 area source EIs were developed in accordance with the requirements of the AERR rule. The 2017 EIs were developed using EPA-generated EIs; TCEQ-contracted projects to develop EIs; TCEQ staff projects to develop EIs; and projecting 2014 EIs by applying growth factors derived from Eastern Research Group (ERG) study data, the [Economy and Consumer Credit Analytics](http://www.economy.com/default.asp) website (<http://www.economy.com/default.asp>), and the United States Energy Information Administration's *Annual Energy Outlook* publication. The documentation for the development of the ERG study projection factors is provided in Appendix A: *Growth Factors for Area and Point Sources*.

The EPA developed EIs for states to use for many area source categories as part of the National Emissions Inventory (NEI). The states access these individual EIs through the EPA's [2017 National Emissions Inventory \(NEI\) Data](https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data) webpage (<https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data>). These source categories include but are not limited to industrial coatings; degreasing; residential, commercial/institutional, and industrial fuel use; commercial cooking; aviation fuel use; and consumer products. For some source categories, the TCEQ developed state-specific emissions estimates by acquiring current state-specific activity data and applying appropriate emissions factors. These source categories include, but are not limited to, gasoline storage tanks, structure fires, dry cleaners, and automobile fires.

The TCEQ committed significant resources to improve the oil and gas area source inventory categories for the 2017 base year EIs. The improvements included the development and refinement of a state-specific oil and gas area source emissions calculator. This oil and gas area source emissions calculator uses county-level production and local equipment activity data with local emissions requirements to estimate emissions from individual production categories, including compressor engines, condensate and oil storage tanks, loading operations, heaters, and dehydrators. The documentation for the development of the oil and gas emissions calculator can be found in Appendix B: *Characterization of Oil and Gas Production Equipment and Develop a Methodology to Estimate Statewide Emissions*. A significant improvement made to the oil and gas calculator for the 2017 base year inventories was the development of refined emissions factors for oil and gas wellhead flaring. County-level factors for the flared gases were developed using the amount of flared gas from each field and the hydrogen sulfide (H₂S) field concentrations from the [Railroad Commission of Texas \(RRC\)](https://www.rrc.state.tx.us/oil-and-gas/research-and-statistics/field-data/hydrogen-sulfide-h2s/) website (<https://www.rrc.state.tx.us/oil-and-gas/research-and-statistics/field-data/hydrogen-sulfide-h2s/>). This improved the resulting SO₂ emissions estimates from oil and gas wellhead flaring.

Another significant improvement made for the 2017 base year EIs was the development of a Texas-specific industrial, commercial, and institutional (ICI) combustion emissions calculator. This improved upon the default calculations and parameters provided by the EPA for these fuel combustion sources. The

documentation for the development of the ICI combustion emissions calculator is provided in Appendix C: *Industrial, Commercial, and Institutional (ICI) Fuel Use Study*.

Quality assurance of area source emissions involves ensuring that the activity data used for each category are current and valid. Data such as current population figures, fuel usage, and material usage were updated and the EPA guidance on emissions factors was used. Other routine efforts such as checking calculations for errors and conducting reasonableness and completeness checks were implemented.

A summary of the base year inventories for area source SO₂ emissions is presented in Section 3.5 of this proposed SIP revision.

3.3.3 Non-Road Mobile Sources

Non-road vehicles do not normally operate on roads or highways and are often referred to as off-road or off-highway vehicles. Non-road emissions sources include agricultural equipment, commercial and industrial equipment, construction and mining equipment, lawn and garden equipment, aircraft and airport equipment, locomotives, and drilling rigs.

For this proposed SIP revision, EIs for non-road sources were developed for the following subcategories: NONROAD model categories, airports, locomotives, and drilling rigs used in upstream oil and gas exploration activities. The airport subcategory includes estimates for total emissions from the aircraft, auxiliary power units (APU), and ground support equipment (GSE) subcategories. The following sections describe the emissions estimation methods used for the non-road mobile source subcategories.

A summary of the non-road mobile source inventories is presented in Section 3.5 of this proposed SIP revision.

3.3.3.1 NONROAD Model Categories

The Motor Vehicle Emission Simulator 3 (MOVES3) model is the EPA's latest mobile source emissions model for estimating non-road source category emissions. However, the EPA did not make any significant non-road emissions calculations updates between the previous version of the model, MOVES2014b, and the new version, MOVES3; the two models generate essentially identical non-road emissions. Therefore, the TCEQ used the most recent Texas-specific utility for the non-road mobile component of MOVES2014b model, called Texas NONROAD version 2.1 (TexN2.1), to calculate emissions from all non-road mobile source equipment and recreational vehicles, except for airports, locomotives, and drilling rigs used in upstream oil and gas exploration activities.

Because emissions for airports and locomotives are not included in either the MOVES3 model or the TexN2.1 utility, the emissions for these categories are estimated using other EPA-approved methods and guidance.

In past years, equipment survey studies were conducted that focused on various equipment categories operating in different areas of Texas, including diesel construction equipment, liquid propane gas-powered forklifts, and agricultural equipment. The resulting survey data contributed to the updating of inputs to the

TexN utility to accurately estimate non-road emissions for the State of Texas instead of using the national default values in the EPA's MOVES model.

The TexN2.1 utility was recently updated for select non-road diesel equipment profiles, equipment populations, Texas-specific fuel data, and growth factors for the full range of non-road equipment categories contained within the utility for 2013 through 2050 to improve the accuracy of future activity and emissions estimates. More information regarding the updates and development for the TexN2.1 utility is provided in the ERG report in Appendix D: *TexN2.1 Utility Diesel Equipment Profile and Growth Factor Updates for Use with MOVES*.

2017 Base Year Emissions Inventory

TCEQ staff developed the base year 2017 non-road model category SO₂ emissions for this proposed SIP revision using the TexN2.1 utility set for fully controlled run scenarios that used 2017 meteorological input data.

3.3.3.2 Drilling Rigs

Although emissions for drilling rig diesel engines used in upstream oil and gas exploration activities are included in the TexN2.1 utility, alternate emissions estimates were developed for this source category to develop more accurate county-level inventories. The equipment populations for drilling rigs were set to zero in the TexN2.1 utility to avoid duplicating emissions.

Due to significant growth in the oil and gas exploration and production industry, a 2015 TCEQ-commissioned survey of oil and gas exploration and production companies was used to develop updated drilling rig emissions characterization profiles. The drilling rig emissions characterization profiles from this study were combined with county-level drilling activity data obtained from the RRC to develop the EI. The documentation of procedures used in developing the drilling rigs EI is provided in the ERG report in Appendix E: *2014 Statewide Drilling Rig Emissions Inventory with Updated Trends Inventories*.

2017 Base Year Emissions Inventory

The 2017 base year EI for drilling rig diesel engines used in upstream oil and gas exploration activities was developed using the results of a 2015 statewide inventory improvement study combined with 2017 RRC drilling activity data.

3.3.3.3 Locomotives

The locomotive EIs were developed from a TCEQ-commissioned study using EPA-accepted EI development methods. The locomotive EIs include line haul and yard emissions activity data from all Class I, II, and III locomotive activity and emissions by rail segment. The method and procedures used to develop the locomotive EIs for this proposed SIP revision are provided in the ERG report in Appendix F: *2014 Texas Statewide Locomotive Emissions Inventory and 2008 through 2040 Trend Inventories*.

2017 Base Year Emissions Inventory

The base year 2017 locomotive non-road mobile subcategory SO₂ emissions for this proposed SIP revision were taken from the 2017 trend EI developed as part of the ERG report in Appendix F.

3.3.3.4 Airports

The airport EIs were developed from TCEQ-commissioned studies using the Federal Aviation Administration (FAA) Aviation Environmental Design Tool (AEDT). The AEDT is the most recent FAA model for estimating airport emissions, and it replaced the FAA's Emissions and Dispersion Modeling System. The airport emissions categories used for this proposed SIP revision included aircraft (commercial air carriers, air taxis, general aviation, and military), APU, and GSE operations.

The method and procedures used to develop the airport EIs for this revision are provided in the ERG reports in Appendix G: *2017 Texas Statewide Aircraft Emissions Inventory* and Appendix H: *Development of Texas Statewide Aircraft Trend Emissions Inventories 2011 through 2045*.

2017 Base Year Emissions Inventory

The base year 2017 airport non-road mobile subcategory SO₂ emissions for this proposed SIP revision were taken from the 2017 statewide airport EI developed as part of the ERG report in Appendix G.

To develop the base year 2017 statewide airport EIs, 2017 activity data provided by local airports were compiled and supplemented with publicly available 2017 activity data as the basis for estimating emissions.

3.3.4 On-Road Mobile Sources

On-road mobile emissions sources consist of automobiles, trucks, motorcycles, and other motor vehicles traveling on public roadways in conjunction with off-network emissions, occurring outside public roadways. On-road mobile source SO₂ emissions are usually categorized as combustion-related emissions. Combustion-related emissions are estimated for vehicle engine exhaust. To calculate emissions, both the rate of emissions per unit of activity (emissions factors) and the number of units of activity must be determined.

Updated on-road EIs for this proposed SIP revision were developed using the EPA's mobile source emissions model, MOVES3, run in inventory mode. During a MOVES3 inventory mode run, emissions rates are first calculated and then applied to user supplied activity levels or EPA MOVES default activity levels. The MOVES3 model may be run using national default information or the default information may be modified to simulate specific data, such as the control programs, driving behavior, meteorological conditions, and vehicle characteristics. Because modifications to the national default values influence the emissions factors calculated internally by the MOVES3 model, parameters that are used in TCEQ EI development reflect local conditions to the extent that local values are available.

3.3.4.1 2017 Base Year Emissions Inventory

TCEQ staff developed the 2017 base year on-road mobile source category SO₂ emissions for this proposed SIP revision using the MOVES3 model. Values to reflect local conditions as well as local activity levels were used where available. Detailed information on the inputs and data sources used in the on-road EI development is provided in Appendix I: *MOVES3 On-road Inventory Development*.

The Federal Motor Vehicle Control Program (FMVCP) provides on-going reductions of SO₂ emissions from mobile sources. The FMVCP includes vehicle emissions certification standards as well as corresponding limits on fuel sulfur content. The limits on sulfur content for diesel and gasoline fuels contribute to maintenance of reduced SO₂ emissions from mobile sources.

A summary of the on-road source inventories is presented in Section 3.5 of this proposed SIP revision.

3.4 VERIFICATION OF CONTINUED ATTAINMENT AND HORIZON YEAR EMISSIONS INVENTORY

This proposed SIP revision demonstrates continued attainment using the method outlined in the EPA's redesignation guidance.⁷ Future emissions for the Freestone-Anderson and Titus nonattainment areas were projected or developed from the most recently available EIs for a source category to a horizon year of 2034. Details are provided in Section 3.4.1: *Point Sources*, Section 3.4.2: *Area Sources*, Section 3.4.3: *Non-Road Mobile Sources*, and Section 3.4.4: *On-Road Mobile Sources*. Summaries of the 2034 horizon year SO₂ emissions by source type are provided in Section 3.5.

Projecting emissions to 2034 aligns with the EPA's requirement of maintenance plans to demonstrate attainment for a 10-year period following the date of redesignation. The requirement for demonstration of continued attainment is satisfied when the state demonstrates that future SO₂ emissions levels are not expected to result in exceedances of the 2010 SO₂ NAAQS. To track progress of the Freestone-Anderson and Titus nonattainment areas toward continued attainment of the 2010 SO₂ NAAQS, the TCEQ will continue to develop and submit periodic EIs to the EPA every three years as required by the federal AERR rule.

3.4.1 Point Sources

In the Freestone-Anderson 2010 SO₂ NAAQS nonattainment area, the Big Brown Steam Electric Station coal-fired steam electric generating units located in Freestone County were demolished and the TCEQ permits voided. As a result, the 2034 horizon year projected emissions are zero for the Big Brown Steam Electric Station site.

At the time this proposed SIP revision was prepared, the Freestone Energy Center natural gas-fired electric generating plant was the only operational SO₂ point source within the Freestone-Anderson 2010 SO₂ NAAQS nonattainment area. The 2034 horizon year actual SO₂ emissions were projected and set equivalent to the Freestone Energy Center's permit allowable emissions (17.92 tons per year (tpy)).

In the Titus 2010 SO₂ NAAQS nonattainment area, the Monticello Steam Electric Station coal-fired steam electric generating units were shut down and the TCEQ permits voided. There are no other SO₂ point sources located in the nonattainment

⁷ Memorandum from John Calcagni, Director of Air Quality Management Division, September 4, 1992, *Procedures for Processing Requests to Redesignate Areas to Attainment*. EPA Office of Air Quality Planning and Standards.

portion of Titus County. Therefore, the 2034 horizon year projected emissions are zero for the Titus County 2010 SO₂ NAAQS nonattainment area.

The permit allowable and projected actual SO₂ emissions are summarized below in Table 3-1: *Permit Allowable and Projected Actual SO₂ Emissions in Tons Per Year for the Freestone-Anderson Nonattainment Area* and Table 3-2: *Permit Allowable and Projected Actual SO₂ Emissions in Tons Per Year for the Titus Nonattainment Area*.

Table 3-1: Permit Allowable and Projected Actual SO₂ Emissions in Tons Per Year for the Freestone-Anderson Nonattainment Area

County	Company	Permit Allowable	2034 Projected Actuals
Freestone	Big Brown Steam Electric Station	0	0
Freestone	Freestone Energy	17.92	17.92
Anderson	Not applicable	0	0

Table 3-2: Permit Allowable and Projected Actual SO₂ Emissions in Tons Per Year for the Titus Nonattainment Area

County	Company	Permit Allowable	2034 Projected Actuals
Titus	Monticello Steam Electric Station	0	0

A summary of the horizon year point source SO₂ EIs is presented in Section 3.5 of this proposed SIP revision.

3.4.2 Area Sources

Since 2017 is the most recently available periodic EI year, the TCEQ designated the 2017 EIs as the starting point for the 2034 horizon year EI projections for all area source categories except oil and gas sources. Since more recent activity data are available for oil and gas sources, the TCEQ updated the area source oil and gas EIs using 2019 RRC production data. These newer data reflect growth that has occurred since the 2017 base year and reflect more recent operations.

The updated 2034 horizon year EIs for the area source categories were developed using projection factors derived from Appendix A. The study in this appendix contains individual projection factors for each source category and for each forecasting year. This projection method is the EPA standard and accepted methodology for developing future year emissions inventories.

The 2034 area source EIs were developed by applying the selected emissions projection factor to the 2017 emissions for each area source category except oil and gas source categories; the 2034 area source EIs for oil and gas source categories were developed by applying the selected emissions projection factor to the 2019 emissions. No controls were incorporated into the horizon year inventories.

A summary of the horizon year SO₂ EIs for area sources is presented in Section 3.5 of this proposed SIP revision.

3.4.3 Non-Road Sources

The 2034 horizon year EIs for non-road sources were developed based on the details provided in the following subsections.

A summary of the horizon year SO₂ EIs for non-road mobile sources is presented in Section 3.5 of this proposed SIP revision.

3.4.3.1 NONROAD Model Categories

TCEQ staff developed the horizon year 2034 non-road model category SO₂ emissions for this proposed SIP revision using the TexN2.1 utility set for fully controlled run scenarios that used 2017 meteorological input data.

3.4.3.2 Drilling Rigs

The horizon year 2034 diesel drilling rig non-road mobile subcategory SO₂ emissions were based on 2019 drilling activity data (the most recently available activity data) combined with the 2034 year-specific emissions factors from the ERG report in Appendix E.

3.4.3.3 Locomotives

The horizon year 2034 locomotive non-road mobile subcategory SO₂ emissions were taken from the 2034 trend EI developed as part of the ERG report in Appendix F.

3.4.3.4 Airports

The horizon year 2034 airport non-road mobile subcategory SO₂ emissions were taken from the 2034 statewide airport trend EI developed as part of the ERG report in Appendix H. The 2017 statewide airport EI was used as the base year EI from which 2011 through 2045 trend EIs were projected, based on growth factors from the FAA's Terminal Area Forecast data.

3.4.4 On-Road Mobile Sources

TCEQ staff developed the 2034 horizon year on-road mobile source category SO₂ emissions for this proposed SIP revision using the MOVES3 model. Values to reflect local conditions as well as local activity levels were used when available, excluding meteorology and fuel inputs, which were held constant at 2017 levels. For more detailed information on the inputs and data sources used in the on-road EI development, see Appendix I.

The FMVCP provides on-going reductions of SO₂ emissions from mobile sources. The FMVCP limits on sulfur content for diesel and gasoline fuels contribute to maintenance of reduced SO₂ emissions from mobile sources.

A summary of the horizon year SO₂ EIs for on-road mobile sources is presented in Section 3.5.

3.5 EMISSIONS SUMMARIES

For the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas, the 2017 base year, and the 2034 horizon year emissions by source category, are presented in Table 3-3: *Freestone-Anderson Nonattainment Area SO₂ Emissions by Source Category in Tons Per Year*, and Table 3-4: *Titus Nonattainment Area SO₂*

Emissions by Source Category in Tons Per Year. These tables illustrate that in the horizon year of 2034, point sources contributed almost entirely to the SO₂ emissions decreases. Contributions from biogenic emissions are not included in the summaries because this analysis is limited to anthropogenic sources. Note: totals may differ by 0.01 tpy from the sum of the EI categories due to rounding.

Per EPA rule and guidance, the area, non-road mobile, and on-road mobile source emissions are calculated as county-wide totals for Freestone, Anderson, and Titus Counties. To obtain area, non-road mobile, and on-road mobile source emissions for the nonattainment areas, the county-level emissions were ratioed based on the 2010 population located within the portions of the nonattainment boundaries for each area. Details of the population ratios applied to the county-wide totals for the area, non-road mobile, and on-road mobile source categories are presented in Appendix J: *Population Ratios for Non-Point Sources.*

Table 3-3: Freestone-Anderson Nonattainment Area SO₂ Emissions by Source Category in Tons Per Year

Source Category	2017 Base Year	2034 Horizon Year
Point	47,644.21	17.92
Area	0.49	0.54
Non-road	0.06	0.05
On-road	0.94	0.90
Total	47,645.70	19.41

Table 3-4: Titus Nonattainment Area SO₂ Emissions by Source Category in Tons Per Year

Source Category	2017 Base Year	2034 Horizon Year
Point	29,412.15	0.00
Area	0.12	0.23
Non-road	0.003	0.003
On-road	0.02	0.02
Total	29,412.29	0.25

3.6 MAINTENANCE DEMONSTRATION CONCLUSION

Trend analysis using the 2017 base year and the 2034 horizon year emissions shows an overall decrease in SO₂ emissions of 47,626 tpy for the Freestone-Anderson 2010 SO₂ NAAQS nonattainment area, and an overall decrease in SO₂ emissions of 29,412 tpy for the Titus 2010 SO₂ NAAQS nonattainment area. For each of the nonattainment areas, this represents a 99.9% decrease in SO₂ emissions between the 2017 base year emissions and the 2034 horizon year emissions. Based on future emissions and historical trend emissions analysis, the Freestone-Anderson and Titus nonattainment areas are projected to show continued attainment of the 2010 SO₂ NAAQS through 2034.

CHAPTER 4: MONITORING NETWORK

4.1 MONITORING NETWORK AND REPORTING REQUIREMENTS

The Texas Commission on Environmental Quality (TCEQ) ambient air quality monitoring network provides monitoring data to characterize air quality based on the 2010 sulfur dioxide (SO₂) National Ambient Air Quality Standard (NAAQS). SO₂ monitors are managed in accordance with 40 Code of Federal Regulations (CFR) Part 58 to provide data to determine compliance or progress towards compliance with the 2010 SO₂ NAAQS. The SO₂ monitor site evaluation and selection process considers the SO₂ source's peak modeled impacts along with other monitor siting criteria, including power availability, site access, and 40 CFR Part 58, Appendix E siting criteria requirements.

The Freestone-Anderson area around the Big Brown Steam Electric Station facility and the Titus area around Monticello Steam Electric Station were designated nonattainment, effective January 12, 2017 (81 *Federal Register* (FR) 89870). The TCEQ deployed a special purpose SO₂ monitor near the Big Brown Steam Electric facility at the Fairfield Farm to Market (FM) 2570 Ward Ranch site (air quality system number 481611084) in Freestone County on October 30, 2017. No monitors were deployed in the area around Monticello Steam Electric Station in Titus County as the facility was shut down in late 2017. The Big Brown Steam Electric Station facility in the Freestone-Anderson area ceased operations in early 2018 and was subsequently demolished.

The TCEQ also deployed a State or Local Air Monitoring Station SO₂ monitor near the Welsh Power Plant at the Cookville FM 4855 site (air quality system number 484491078) in Titus County on December 7, 2016. Based on the three-year design value for this SO₂ monitor, the area surrounding the Welsh Power Plant was designated attainment/unclassifiable in Round 4 of the air quality designations for the 2010 primary SO₂ NAAQS, March 26, 2021 (86 FR 16055).

The TCEQ commits to maintaining an air monitoring network that meets regulatory requirements. The TCEQ continues to work with the United States Environmental Protection Agency through the air monitoring network review process, as required by 40 CFR Part 58, to determine: the adequacy of the federal air monitoring network, additional monitoring needs, and recommended monitor decommissions. Air monitoring data from the Fairfield FM 2570 Ward Ranch and Cookville FM 4855 SO₂ monitors are quality assured, reported, and certified according to 40 CFR Part 58.

CHAPTER 5: CONTINGENCY PLAN

5.1 INTRODUCTION

Section 175A(d) of the Federal Clean Air Act (FCAA) requires that maintenance plans include contingency provisions to promptly correct any violation of the National Ambient Air Quality Standard (NAAQS).

The United States Environmental Protection Agency (EPA) indicates in both its 2014 sulfur dioxide (SO₂) nonattainment area state implementation plan (SIP) guidance and previous SIP guidance regarding SO₂ contingency measures that in many cases, attainment revolves around compliance of a single source or a small set of sources with emission limits shown to provide for attainment and that FCAA, §175A does not explicitly require that contingency measures take effect without further action by the air agency in order for the maintenance plan to be approved.^{8,9} The EPA's 2014 SO₂ nonattainment area SIP guidance further states that the EPA interprets the contingency measures requirement to mean that a state has a comprehensive program to identify sources of violations of the SO₂ NAAQS and will undertake an aggressive follow-up for compliance and enforcement, including expedited procedures for establishing enforceable consent agreements pending the adoption of a revised SIP.

5.1.1 Existing State Stationary Source Control Measures

The Texas Commission on Environmental Quality (TCEQ) has implemented rules that limit and minimize emissions from sources of SO₂ emissions. Existing 30 Texas Administrative Code (TAC) Chapter 112 contains control requirements for sources of SO₂ emissions in Texas that were developed for a previous SO₂ NAAQS. The SO₂ control measures in 30 TAC Chapter 112, Subchapter A establish emission limits, monitoring, reporting, and recordkeeping requirements for a variety of source types, including solid fossil fuel-fired steam generators.

Because both the Big Brown Steam Electric Station and the Monticello Steam Electric Station are shut down and the new source review (NSR) authorizations for both sites are voided, the TCEQ does not expect any violations of the 2010 SO₂ NAAQS to occur in either the Freestone-Anderson nonattainment area or the Titus nonattainment area. If a regulated entity were to start operations of a new electric power generating plant or any other SO₂ point source at either of the decommissioned sites or elsewhere within either of the nonattainment areas, the regulated entity would be subject to the TCEQ's NSR air permitting program, under 30 TAC Chapter 116, for the authorization of construction of a new stationary source of air contaminants. If these nonattainment areas are redesignated to attainment, any new major source of SO₂ emissions would be subject to Prevention of Significant Deterioration (PSD) permitting requirements in accordance with 30 TAC Chapter 116 and 40 CFR Part 51. The regulated entity may be

⁸ USEPA: "Guidance for 1-hr SO₂ Nonattainment Area SIP Submissions" Memorandum from Steve Page, Director, EPA Office of Air Quality Planning and Standards to the EPA Air Division Directors, April 23, 2014.

⁹ General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990 published on April 16, 1992 (57 FR 13498).

subject to either 30 TAC Chapters 106 or 116 preconstruction authorization for new minor facilities.

5.2 CONTINGENCY MEASURES AND TRIGGER LEVEL

The major source of SO₂ emissions in the Freestone-Anderson 2010 SO₂ NAAQS nonattainment area was the Big Brown Steam Electric Station, and the Monticello Steam Electric Station was the major SO₂ emissions source in the Titus 2010 SO₂ NAAQS nonattainment area. The owner of both electric generating stations surrendered the air permit authorizations for each of these facilities, eliminating the only significant SO₂ emission source in either of the areas. The resulting decrease of ambient SO₂ concentrations demonstrates that the Freestone-Anderson and Titus nonattainment areas are attaining the 2010 SO₂ NAAQS and will continue to do so. The TCEQ's comprehensive program to identify sources of violations of the 2010 SO₂ NAAQS is satisfied through the monitoring network discussed in Chapter 4: *Monitoring Network* of this SIP revision, and follow-up for compliance and enforcement is satisfied through the TCEQ's enforcement programs authorized under the Texas Water Code (TWC) and Texas Health and Safety Code (THSC). See the Legal Authority (Section V-A) of this SIP narrative for more information on the TCEQ's enforcement authority.

In the event there is a monitored exceedance of the 99th percentile value of one-hour daily, hourly-max SO₂ concentrations in any calendar year after the redesignation to attainment of the Freestone-Anderson and Titus 2010 SO₂ NAAQS nonattainment areas, the executive director would undergo an evaluation of the expected cause(s) of the exceedance. This evaluation would examine whether the exceedance was due to an exceptional event from within one of the nonattainment areas. For an exceedance determined to not be caused by an exceptional event, the evaluation would include an analysis of information such as the SO₂ monitor trends for that year, meteorological data, and the authorization of new sources of SO₂ within the nonattainment areas. Following the evaluation, the executive director would determine whether there is indication that the exceedance was due to an upward trend of SO₂ from the monitored values throughout the same calendar year as the exceedance and, if so, would identify the source or sources suspected of causing the exceedance. Contingency measures would be determined based on the cause of the exceedance at the violating monitor and would be one or more control techniques that could be implemented in consultation with the entity or entities suspected to be the cause of the exceedance to bring the area back into attainment of the 2010 SO₂ NAAQS. Controls would be implemented in accordance with the authority given to and procedures of the TCEQ. Since the sources responsible for almost 100% of the impacts on the ambient concentrations in the nonattainment areas have shut down, it is not possible to develop specific contingency measures until the cause of elevated concentrations is known.

Texas has the authority to issue orders pursuant to §382.024 and §382.025 of the Texas Clean Air Act, Chapter 382, and the Federal Clean Air Act, 42 United States Code, §§7401 *et seq.*, for the purpose of supporting attainment and maintenance of the SO₂ NAAQS. Texas has the authority to promulgate rules according to THSC, §382.017 and TWC, §5.103. State administrative procedures require that a proposed rule is adopted no more than six months after notice of the proposal is published in the *Texas Register* (see Texas Government Code, §2001.027). Measures that would reduce SO₂ emissions to the extent necessary to comply with the 2010 SO₂ NAAQS would be adopted (subject

to commission approval and opportunity for public comment), submitted to the EPA, and implemented no later than 18 months following a monitored and certified violation of the NAAQS.

The contingency requirement for the maintenance plan for each of the nonattainment areas is consistent with the EPA's guidance through the shutdown of Big Brown Steam Electric Station and Monticello Steam Electric Station, the surrender of all applicable air permit authorizations for each facility, and the TCEQ's comprehensive program to identify and address any monitored violations of the 2010 SO₂ NAAQS.

Appendices Available Upon Request

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