TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AGENDA ITEM REQUEST

for State Implementation Plan Revision Adoption

AGENDA REQUESTED: April 23, 2013

DATE OF REQUEST: April 4, 2013

INDIVIDUAL TO CONTACT REGARDING CHANGES TO THIS REQUEST, IF NEEDED: Joyce Spencer-Nelson, (512) 239-5017

CAPTION: Docket No. 2012-1636-SIP. Consideration of the adoption of a revision to the Texas Air Quality State Implementation Plan (SIP): the Federal Clean Air Act (FCAA), Section 110(a)(1) and (2) Infrastructure and Transport SIP Revision for the 2010 Sulfur Dioxide (SO_2) National Ambient Air Quality Standard (NAAQS).

The adopted SIP revision will outline the requirements of FCAA, Section 110(a)(2)(A) through (M), and the Texas provisions supporting the requirements for the 2010 SO_2 NAAQS. These requirements include basic program elements such as enforceable emission limitations and control measures, air quality monitoring and modeling, a permitting program, adequate funding and personnel, authority under state law to carry out the plan, emissions reporting, emergency powers, public participation, and fee collection. This revision will include a technical demonstration to support that Texas meets the interstate transport requirements of FCAA, Section 110(a)(2)(D)(i)(I). (Mary Ann Cook, Amy Browning) (Non-Rule Project No. 2012-022-SIP-NR)

Steve Hagle, P.E.
Deputy Director

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Copy to CCC Secretary? NO

Texas Commission on Environmental Quality
Interoffice Memorandum

To: Commissioners **Date:** April 4, 2013

Thru: Bridget C. Bohac, Chief Clerk
Zak Covar, Executive Director

From: Steve Hagle, P.E., Deputy Director
Office of Air

Docket No.: 2012-1636-SIP

Subject: Commission Approval for Adoption of the Federal Clean Air Act (FCAA), §110(a)(1) and (2) Infrastructure and Transport State Implementation Plan (SIP) Revision for the 2010 Sulfur Dioxide (SO_2) National Ambient Air Quality Standard (NAAQS)

SO_2 Infrastructure and Transport SIP Revision
Non-rule Project No. 2012-022-SIP-NR

Background and reason(s) for the SIP revision:
The United States Environmental Protection Agency (EPA) strengthened the SO_2 NAAQS on June 2, 2010 (published June 22, 2010; 75 FR 35520), adding a 75 parts per billion (ppb) primary standard. FCAA, §110(a)(1) requires that states submit plans to provide for the implementation, maintenance, and enforcement of a new or revised NAAQS within three years of promulgation. FCAA, §110(a)(2) identifies infrastructure requirements states must address for each NAAQS. Infrastructure requirements are stipulated in §110(a)(2)(A) through (M). The SIP revision to address infrastructure requirements for the 2010 SO_2 NAAQS is due to the EPA by June 2, 2013.

Infrastructure requirements to adequately address the interstate transport of criteria pollutants that contribute significantly to nonattainment, or interfere with maintenance of, the NAAQS in other states are specified in §110(a)(2)(D)(i)(I) of the FCAA. Section 110(a)(2)(D)(i) also contains provisions prohibiting downwind interference with Prevention of Significant Deterioration (PSD) and visibility elements of Part C.

Additional Background Information:
Initial implementation instructions included in the preamble to the final 2010 SO_2 NAAQS conveyed the EPA's expectation for infrastructure SIP submittals to include maintenance plans with modeling demonstrations for areas designated unclassifiable. A requirement for the use of American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) refined dispersion modeling to assess compliance by large SO_2 sources was also explicitly discussed in the rule. The maintenance plan and modeling demonstration expectations led to challenges by Texas and others to the standard. Texas' Petition for Review was denied by the United States Court of Appeals for the D.C. Circuit on July 20, 2012. On January 24, 2013 the D.C. Circuit denied the petitions for rehearing and rehearing *en banc*, and on February 4, 2013 the court issued the mandate in the case.

Re: Docket No. 2012-1636-SIP

The EPA has not yet issued a final guidance or implementation rule for 2010 SO_2 NAAQS. In preparation for a final implementation rule (anticipated July 2013), the EPA issued a white paper to promote discussion, and then obtained stakeholder feedback on the implementation issues and compliance assessment options. In an April 12, 2012 letter to states, the EPA recommended that states focus their June 2013 SIP submittals on the traditional infrastructure elements of FCAA, §110(a)(1) and (2) rather than on modeling demonstrations showing attainment for unclassifiable areas. On February 6, 2013, the EPA issued an updated strategy paper indicating that the EPA now intends to provide flexibility for air agencies to determine the most appropriate and effective approach for characterizing air quality in their jurisdictions – through monitoring, modeling, or a mix of both. Further, the EPA now intends to allow a workable time frame for agencies to monitor air quality near key sources (or alternatively to characterize air quality through modeling).

Texas' recommended designations were submitted to the EPA on June 2, 2011 and revised on April 20, 2012. Attainment designations were recommended for Dallas, Ellis, El Paso, Galveston, Gregg, Harris, Kaufman, McLennan, Nueces, and Jefferson Counties, as 2011 SO_2 design values (DV) from regulatory monitors located in those counties showed the standard met. Unclassifiable designations were recommended for all remaining counties in Texas because there are no SO_2 regulatory monitors located in those counties. On or about February 7, 2013, the EPA notified states that it intends to meet the June 2013 designations deadline only for areas determined to be in nonattainment of the 2010 SO_2 NAAQS, based on air monitoring data from 2009–2011 indicate violations of the 2010 SO_2 NAAQS. The EPA intends to address the designations for all other areas in separate future actions. Nonattainment area SIP revisions demonstrating attainment of the NAAQS by August 2017 in the identified nonattainment areas are due to the EPA within 18 months of those designations. Correspondence to states and tribes from the EPA in February 2013 identified the areas of the country that the EPA intends to designate in nonattainment of the 2010 NAAQS. The EPA's letter to TCEQ stated that no nonattainment areas were identified in Texas, and designation action for Texas is deferred until such time additional data are gathered pursuant to the EPA's implementation strategy. The EPA's updated strategy paper issued on February 6, 2013 indicates that final designations for the areas not identified in 2013 as nonattainment will not be made until December 2017 for modeled areas, and December 2020 for monitored areas.

Other requirements of the 2010 SO_2 NAAQS include fully operational SO_2 air quality monitors in place by January 1, 2013 for a number of Texas cities. Based on recent census and emissions data, seven total monitors are required in the state. Two SO_2 monitors are required in the Houston-Sugar Land-Baytown area, and one SO_2 monitor is required in each of the following areas: San Antonio-New Braunfels, Dallas-Fort Worth-Arlington, Longview, Beaumont-Port Arthur, and Amarillo. The required San Antonio-New Braunfels SO_2 monitor was deployed at the Calaveras Lake air monitoring site (AQS 480290059) on December 17, 2012. In January 2013, EPA approval was obtained on a proposed site for the Amarillo area SO_2 monitor. That monitor will be promptly deployed once site details are finalized. The other five monitors are in place as required.

Re: Docket No. 2012-1636-SIP

Scope of the SIP revision:

A.) Summary of what the revision will do:
The adopted SIP revision will identify the FCAA-required infrastructure and transport requirements and document how Texas satisfies those requirements to provide for the implementation, maintenance, and enforcement of the 2010 SO_2 NAAQS.

B.) Scope required by federal regulations or state statutes:
The adopted revision will outline the infrastructure requirements of §110(a)(2)(A) through (M) and identify how the Texas SIP addresses those requirements in order to provide for implementation, maintenance, and enforcement of the 2010 SO_2 NAAQS. This SIP revision will address the interstate transport of SO_2 pursuant to FCAA, §110(a)(2)(D)(i)(I). The technical analysis demonstrates that Texas does not significantly contribute to nonattainment or interfere with the maintenance of the 2010 SO_2 NAAQS in any other state.

SIP-required air quality programs and elements to support Texas meeting infrastructure and transport requirements are also identified and discussed. The programs and elements identified include any applicable emission limits and control measures, the SO_2 air quality monitoring network, modeling and permitting programs, funding and personnel, state legal authority, the emissions reporting program, emergency powers, public participation, and fee collections.

In accordance with the EPA's letter of April 12, 2012, the adopted SIP revision only addresses the "traditional infrastructure requirements" specified in FCAA, §110(a)(2)(A) through (M), including the §110(a)(2)(D)(i)(I) requirement dealing with interstate transport. This SIP revision does not include a maintenance plan or modeling demonstration as was initially indicated would be required with implementation of the 2010 SO_2 NAAQS.

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

Statutory authority:
The authority to propose and adopt this SIP revision is derived from the FCAA, 42 United States Code, §7410, which requires states to submit SIP revisions that contain enforceable measures to attain the NAAQS and other general and specific authority in Texas Water Code, Chapters 5 and 7 and Texas Health and Safety Code, Chapter 382. Specific requirements for the 2010 SO_2 NAAQS were published in the June 22, 2010 issue of the *Federal Register* (75 FR 35520).

Effect on the:

A.) Regulated community:
The SIP revision will have no effect on the regulated community.

B.) Public:
None

C.) Agency programs:
This SIP revision will have no new effect on agency programs.

Stakeholder meetings:
Public comment was invited for a period beginning November 5, 2012 and ending on December 7, 2012.
Public comment:
A hearing to receive oral comments from the public was offered on December 4, 2012 in Austin. There were no public participants in attendance, so the public hearing was not opened. Two written comments were received during the public comment period – one from the EPA and one from the Sierra Club. Those comments are summarized and commission responses provided in the Response to Comments for this SIP revision.

Significant changes from proposal:
None

Potential controversial concerns and legislative interest:
The EPA's initial implementation expectations for June 2013 SIP submittals raised several issues that remain unresolved. A lack of final implementation guidance or rules has contributed to difficulties in determining the EPA's exact requirements. Developing SIP revisions meeting EPA's requirements or expectation will be challenging until major issues are resolved and implementation requirements are determined, conveyed, and understood.

Although recently not supported in federal court, Texas and other petitioners initially argued that the EPA should vacate the 2010 SO_2 NAAQS rule. The petitioners referenced problems with the modeling approach, maintenance plan requirements, the form and stringency of the standard and inadequate notice/opportunity for states and stakeholders to comment. The EPA's initial implementation expectation was for states to include maintenance plans and modeling demonstrations in their infrastructure SIP submittals. However, in 2012 the EPA put this requirement on hold pending further determination of implementation requirements, and then proceeded to seek stakeholder input. On February 6, 2013, the EPA issued its "Next Steps for Area Designations and Implementation of the Sulfur Dioxide National Ambient Air Quality Standard" strategy paper. The paper described the EPA's updated strategy for completing initial area designations under the 2010 SO2 NAAQS.

Per the technical demonstration contained in this SIP revision, emissions reductions are not needed to demonstrate that interstate transport requirements are met for the SO_2 NAAQS.

Texas' air permitting program is in place per FCAA infrastructure requirements. The EPA previously disapproved various elements of Texas' air permitting programs due to issues

regarding the regulation of greenhouse gases (GHG). However, newly adopted rules, a recent court ruling upholding some of the permitting programs, and a commitment to work closely with EPA staff to address the remaining issues should remedy most issues. Texas has a robust, SIP-approved permitting program, and therefore has met the infrastructure requirements of §110(a)(2).

The EPA's draft guidance for the SO_2 infrastructure revisions states that an approved Prevention of Significant Deterioration (PSD) program that applies to all regulated New Source Review (NSR) pollutants, including GHG, is necessary for a state to have a fully approvable infrastructure SIP. The EPA has already finalized a disapproval of a portion of Texas' Infrastructure SIP for fine particulate matter ($PM_{2.5}$) and the 1997 eight-hour ozone NAAQS on the same basis that Texas lacks an approved PSD permitting program for GHG. The EPA may similarly disapprove this and future infrastructure SIP revisions as they relate to GHG permitting. Litigation between Texas and the EPA regarding GHG is ongoing.

Does 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 this SIP revision?
Submittal of a SIP revision by June 2, 2013 is federally required to address infrastructure and transport requirements for the 2010 SO_2 NAAQS, per §110(a) of the FCAA. Late or non-submittal of the required SIP revision could lead to the EPA's promulgation of a federal implementation plan.

To document that interstate transport requirements specified in §110(a)(2)(D)(i)(I) are addressed for SO_2 in Texas, this SIP revision contains an analysis of SO_2 transport that includes a technical demonstration based on an evaluation of monitoring data. The inclusion of a transport analysis of Texas' emissions impacts on other states based on monitoring data only (no modeling) is consistent with Texas' position on the SO_2 NAAQS. Alternatively, a SIP revision could be delayed until further guidance is provided, though the SIP revision would then likely not meet the FCAA deadline.

Key points in the adoption schedule:
Anticipated adoption date: April 23, 2013
Deadline to submit to the EPA: June 2, 2013

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Re: Docket No. 2012-1636-SIP

Attachments

cc: Chief Clerk, 2 copies
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REVISIONS TO THE STATE OF TEXAS AIR QUALITY
IMPLEMENTATION PLAN

INFRASTRUCTURE DEMONSTRATION AND TRANSPORT PLAN
FOR SULFUR DIOXIDE

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. BOX 13087
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FEDERAL CLEAN AIR ACT SECTION 110(a)(1) AND (2) INFRASTRUCTURE AND TRANSPORT STATE IMPLEMENTATION PLAN REVISION FOR THE 2010 SULFUR DIOXIDE NATIONAL AMBIENT AIR QUALITY STANDARD

PROJECT NUMBER 2012-022-SIP-NR

Adoption
April 23, 2013

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EXECUTIVE SUMMARY

States are required by §110(a)(1) of the Federal Clean Air Act (FCAA) to revise their air quality state implementation plans (SIP) within three years of the promulgation of a new or revised National Ambient Air Quality Standard (NAAQS) to provide for the implementation, maintenance, and enforcement of the NAAQS. FCAA, §110(a)(2)(A) through (M) identifies infrastructure requirements that states must address for each NAAQS. The United States Environmental Protection Agency (EPA) strengthened the sulfur dioxide (SO_2) NAAQS on June 2, 2010 (published June 22, 2010; 75 FR 35520), adding a 75 parts per billion (ppb) one-hour primary standard. SIP revisions to address infrastructure requirements for the 2010 SO_2 NAAQS are due to the EPA by June 2, 2013. One infrastructure requirement, specified in FCAA, §110(a)(2)(D)(i)(I), stipulates that states adequately address the interstate transport of criteria pollutants that contribute significantly to nonattainment or interfere with maintenance of the NAAQS in other states. Section 110(a)(2)(D)(i) also contains provisions prohibiting downwind interference with prevention of significant deterioration (PSD) and visibility elements of Part C.

This SIP revision will satisfy the FCAA, §110(a)(1) requirement and documents revisions to the Texas SIP at 40 Code of Federal Regulations Part 52, Subpart SS that satisfy the infrastructure requirements of §110(a)(2) for the 2010 SO_2 NAAQS. This revision provides details about each of the infrastructure requirements and identifies elements of the state's air quality programs, rules, regulations, and policies in place to address them. Air quality program controls and elements put in place by Texas statutes and rules that allow the Texas Commission on Environmental Quality (TCEQ) to meet infrastructure requirements include basic program elements such as enforceable emission limitations and control measures, air quality monitoring and modeling, a permitting program, adequate funding and personnel, authority under state law to carry out the plan, emissions reporting, emergency powers, public participation, and fee collection. A detailed technical analysis discussion is included in this SIP revision to demonstrate that Texas satisfies the infrastructure requirement in §110(a)(2)(D)(i)(I) to address interstate transport for the 2010 SO_2 NAAQS. The technical analysis demonstration includes an analysis of back trajectories from monitor sites in neighboring states used to determine air parcel originations. A discussion of the technical analysis for SO_2 transport demonstrates that Texas does not contribute significantly to nonattainment or interfere with maintenance of the 2010 SO_2 NAAQS in another state.

Additional requirements for states initiated with promulgation of the 2010 SO_2 NAAQS include fully operational SO_2 air quality monitors in place by January 1, 2013 for a number of identified cities. Based on recent census and emissions data, seven total SO_2 air quality monitors are required in Texas. All but one of the required monitors are in place, and the EPA recently approved a site location in the Amarillo area chosen for the final SO_2 air quality monitor. That monitor will be promptly deployed once site details are finalized.

Area designations for the 2010 SO_2 NAAQS are required to be finalized by the EPA by June 3, 2013. State recommendations for designations were due to the EPA on June 2, 2011. The recommended designations for Texas were submitted to the EPA on June 2, 2011 and revised on April 20, 2012. Attainment designations were recommended for Dallas, Ellis, El Paso, Galveston, Gregg, Harris, Kaufman, McLennan, Nueces, and Jefferson Counties, as 2011 SO_2 design values (DV) from regulatory monitors located in those counties showed the standard met. Unclassifiable designations were recommended for all remaining counties in Texas because there are no SO_2 regulatory monitors located in those counties. On or about February 7, 2013, the EPA notified states that it intends to meet the June 2013 designations deadline only for areas determined to be in nonattainment of the 2010 SO_2 NAAQS, based on identified monitored NAAQS violations. The EPA intends to address the designations for all other areas in

separate future actions. Nonattainment area SIP revisions demonstrating attainment of the NAAQS by August 2017 in the identified nonattainment areas are due to the EPA within 18 months of those designations. Correspondence to states and tribes from the EPA in February 2013 identified the areas of the country that the EPA intends to designate in nonattainment of the 2010 NAAQS. The EPA's letter to TCEQ stated that no nonattainment areas were identified in Texas, and designation action for Texas is deferred until such time additional data are gathered pursuant to the EPA's implementation strategy.

Initial implementation instructions in the preamble to the 2010 SO_2 NAAQS rule conveyed the EPA's expectation for infrastructure SIP submittals to include maintenance plans with modeling demonstrations for areas designated unclassifiable. A requirement for the use of refined American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) dispersion modeling to assess compliance by large SO_2 sources was also discussed in the rule. The maintenance plan and modeling demonstration expectations led to challenges by Texas and others to the standard. Texas' Petition for Review was denied by the United States Court of Appeals for the D.C. Circuit on July 20, 2012. On January 24, 2013 the D.C. Circuit denied the petitions for rehearing and rehearing *en banc*, and on February 4, 2013 the court issued the mandate in the case. In preparation for a final implementation rule (anticipated July 2013), the EPA had issued a white paper to promote discussion, and obtained stakeholder feedback on implementation issues and compliance assessment options. In an April 12, 2012 letter to states, the EPA recommended that states focus their June 2013 SIP submittals on the traditional infrastructure elements of FCAA, §110(a)(1) and (2) rather than on modeling demonstrations showing attainment for unclassifiable areas. The EPA has not yet issued a final implementation rule or guidance for the 2010 SO_2 NAAQS, but in order to meet statutory deadlines for submittal of infrastructure SIPs, states do not have the option of waiting for EPA to provide additional guidance before proceeding with infrastructure and transport SIP development, review, and submittal. The TCEQ developed this SIP revision to ensure adequate opportunities for public notice and comment as required by state and federal statutes.

Because the infrastructure demonstration explains how existing Texas statutes and rules provide the basis for Texas to meet its obligations under the FCAA, the infrastructure portion of this SIP revision was developed as an expansion of the existing Section V: *Legal Authority* section of the Texas SIP. This expanded section is unique to infrastructure SIP revisions submitted to address requirements of FCAA, §110(a)(1), as it demonstrates that the state can provide for the implementation, maintenance, and enforcement of the NAAQS. Because legal authorities alone do not provide sufficient basis for the state to address the FCAA's interstate transport requirements, the portion of this SIP revision addressing interstate transport was developed as an expansion of the existing Section VI: *Control Strategy* section of the Texas SIP.

TABLE OF CONTENTS

Executive Summary

Table of Contents

Section V: Legal Authority

Section V: Legal Authority

- A. General (Revised)
- B. Applicable Law

Section V-E-1: Infrastructure Demonstration for the 2010 Sulfur Dioxide National Ambient Air Quality Standard

- A. Background
- B. Texas Statutory Authority
- C. Texas Regulatory Authority
  - FCAA, §110(a)(2)(A)
  - FCAA, §110(a)(2)(B)
  - FCAA, §110(a)(2)(C)
  - FCAA, §110(a)(2)(D)
  - FCAA, §110(a)(2)(E)
  - FCAA, §110(a)(2)(F)
  - FCAA, §110(a)(2)(G)
  - FCAA, §110(a)(2)(H)
  - FCAA, §110(a)(2)(I)
  - FCAA, §110(a)(2)(J)
  - FCAA, §110(a)(2)(K)
  - FCAA, §110(a)(2)(L)
  - FCAA, §110(a)(2)(M)
- D. Conclusion

Section VI: Control Strategy

List of Acronyms

List of Tables

List of Figures

Chapter 1: General

- 1.1 Background

1.2 Introduction

1.3 Health Effects

1.4 Public Hearing and Comment Information

1.5 Social and Economic Considerations

1.6 Fiscal and Manpower Resources

1.7 Coordination with Local Agencies

1.8 Organizations Responsible for Development, Implementation, and Enforcement

1.9 Data Availability

Chapter 2: Required Control Strategy Elements

2.1 Background

2.2 Control Strategy Overview

2.2.1 Significant Contribution to Nonattainment and Interference with Maintenance Elements

2.2.1.1 Modeling

2.2.1.2 Region 6 Monitoring Information

2.2.1.3 Region 6 Design Values and 99th Percentiles

2.2.1.4 Review of Texas Design Values

2.2.1.5 Transport Analysis

2.3 Conclusion

2.4 References

Chapter 3: Future Revisions to the National Ambient Air Quality Standards (NAAQS)

Response to Comments

SECTION V: LEGAL AUTHORITY

A. General (Revised)
B. Infrastructure Demonstration for Lead (No change)
C. Infrastructure Demonstration for Nitrogen Dioxide (No change)
D. Infrastructure Demonstration for Ozone (No change)
E. Infrastructure Demonstration for Sulfur Dioxide (New)
   1. 2010 Sulfur Dioxide National Ambient Air Quality Standard (New)

SECTION V: LEGAL AUTHORITY

A. General (Revised)

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, and 2011. 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) is the state air pollution control agency and is 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). With the creation of the TNRCC, the authority over air quality is found in both the Texas Water Code and the TCAA. Specifically, the authority of the TNRCC 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 TNRCC, and the responsibilities and authority of the executive director. Chapter 5 also authorizes the TNRCC to implement action when emergency conditions arise and to conduct hearings. Chapter 7 gives the TNRCC enforcement authority. 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.

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.

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.

B. 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, 2011
TEXAS WATER CODE	September 1, 2011

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
Chapter 35: Subchapters A-C, K: Emergency and Temporary Orders and Permits; Temporary Suspension or Amendment of Permit Conditions	July 20, 2006

Chapter 39: Public Notice, §§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 39.601-39.605	June 24, 2010
Chapter 55: Requests for Reconsideration and Contested Case Hearings; Public Comment, §§55.150, 55.152(a)(1), (2), (5), and (6) and (b), 55.154(a), (b), (c)(1)-(3), and (5), and (d)-(g), and 55.156(a), (b), (c)(1), (e), and (g)	June 24, 2010
Chapter 101: General Air Quality Rules	April 19, 2012
Chapter 106: Permits by Rule, Subchapter A	May 15, 2011
Chapter 111: Control of Air Pollution from Visible Emissions and Particulate Matter	February 16, 2012
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	September 13, 2012
Chapter 115: Control of Air Pollution from Volatile Organic Compounds	December 29, 2011
Chapter 116: Permits for New Construction or Modification	August 16, 2012
Chapter 117: Control of Air Pollution from Nitrogen Compounds	April 19, 2012
Chapter 118: Control of Air Pollution Episodes	March 5, 2000
Chapter 122: §122.122: Potential to Emit	December 11, 2002
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	December 11, 2002
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 V-E-1: INFRASTRUCTURE DEMONSTRATION FOR THE 2010 SULFUR DIOXIDE NATIONAL AMBIENT AIR QUALITY STANDARD

A. Background

States are required by Section 110(a)(1) of the Federal Clean Air Act (FCAA) to revise their air quality state implementation plans (SIP) within three years of the promulgation of new or revised National Ambient Air Quality Standard (NAAQS) to provide for the implementation, maintenance, and enforcement of the NAAQS. FCAA, §110(a)(2)(A) through (M) identifies infrastructure requirements that states must address for each NAAQS. The United States Environmental Protection Agency (EPA) strengthened the SO_2 NAAQS on June 2, 2010, (published June 22, 2010; 75 FR 35520), adding a 75 parts per billion (ppb) one-hour primary standard. SIP revisions to address infrastructure requirements for the 2010 SO_2 NAAQS are due to the EPA by June 2, 2013.

This SIP revision will satisfy the FCAA, §110(a)(1) requirement and documents revisions to the Texas SIP at 40 Code of Federal Regulations Part 52, Subpart SS that satisfy the §110(a)(2) infrastructure requirements for the 2010 SO_2 NAAQS. The revision provides details about each infrastructure requirement and identifies elements of the state's air quality programs, rules, regulations, and policies in place to address them. Air quality program controls and elements put in place by Texas statutes and rules that allow the Texas Commission on Environmental Quality (TCEQ) to meet infrastructure requirements include basic program elements such as enforceable emission limitations and control measures, air quality monitoring and modeling, a permitting program, adequate funding and personnel, authority under state law to carry out the plan, emissions reporting, emergency powers, public participation, and fee collection.

Because the infrastructure demonstration explains how existing Texas statutes and rules provide the basis for Texas to meet its obligations under the FCAA, the infrastructure portion of this SIP revision was developed as an expansion of the existing Section V: *Legal Authority* section of the Texas SIP. This expanded section is unique to infrastructure SIP revisions submitted to address requirements of FCAA, §110(a)(1), as it demonstrates that the state can provide for the implementation, maintenance, and enforcement of the NAAQS.

One infrastructure obligation, specified in FCAA §110(a)(2)(D)(i)(I), requires that states adequately address the interstate transport of criteria pollutants that contribute to nonattainment or interfere with maintenance the NAAQS in other states. A detailed technical analysis discussion demonstrating that Texas specifically addresses the interstate transport requirements in FCAA, §110(a)(2)(D)(i)(I) for the 2010 SO_2 NAAQS is contained in Chapter 2: *Required Control Strategy Elements* of this SIP revision, and revises Section VI: *Control Strategy* of the Texas SIP.

Additional requirements for states initiated with promulgation of the 2010 SO_2 NAAQS include fully operational SO_2 air quality monitors in place by January 1, 2013 for a number of identified cities. Based on recent census and emissions data, seven total SO_2 air quality monitors are required in Texas. All but one of the required monitors are in place, and the EPA recently approved a site location in the Amarillo area chosen for the final SO_2 air quality monitor. That monitor will be promptly deployed once site details are finalized.

Area designations for the 2010 SO_2 NAAQS are required to be finalized by the EPA by June 3, 2013. State recommendations for designations were due to the EPA on June 2, 2011. The recommended designations for Texas were submitted to the EPA on June 2, 2011 and revised on April 20, 2012. Attainment designations were recommended for Dallas, Ellis, El Paso, Galveston, Gregg, Harris, Kaufman, McLennan, Nueces, and Jefferson Counties, as 2011 SO_2

design values (DV) from regulatory monitors located in those counties showed the standard met. Unclassifiable designations were recommended for all remaining counties in Texas because there are no SO_2 regulatory monitors located in those counties. On or about February 7, 2013, the EPA notified states that it intends to meet the June 2013 designations deadline only for areas determined to be in nonattainment of the 2010 SO_2 NAAQS, based on identified monitored NAAQS violations. The EPA intends to address the designations for all other areas in separate future actions. Nonattainment area SIP revisions demonstrating attainment of the NAAQS by August 2017 in the identified nonattainment areas are due to the EPA within 18 months of those designations. Correspondence to states and tribes from the EPA in February 2013 identified the areas of the country that the EPA intends to designate in nonattainment of the 2010 NAAQS. The EPA's letter to TCEQ stated that no nonattainment areas were identified in Texas, and designation action for Texas is deferred until such time additional data are gathered pursuant to the EPA's implementation strategy.

Initial implementation instructions included in the preamble to the final 2010 SO_2 NAAQS rule conveyed the EPA's expectation for infrastructure SIP submittals to include maintenance plans with modeling demonstrations for areas designated unclassifiable. A requirement for the use of refined American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) dispersion modeling to assess compliance by large SO_2 sources was also explicitly discussed in the rule preamble. The EPA's maintenance plan and modeling demonstration expectations led to challenges by Texas and others to the standard. Texas' Petition for Review was denied by the United States (U.S.) Court of Appeals for the D.C. Circuit on July 20, 2012. In preparation for a final implementation rule (anticipated July 2013), the EPA issued a white paper to promote discussion and obtain stakeholder feedback on implementation issues and compliance assessment options. In an April 12, 2012 letter to states, the EPA recommended that states focus their June 2013 SIP submittals on the traditional infrastructure elements of FCAA, §110(a)(1) and (2) rather than on modeling demonstrations showing attainment for unclassifiable areas. The EPA has not yet issued a final implementation rule or guidance for the 2010 SO_2 NAAQS, but in order to meet statutory deadlines for submittal of infrastructure SIPs, states do not have the option of waiting for the EPA to provide guidance before proceeding with infrastructure and transport SIP development, review, and submittal. The TCEQ developed this SIP revision to ensure adequate opportunities for public notice and comment as required by state and federal statutes.

B. Texas Statutory Authority

The TCEQ has the legal authority to implement, maintain, and enforce the NAAQS. Texas' legal authority has been submitted to the EPA as part of various SIP revisions that have been approved by the EPA.

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, and 2011. 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). With the creation of the TNRCC, the authority over air quality is found in both the Texas Water Code and the TCAA. Specifically, the authority of the

commission is found in Texas Water Code, 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 commission, and the responsibilities and authority of the executive director. Chapter 5 also authorizes the commission to implement action when emergency conditions arise and to conduct hearings. Chapter 7 gives the commission enforcement authority. In 2001, the 77th Texas Legislature continued the existence of the commission 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 the Texas Water Code, §5.014, 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.

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

Local government authority concerning air quality matters is found in Subchapter E of the TCAA. Local governments have the same power as the TCEQ to enter property and make inspections. Local governments may also 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 or the rules or orders of the commission.

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 FCAA; coordinate with federal, state, and local transportation planning agencies to develop and implement transportation programs and measures necessary to attain and maintain the NAAQS; and fund and authorize participating counties to implement vehicle repair assistance, retrofit, and accelerated vehicle retirement programs.

<u>Statutory Authority</u>
The following statutory authority allows for the establishment and operation of the TCEQ and the adoption and implementation of all §110(a)(2) requirements.

Texas Clean Air Act, Texas Health and Safety Code, Chapter 382, except Subchapter I.

Texas Water Code:

§5.013(a)(11) & (13)	GENERAL JURISDICTION OF COMMISSION
§5.051.	COMMISSION
§5.052.	MEMBERS OF THE COMMISSION; APPOINTMENT
§5.053.	ELIGIBILITY FOR MEMBERSHIP
§5.054.	REMOVAL OF COMMISSION MEMBERS

§5.059.	CONFLICT OF INTEREST
§5.060.	LOBBYIST PROHIBITION
§5.101.	SCOPE OF SUBCHAPTER
§5.102.	GENERAL POWERS
§5.103.	RULES
§5.104.	MEMORANDA OF UNDERSTANDING
§5.105.	GENERAL POLICY
§5.106.	BUDGET APPROVAL
§5.107.	ADVISORY COMMITTEES, WORK GROUPS, AND TASK FORCES
§5.115.	PERSONS AFFECTED IN COMMISSION HEARINGS; NOTICE OF APPLICATION
§5.117.	MANDATORY ENFORCEMENT HEARING
§5.120.	CONSERVATION AND QUALITY OF ENVIRONMENT
§5.133.	ACTIONS IN MEXICO
§5.1733.	ELECTRONIC POSTING OF INFORMATION
§5.223.	ADMINISTRATIVE ORGANIZATION OF COMMISSION
§5.230.	ENFORCEMENT
§5.233.	GIFTS AND GRANTS
§5.234.	APPLICATIONS AND OTHER DOCUMENTS
§5.237.	OPERATING FUND
§5.501.	EMERGENCY AND TEMPORARY ORDER OR PERMIT; TEMPORARY SUSPENSION OR AMENDMENT OF PERMIT CONDITION
§5.502.	APPLICATION FOR EMERGENCY OR TEMPORARY ORDER
§5.514.	ORDER ISSUED UNDER AIR EMERGENCY
§5.515.	EMERGENCY ORDER BECAUSE OF CATASTROPHE
§5.701(a)	FEES
§5.702.	PAYMENT OF FEES REQUIRED WHEN DUE
§5.703.	FEE ADJUSTMENTS
§5.704.	NOTICE OF CHANGE IN PAYMENT PROCEDURE
§5.705.	NOTICE OF VIOLATION
§7.002.	ENFORCEMENT AUTHORITY
§7.032.	INJUNCTIVE RELIEF
§7.051.	ADMINISTRATIVE PENALTY
§7.052.	MAXIMUM PENALTY
§7.053.	FACTORS TO BE CONSIDERED IN DETERMINATION OF PENALTY AMOUNT
§7.061.	PAYMENT OF PENALTY; PETITION FOR REVIEW
§7.066.	REFERRAL TO ATTORNEY GENERAL
§7.067.	SUPPLEMENTAL ENVIRONMENTAL PROJECTS
§7.072.	RECOVERY OF PENALTY
§7.073.	CORRECTIVE ACTION
§7.101.	VIOLATION
§7.102.	MAXIMUM PENALTY
§7.103.	CONTINUING VIOLATIONS
§7.105.	CIVIL SUIT
§7.106.	RESOLUTION THROUGH ADMINISTRATIVE ORDER
§7.177.	VIOLATIONS OF CLEAN AIR ACT
§7.178.	FAILURE TO PAY FEES UNDER CLEAN AIR ACT
§7.179.	FALSE REPRESENTATIONS UNDER CLEAN AIR ACT
§7.180.	FAILURE TO NOTIFY UNDER CLEAN AIR ACT
§7.181.	IMPROPER USE OF MONITORING DEVICE

§7.182.	RECKLESS EMISSION OF AIR CONTAMINANT AND ENDANGERMENT
§7.183.	INTENTIONAL OR KNOWING EMISSION OF AIR CONTAMINANT AND KNOWING ENDANGERMENT
§7.186.	SEPARATE OFFENSES
§7.187.	PENALTIES
§7.302.	GROUNDS FOR REVOCATION OR SUSPENSION OF PERMIT

C. Texas Regulatory Authority

The TCEQ has promulgated rules implementing statutory authority to meet the requirements of both the FCAA and the TCAA. These rules were submitted to the EPA in various SIP revisions and have been approved in the *Federal Register* (FR) or are pending EPA review. Rules that are relevant for each FCAA, §110(a)(2) requirement are noted below.

FCAA, §110(a)(2)(A)

Federal Requirement

(A) include enforceable emission limitations and other control measures, means, or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights), as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of this Act;

Texas Requirement

The TCEQ has promulgated rules to implement and enforce the NAAQS and other air quality standards. These rules include programs for banking and trading of emissions, as well as permits and fees. Periodic revisions to the SIP establish timetables and schedules for improving the air quality in nonattainment areas.

The following chapters of Title 30 Texas Administrative Code (TAC) contain rules relevant for this federal requirement:

Chap. 7	Memoranda of Understanding
Chap. 101	General Air Quality Rules
Chap. 106	Permits by Rule, Subchapter A, General Requirements
Chap. 111	Control of Air Pollution from Visible Emissions and Particulate Matter
Chap. 112	Control of Air Pollution from Sulfur Compounds
Chap. 113	Standards of Performance for Hazardous Air Pollutants and for Designated Facilities and Pollutants
Chap. 114	Control of Air Pollution from Motor Vehicles
Chap. 115	Control of Air Pollution from Volatile Organic Compounds
Chap. 116	Control of Air Pollution by Permits for New Construction or Modification
Chap. 117	Control of Air Pollution from Nitrogen Compounds
Chap. 118	Control of Air Pollution Episodes
Chap. 122	Potential to Emit (§122.122)
Chap. 122	Minor Permit Revisions (§122.215)
Chap. 122	Applications for Minor Permit Revisions (§122.216)
Chap. 122	Procedures for Minor Permit Revisions (§122.217)
Chap. 122	Minor Permit Revision Procedures for Permit Revisions Involving the Use of Economic Incentives, Marketable Permits, and Emissions Trading (§122.218)

FCAA, §110(a)(2)(B)

Federal Requirement

(B) provide for establishment and operation of appropriate devices, methods, systems, and procedures necessary to (i) monitor, compile, and analyze data on ambient air quality, and (ii) make such data available to the Administrator;

Texas Requirement

The TCEQ maintains a network of air quality monitors to measure air quality data that is reported to the EPA on a regular basis. Texas submits annual monitoring plans to the EPA that describe how the state has complied with monitoring requirements and explains any proposed changes. Federally required monitoring is conducted under an EPA-approved Quality Assurance Project Plan (QAPP).

The following chapters of 30 TAC contain rules relevant for this federal requirement:

Chap. 101	General Air Quality Rules
Chap. 106	Permits by Rule, Subchapter A, General Requirements
Chap. 111	Control of Air Pollution from Visible Emissions and Particulate Matter
Chap. 112	Control of Air Pollution from Sulfur Compounds
Chap. 115	Control of Air Pollution from Volatile Organic Compounds
Chap. 116	Control of Air Pollution by Permits for New Construction or Modification
Chap. 117	Control of Air Pollution from Nitrogen Compounds

FCAA, §110(a)(2)(C)

Federal Requirement

(C) include a program to provide for the enforcement of the measures described in subparagraph (A), and regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that national ambient air quality standards are achieved, including a permit program as required in parts C and D;

Texas Requirement

The TCEQ has established rules governing the enforcement of control measures, including attainment plans and permitting programs that regulate construction and modification of stationary sources.[1]

The EPA has published various proposed disapproval notices for Texas' air permitting programs, and these disapprovals have not yet been fully resolved. Texas has new rules that address these notices and has committed to working closely with the EPA to ensure that these rulemaking efforts will result in rules that are approvable by the EPA. The EPA has also proposed limited approval/limited disapproval of the commission's rules regarding public

[1] Texas has permitting rules for Prevention of Significant Deterioration (PSD), as required by the FCAA. The EPA has recently promulgated regulations for the permitting of greenhouse gases under the PSD program. Although Texas has not amended or proposed amendments to its permitting program to include greenhouse gases, Texas is meeting its obligations under the FCAA to provide for permitting of facilities that emit criteria pollutants. Greenhouse gases are not criteria pollutants, with a NAAQS that must be met. Therefore, a lack of permitting requirements in Texas rules for greenhouse gas emissions does not constitute a lack in the required infrastructure elements of §110(a)(2).

participation for air quality New Source Review (NSR) permits. Texas has withdrawn from EPA consideration most of the rules that were the subject of the proposed limited approval/limited disapproval and has submitted new and revised adopted public participation rules to the EPA for the SIP. On October 28, 2010 the EPA signed a notice withdrawing its limited approval and limited disapproval of the SIP revisions relating to public participation, because those revisions are no longer before the EPA for review. Although the EPA has disapproved various elements of Texas' air permitting programs, those concerns are being addressed with newly adopted rules and a commitment to work closely with EPA staff to issue EPA-approvable rules. Texas has a robust, SIP-approved permitting program and therefore has met the infrastructure requirements of §110(a)(2).

The following chapters of 30 TAC contain rules relevant for this federal requirement:

Chap. 35	Emergency and Temporary Orders and Permits; Temporary Suspension or Amendment of Permit Conditions; Subchapters A, B, C, K
Chap. 39	Public Notice
Chap. 55	Requests for Reconsideration and Contested Case Hearings; Public Notice
Chap. 101	General Air Quality Rules
Chap. 106	Permits by Rule, Subchapter A, General Requirements
Chap. 112	Control of Air Pollution from Sulfur Compounds
Chap. 115	Control of Air Pollution from Volatile Organic Compounds
Chap. 116	Control of Air Pollution by Permits for New Construction or Modification
Chap. 117	Control of Air Pollution from Nitrogen Compounds

FCAA, §110(a)(2)(D)

Federal Requirement

(D) contain adequate provisions (i) prohibiting, consistent with the provisions of this title, any source or other type of emissions activity from emitting any air pollutant in amounts which will (I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard, or (II) interfere with measures required to be included in the applicable implementation plan for any other State under part C to prevent significant deterioration of air quality or to protect visibility,(ii) insuring compliance with the applicable requirements of sections 126 and 115 (relating to interstate and international pollution abatement);

Texas Requirement

This SIP revision includes an interstate transport technical analysis in Section VI: *Control Strategy* to address the requirements of §110(a)(2)(D)(i)(I).

Texas has a SIP-approved PSD and nonattainment NSR permitting program that contains requirements for sources of air pollutants to obtain an approved permit before beginning construction of a facility and before modifying an existing facility (see requirements for §110(a)(2)(C) previously listed). Texas submitted a Regional Haze SIP revision to the EPA on March 19, 2009. Regional haze program requirements include progress reports due to the EPA in 2014 and every five years thereafter to demonstrate progress toward the visibility goal. Another Regional Haze SIP is due in 2018 and every 10 years thereafter, through 2064.

On August 21, 2012, the U.S. Court of Appeals for the D.C. Circuit vacated the EPA's Cross-State Air Pollution Rule. As part of its decision, the court stated that the EPA needed to inform states of their transport obligations under §110(a)(2)(D)(i)(I) before states could submit SIPs

addressing those obligations. On January 24, 2013 the D.C. Circuit denied the petitions for rehearing and rehearing *en banc*. On February 4, 2013 the court issued the mandate in the case. The TCEQ is moving ahead to meet our FCAA obligations with the available information, and may supplement this documentation in the future if necessary.

The following chapters of 30 TAC contain rules relevant for this federal requirement:

Chap. 101	General Air Quality Rules
Chap. 122	Subchapter E, Division 2, Clean Air Interstate Rule

FCAA, §110(a)(2)(E)

Federal Requirement

(E) provide (i) necessary assurances that the State (or, except where the Administrator deems inappropriate, the general purpose local government or governments, or a regional agency designated by the State or general purpose local governments for such purpose) will have adequate personnel, funding, and authority under State (and, as appropriate, local) law to carry out such implementation plan (and is not prohibited by any provision of Federal or State law from carrying out such implementation plan or portion thereof), (ii) requirements that the state comply with the requirements respecting State boards under section 128, and (iii) necessary assurances that, where the State has relied on a local or regional government, agency, or instrumentality for the implementation of any plan provision, the State has responsibility for ensuring adequate implementation of such plan provision;

Texas Requirement

The TCEQ has consistently included assurances in SIP revisions that the state has adequate personnel, funding, and authority under state law to carry out the SIP. The TCEQ has various Memoranda of Understanding and Memoranda of Agreement with other state and local agencies. Local governments have their own responsibilities and privileges regarding the protection of air quality as established by the Texas legislature.

The TCEQ relies on the complete statutory and regulatory authority as referenced throughout this document. This statutory authority ensures that Texas can meet the requirements of this section, including the requirements of §128 of the FCAA. The TCEQ also regularly submits a description of our legal authority with SIP revisions submitted to the EPA.

FCAA, §110(a)(2)(F)

Federal Requirement

(F) require, as may be prescribed by the Administrator: (i) the installation, maintenance, and replacement of equipment, and implementation of other necessary steps, by owners or operators of stationary sources to monitor emissions from such sources, (ii) periodic reports on the nature and amounts of emissions and emissions-related data from such sources, and (iii) correlation of such reports by the State agency with any emission limitations or standards established pursuant to is Act, which reports shall be available at reasonable times for public inspection;

Texas Requirement

The TCEQ requires monitoring for air pollutants as part of its NSR permit program. Certain emission sources are required to submit annual emission inventories and periodic reporting of

emissions, which provides data that is used in air quality modeling to help Texas prepare SIP revisions. Emissions data are available at reasonable times for public inspection, with some information also available on the agency website.

The following chapters of 30 TAC contain rules relevant for this federal requirement:

Chap. 101	General Air Quality Rules
Chap. 106	Permits by Rule, Subchapter A, General Requirements
Chap. 111	Control of Air Pollution from Visible Emissions and Particulate Matter
Chap. 112	Control of Air Pollution from Sulfur Compounds
Chap. 115	Control of Air Pollution from Volatile Organic Compounds
Chap. 116	Control of Air Pollution by Permits for New Construction or Modification
Chap. 117	Control of Air Pollution from Nitrogen Compounds

FCAA, §110(a)(2)(G)

Federal Requirement

(G) provide for authority comparable to that in section 303 and adequate contingency plans to implement such authority;

Texas Requirement

The TCEQ may issue emergency orders, or issue or suspend air permits as required by an air pollution emergency. In addition, the TCEQ also maintains air quality information in a form readily available to the public on the TCEQ's Today's Texas Air Quality Forecast website (http://www.tceq.texas.gov/compliance/monitoring/air/monops/forecast_today.html).

The following chapters of 30 TAC contain rules relevant for this federal requirement:

Chap. 35	Emergency and Temporary Orders and Permits; Temporary Suspension or Amendment of Permit Conditions; Subchapters A, B, C, K
Chap. 118	Control of Air Pollution Episodes

FCAA, §110(a)(2)(H)

Federal Requirement

(H) provide for revision of such plan: (i) from time to time as may be necessary to take account of revisions of such national primary or secondary ambient air quality standard or the availability of improved or more expeditious methods of attaining such standard, and (ii) except as provided in paragraph (3)(C), whenever the Administrator finds on the basis of information available to the Administrator that the plan is substantially inadequate to attain the national ambient air quality standard which it implements or to otherwise comply with any additional requirements Established under this Act;

Texas Requirement

The TCEQ regularly revises the Texas SIP in response to revisions of the NAAQS and EPA rules. See §110(a)(2)(A) above.

FCAA, §110(a)(2)(I)

Federal Requirement

(I) in the case of a plan or plan revision for an area designated as a nonattainment area, meet the applicable requirements of part D (relating to nonattainment areas);

Texas Requirement
SIP revisions that implement the control strategies necessary to bring a nonattainment area into attainment of the NAAQS are not required by the FCAA to be submitted within three years of the promulgation of a new or revised NAAQS. Therefore, §110(a)(1) does not require this element to be demonstrated as part of an infrastructure SIP submittal (73 FR 16205, at 16206).

FCAA, §110(a)(2)(J)
Federal Requirement

(J) meet the applicable requirements of section 121 (relating to consultation), section 127 (relating to public notification), and part C (relating to prevention of significant deterioration and visibility protection);

Texas Requirement
The TCEQ has an established public participation process for all SIP revisions and permitting programs. The EPA has proposed limited approval/limited disapproval of the rules regarding public participation for air quality NSR permits.[2] Texas has withdrawn from EPA consideration most of the rules that were the subject of the proposed limited approval/limited disapproval, and has submitted new and revised public participation rules to the EPA as a new SIP revision to address the EPA's published concerns regarding these requirements.[3] On October 28, 2010, the EPA signed a notice withdrawing its limited approval/limited disapproval of the SIP revisions relating to public participation because those revisions are no longer before the EPA for review (75 FR 68291). The TCEQ consults with other state agencies, local agencies, and non-governmental organizations, as well as with the environmental agencies of other states regarding air quality concerns. All major sources in Texas are subject to Texas' SIP-approved PSD program. Texas submitted a SIP revision to address Regional Haze, including a long-term strategy to address visibility impairment for each Class I area that may be impacted by emissions from Texas facilities.

The following chapters of 30 TAC contain rules relevant for this federal requirement:

Chap. 7	Memoranda of Understanding
Chap. 35	Emergency and Temporary Orders and Permits; Temporary Suspension or Amendment of Permit Conditions; Subchapters H and K
Chap. 101	General Air Quality Rules
Chap. 116	Control of Air Pollution for New Construction or Modification

FCAA, §110(a)(2)(K)
Federal Requirement

(K) provide for (i) the performance of such air quality modeling as the Administrator may prescribe for the purpose of predicting the effect on ambient air quality of any emissions of any air pollutant for which the Administrator has established a national ambient air quality standard,

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[2] Approval and Promulgation of Implementation Plans; Texas; Revisions to Chapters 39, 55, and 116 Which Relate to Public Participation on Permits for New and Modified Sources, 73 FR 72001 (November 26, 2008).
[3] The TCEQ adopted this rulemaking on June 2, 2010, and the adopted rules were published in the *Texas Register* (TR) on June 18, 2010 (35 TR 5198). These rules became effective on June 24, 2010 and were submitted to the EPA on July 2, 2010. The EPA proposed approval of these rules on December 13, 2012 (77 *Federal Register* 74129).

and (ii) the submission, upon request, of data related to such air quality modeling to the Administrator;

Texas Requirement
Air quality modeling is conducted during development of revisions to the Texas SIP, as appropriate for the state to demonstrate attainment with required NAAQS. Modeling is also a part of the NSR permitting program.

The following chapter of 30 TAC contains rules relevant for this federal requirement:

Chap. 116	Control of Air Pollution for New Construction or Modification

FCAA, §110(a)(2)(L)
Federal Requirement

(L) require the owner or operator of each major stationary source to pay to the permitting authority, as a condition of any permit required under this Act, a fee sufficient to cover (i) reasonable costs of reviewing and acting upon any application for such a permit, and (ii) if the owner or operator receives a permit for such source, the reasonable costs of implementing and enforcing the terms and conditions of any such permit (not including any court costs or other costs associated with any enforcement action), until fee requirement is superseded with respect to such sources by the Administrator's approval of a fee program under title V;

Texas Requirement
The TCEQ assesses fees for reviewing permit applications and for enforcing the terms and conditions of permits.

The following chapters of 30 TAC contain rules relevant for this federal requirement:

Chap. 12	Payment of Fees
Chap. 101	General Air Quality Rules
Chap. 106	Permits by Rule, Subchapter A, General Requirements
Chap. 116	Control of Air Pollution by Permits for New Construction or Modification

FCAA, §110(a)(2)(M)
Federal Requirement

(M) provide for consultation and participation by local political subdivisions affected by the plan.

Texas Requirement
The TCEQ has several cooperative agreements and Memoranda of Understanding with various other state and local agencies and organizations. Consultation with a variety of different organizations is a regular part of the TCEQ's process of developing SIP revisions.

D. Conclusion
The foregoing demonstrates that Texas has the necessary regulatory and statutory authority to meet the infrastructure requirements of FCAA, §110(a)(1) and (2) for the 2010 SO_2 NAAQS.

SECTION VI: CONTROL STRATEGY

A. Introduction (No change)
B. Ozone (No change)
C. Particulate Matter (No change)
D. Carbon Monoxide (No change)
E. Lead (No change)
F. Oxides of Nitrogen (No change)
G. Sulfur Dioxide (No change)
H. Conformity with the National Ambient Air Quality Standards (No change)
I. Site Specific (No change)
J. Mobile Sources Strategies (No change)
K. Clean Air Interstate Rule (No change)
L. Transport (Revised)
M. Regional Haze (No change)

LIST OF ACRONYMS

AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
CFR	Code of Federal Regulations
EPA	United States Environmental Protection Agency
FCAA	Federal Clean Air Act
FIP	federal implementation plan
FR	*Federal Register*
H_+	hydrogen ion
H_2O	water
H_2SO_4	sulfuric acid
HSO_{4-}	hydrogen sulfate ion
HYSPLIT	Hybrid Single Particle Lagrangian Integrated Trajectory Model
NAAQS	National Ambient Air Quality Standard
NO_2	nitrogen dioxide
S	sulfur
SO_2	sulfur dioxide
SO_3	sulfur trioxide
SO_X	sulfur oxides
NSR	New Source Review
O_2	oxygen
$PM_{2.5}$	fine particulate matter
ppb	parts per billion
ppm	parts per million
PSD	Prevention of Significant Deterioration
SIP	state implementation plan
TAC	Texas Administrative Code
TACB	Texas Air Control Board
TCAA	Texas Clean Air Act
TCEQ	Texas Commission on Environmental Quality (commission)
TNRCC	Texas Natural Resource Conservation Commission
TR	*Texas Register*
U.S.	United States

LIST OF TABLES

Table 2-1: EPA Region 6 SO_2 Monitor Sites in 2011

LIST OF FIGURES

Figure 2-1: Sulfur Dioxide Emissions in Texas by Source Sector
Figure 2-2: One-Hour SO_2 Design Values in EPA Region 6
Figure 2-3: 2011 One-Hour SO_2 2011 99th Percentile in EPA Region 6
Figure 2-4: One-Hour SO_2 Design Values in Texas
Figure 2-5: 12-Hour Backward Trajectories for Representative Sites in States Neighboring Texas

CHAPTER 1: GENERAL

1.1 BACKGROUND

"The History of the Texas State Implementation Plan (SIP)," a comprehensive overview of the SIP revisions submitted to the United States Environmental Protection Agency (EPA) by the State of Texas, is available on the Introduction to the SIP Web page (http://www.tceq.texas.gov/airquality/sip/sipintro.html#History) on the Texas Commission on Environmental Quality's (TCEQ) website (http://www.tceq.texas.gov).

1.2 INTRODUCTION

The EPA strengthened the sulfur dioxide (SO_2) National Ambient Air Quality Standard (NAAQS) on June 2, 2010 (published June 22, 2010; 75 FR 35520) with the promulgation of a 75 parts per billion (ppb) one-hour primary standard. States are required by §110(a)(1) of the Federal Clean Air Act (FCAA) to revise their air quality SIPs within three years of NAAQS promulgation to provide for implementation, maintenance, and enforcement of the standard. Infrastructure SIPs addressing the requirements of §110(a)(2) for the 2010 SO_2 NAAQS are due to the EPA by June 2, 2013. Nonattainment area SIP revisions demonstrating attainment of the NAAQS by August 2017 must be submitted to the EPA within 18 months of designations. Additional monitoring requirements were also initiated with promulgation of the 2010 SO_2 NAAQS, including fully operational SO_2 air quality monitors in place by January 1, 2013, for a number of identified cities.

Area designations for the 2010 SO_2 NAAQS are required to be finalized by the EPA by June 3, 2013. State recommendations for designations were due to the EPA on June 2, 2011. The recommended designations for Texas were submitted to the EPA on June 2, 2011 and revised on April 20, 2012. Attainment designations were recommended for Dallas, Ellis, El Paso, Galveston, Gregg, Harris, Kaufman, McLennan, Nueces, and Jefferson Counties, as 2011 SO_2 design values (DV) from regulatory monitors located in those counties showed the standard met. Unclassifiable designations were recommended for all remaining counties in Texas because there are no SO_2 regulatory monitors located in those counties. On or about February 7, 2013, the EPA notified states that it intends to meet the June 2013 designations deadline only for areas determined to be in nonattainment of the 2010 SO_2 NAAQS, based on identified monitored NAAQS violations. The EPA intends to address the designations for all other areas in separate future actions. Nonattainment area SIP revisions demonstrating attainment of the NAAQS by August 2017 in the identified nonattainment areas are due to the EPA within 18 months of those designations. Correspondence to states and tribes from the EPA in February 2013 identified the areas of the country that the EPA intends to designate in nonattainment of the 2010 NAAQS. The EPA's letter to TCEQ stated that no nonattainment areas were identified in Texas, and designation action for Texas is deferred until such time additional data are gathered pursuant to the EPA's implementation strategy.

This SIP revision satisfies the FCAA, §110(a)(1) requirement and documents revisions to the Texas SIP at 40 Code of Federal Regulations Part 52, Subpart SS to satisfy the infrastructure requirements for the 2010 SO_2 NAAQS, as stipulated in FCAA, §110(a)(2)(A) through (M). Texas infrastructure SIP revisions are developed as an expansion of the Section V: *Legal Authority* portion of the Texas SIP. This expanded section is unique to infrastructure SIP revisions submitted to address requirements of FCAA, §110(a)(1) in Texas. The infrastructure demonstration documents how existing Texas statutes and rules provide the basis for Texas to meet its obligations under the FCAA to provide for the implementation, maintenance, and enforcement of the 2010 SO_2 NAAQS. It details each of the infrastructure requirements in

§110(a)(2) and identifies elements of the state's air quality programs, rules, regulations, and policies in place to address those requirements, including basic program elements such as enforceable emission limitations and control measures, air quality monitoring and modeling, a permitting program, adequate funding and personnel, authority under state law to carry out the plan, emissions reporting, emergency powers, public participation, and fee collection. Please see the portion of this SIP revision revising Section V: *Legal Authority* of the Texas SIP for the infrastructure demonstration for the 2010 SO_2 NAAQS.

The infrastructure obligations specified in FCAA, §110(a)(2)(D)(i)(I), require states to adequately address the interstate transport of criteria pollutants that contribute significantly to nonattainment or interfere with maintenance of the NAAQS in other states. A detailed technical analysis demonstrating that Texas specifically addresses the interstate transport requirements in FCAA, §110(a)(2)(D)(i)(I) for the 2010 SO_2 NAAQS is contained in Chapter 2: *Required Control Strategy Elements* of this SIP revision. The technical analysis and the demonstration of noninterference due to transport, both contained in Chapter 2, were developed as an expansion of the existing Section VI: *Control Strategy* section of the Texas SIP.

The technical demonstration contained in Chapter 2 includes a discussion of SO_2 transport and an analysis of back trajectories from monitoring sites in neighboring states. The analysis reveals originations for the air parcels that could be impacting those monitors. The data collected from regulatory monitors showing no violations of the 2010 SO_2 NAAQS in Texas, together with the transport analysis in this SIP revision demonstrates that SO_2 from Texas sources does not interfere with attainment or maintenance of the NAAQS in surrounding states. This documents that the Texas SIP satisfies FCAA, §110(a)(2)(D)(i)(I), and has adequately addressed interstate transport requirements for the 2010 SO_2 NAAQS.

Initial implementation instructions included in the preamble to the final 2010 SO_2 NAAQS conveyed the EPA's expectation for infrastructure SIP submittals to include maintenance plans with modeling demonstrations for areas designated unclassifiable. A requirement for the use of refined American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) dispersion modeling to assess compliance by large SO_2 sources was also discussed in the rule. The maintenance plan and modeling demonstration expectations led to challenges by Texas and others. Texas' Petition for Review was denied by the United States Court of Appeals for the D.C. Circuit on July 20, 2012. In preparation for a final implementation rule (anticipated July 2013), the EPA issued a white paper to promote discussion and obtain stakeholder feedback on implementation issues and compliance assessment options. In an April 12, 2012 letter to states, the EPA recommended that states focus their June 2013 SIP submittals on the traditional infrastructure elements of FCAA, §110(a)(1) and (2) rather than on modeling demonstrations showing attainment for unclassifiable areas. The EPA has not yet issued final infrastructure or transport guidance for the 2010 SO_2 NAAQS, but in order to meet statutory deadlines for submittal of infrastructure SIPs, states do not have the option of waiting for EPA to provide guidance before proceeding with infrastructure and transport SIP development, review, and submittal.

1.3 HEALTH EFFECTS

Current scientific evidence links short-term exposures to SO_2, ranging from five minutes to 24 hours, with an array of adverse respiratory affects including bronchoconstriction and increased asthma symptoms (75 FR 35520). These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing) and other at-risk populations including children and elderly people.

Sulfur oxides (SO_X) including SO_2 can react with other compounds in the atmosphere to form small particles. These particles have the potential to penetrate deeply into sensitive parts of the lungs and, at high levels, can contribute to respiratory disease, such as emphysema and bronchitis. They may aggravate existing heart disease, leading to increased hospital admissions and possibly premature death (75 FR 35520). However, the health effects associated with current ambient levels of particulate matter are less clear. Although some observational epidemiology studies have reported statistical associations between such health effects and ambient particulate matter, a clear mechanism of action has yet to be identified. Furthermore, these reported effects vary widely with geographical location, as well as with size and composition of the particulate matter (EPA/600/R-08/139F sections 2.1.1 and 2.2.2).

1.4 PUBLIC HEARING AND COMMENT INFORMATION

The commission offered a public hearing for the proposed SIP revision on December 4, 2012 at 10:00 a.m. in Austin, Texas. No member of the public arrived for the public hearing, so it was not opened.

Written comments were accepted via mail, fax, and through the eComments system (http://www5.tceq.texas.gov/rules/ecomments/) from November 5, 2012 through December 7, 2012. Two comments were received – one from the EPA and one from the Sierra Club. Summaries of those comments along with the commission's responses are provided in the Response to Comments accompanying this SIP revision.

An electronic version of this SIP revision is available on the TCEQ's Web page Air Pollution from Sulfur Dioxide (http://www.tceq.texas.gov/airquality/sip/criteria-pollutants/sip-so2).

1.5 SOCIAL AND ECONOMIC CONSIDERATIONS

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

1.6 FISCAL AND MANPOWER RESOURCES

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

1.7 COORDINATION WITH LOCAL AGENCIES

The TCEQ has determined that there will be no assignment to local agencies. However, pre-existing assignments to local agencies regarding various enforcement activities remain in effect and could be used if enforcement activities are delegated to the TCEQ from the EPA.

1.8 ORGANIZATIONS RESPONSIBLE FOR DEVELOPMENT, IMPLEMENTATION, AND ENFORCEMENT

The TCEQ is the agency delegated authority by the Texas Legislature regarding the protection of air quality in the State of Texas. Other local government entities have limited authority regarding air quality matters in the State of Texas.

1.9 DATA AVAILABILITY

The TCEQ affirms that it will retain all data used in the preparation of this SIP revision. All supporting documents and data are publicly available via the TCEQ's Texas State Implementation Plan website (http://www.tceq.texas.gov/airquality/sip) or are available from the TCEQ upon request.

CHAPTER 2: REQUIRED CONTROL STRATEGY ELEMENTS

2.1 BACKGROUND

The United States Environmental Protection Agency (EPA) first set standards for sulfur dioxide (SO_2) as a surrogate for sulfur oxides (SO_X) in 1971, setting a 24-hour primary standard at 140 parts per billion (ppb) and an annual average standard at 30 ppb (40 CFR Part 50.4). The EPA also set a three-hour average secondary standard at 500 ppb (40 CFR Part 50.5). The EPA strengthened the SO_2 National Ambient Air Quality Standard (NAAQS) on June 2, 2010, (published June 22, 2010; 75 FR 35520) with the promulgation of a new 75 ppb one-hour primary standard. The revised NAAQS was designed to protect against short term exposure to SO_2. With promulgation of the 2010 SO_2 NAAQS the EPA revoked the previous 24-hour and annual standards for areas not designated nonattainment effective one year after area designations for the NAAQS are finalized by the EPA.

States are required by §110(a)(1) of the Federal Clean Air Act (FCAA) to revise their air quality SIPs within three years of NAAQS promulgation to provide for implementation, maintenance, and enforcement of the standard. Infrastructure SIPs addressing those requirements for the 2010 SO_2 NAAQS are due to the EPA by June 2, 2013. Infrastructure SIPs must contain adequate provisions to prohibit any source or other type of emissions activity within the state from emitting any NAAQS pollutants in amounts that will contribute significantly to nonattainment, or interfere with maintenance, of the NAAQS by any other state.

SO_2 is formed from sulfur and oxygen during combustion of a sulfur-containing fuel. Once SO_2 is formed, it can oxidize to form sulfur trioxide (SO_3), which is a reversible reaction. Typically, this reaction is slow, causing higher concentrations of SO_2 compared to SO_3; however, the presence of nitrogen dioxide (NO_2) acts as a catalyst to enhance the reaction (Holleman and Wiberg, 2001). SO_3 in the gaseous phase can then become hydrated to form sulfuric acid in an aqueous phase, which, when precipitated, is termed acid rain. Sulfuric acid then dissociates into hydrogen sulfate ions and a proton. Of the hydrogen sulfate ions, 10% will dissociate further into sulfate ions. These chemical reactions of sulfur, detailed below, were taken from *The Chemistry of Oxygen and Sulfur*, 2011.

Combustion of Sulfur:

$$S_{(s)} + O_{2\,(g)} \rightarrow SO_{2\,(g)}$$

Oxidation of Sulfur Dioxide to Form Sulfur Trioxide (Reversible Reaction):

$$2SO_{2\,(g)} + O_{2\,(g)} \Leftrightarrow 2SO_{3\,(g)}$$

Hydration of Sulfur Trioxide to Form Sulfuric Acid:

$$SO_{3\,(g)} + H_2O_{(l)} \rightarrow H_2SO_{4\,(aq)}$$

Dissociation of Sulfuric Acid

$$H_2SO_{4\,(aq)} \rightarrow HSO_4^-{}_{(aq)} + H^+{}_{(aq)}$$

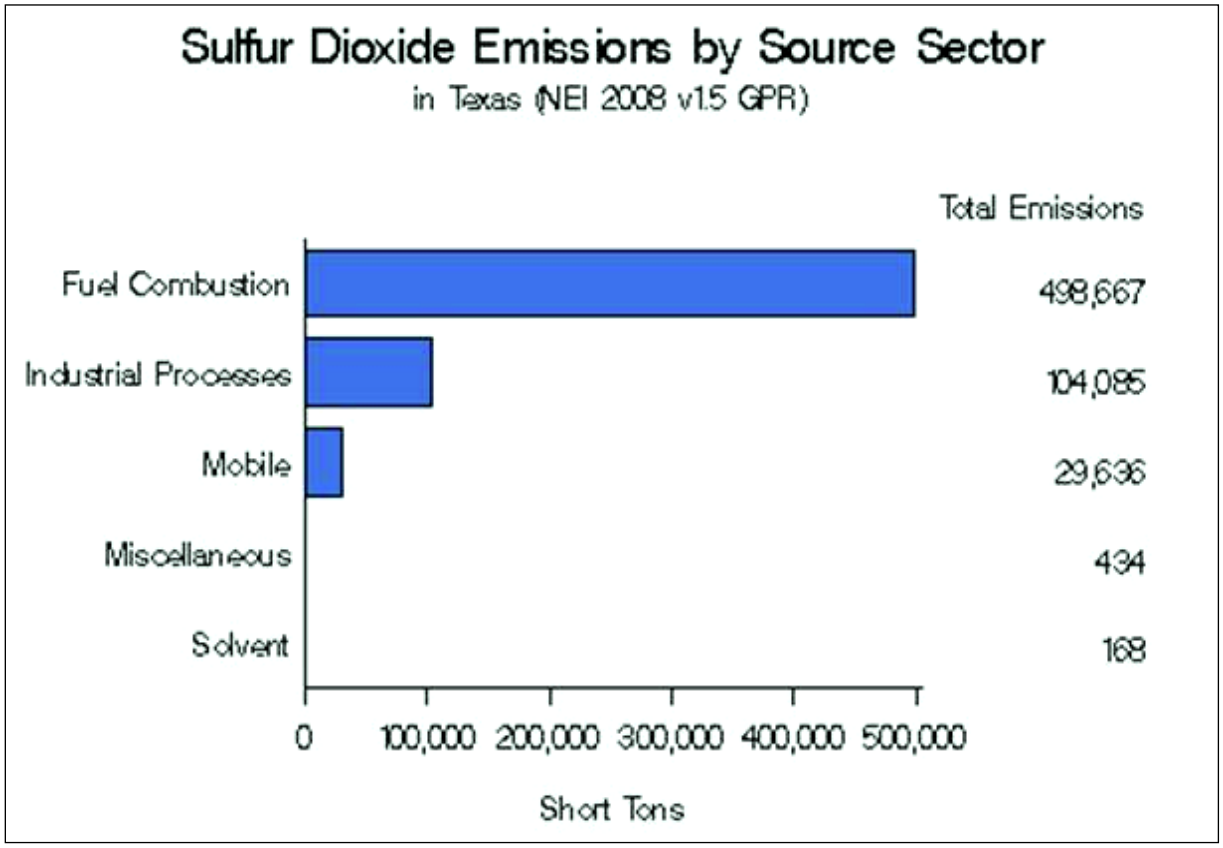
Dissociation of Hydrogen Sulfate Ion

$$HSO_4^-{}_{(aq)} \rightarrow SO_4^{2-}{}_{(aq)} + H^+{}_{(aq)}$$

SO_2 gas is a product of combustion, released by volcanoes and various industrial processes. Nationally, the largest source of SO_2 emissions is from fossil fuel combustion at power plants, which account for 73% of SO_2 emissions, followed by fossil fuel combustion at other industrial

facilities, which account for 20% of SO_2 emissions (Sulfur Dioxide, 2011). Smaller sources of SO_2 emissions originate from industrial processes such as extracting metal from ore, and burning high sulfur-containing fuels by locomotives, large ships, and non-road equipment.

Figure 2-1: *Sulfur Dioxide Emissions in Texas by Source Sector* shows SO_2 emissions from stationary sources in Texas. In Texas, fossil fuel combustion and industrial processes account for 96% of SO_2 emissions, with fossil fuel combustion emissions accounting for 79% and industrial process emissions accounting for 17%.



Note: State and County Emission Summaries, 2011

Figure 2-1: Sulfur Dioxide Emissions in Texas by Source Sector

2.2 CONTROL STRATEGY OVERVIEW

FCAA, §110(a)(2)(D)(i)(I) requires states to submit a SIP revision that contains adequate provisions to prohibit any source or other type of emissions activity within the state from emitting any air pollutants in amounts that will:

- contribute significantly to nonattainment of the NAAQS for areas in any other state; or
- interfere with maintenance of the NAAQS in any other state.

2.2.1 Significant Contribution to Nonattainment and Interference with Maintenance Elements

2.2.1.1 Modeling

The EPA does not currently require states to model to address the interstate transport of SO_2. The TCEQ's regulatory monitors show no indication of areas of the state currently not attaining the 2010 SO_2 NAAQS. The Hybrid Single Particle Lagrangian Integrated Trajectory (HYSPLIT) analysis to follow indicates that no area of Texas contributes to a nonattainment area in Region 6.

2.2.1.2 Region 6 Monitoring Information

In 2011, there were 26 regulatory SO_2 monitors in Texas, five in New Mexico, eight in Oklahoma, two in Arkansas, and six in Louisiana. A list of these monitors is found in Table 2-1: *EPA Region 6 SO_2 Monitor Sites in 2011*.

Along with revising the primary SO_2 NAAQS to a one-hour standard set at 75 ppb, the EPA also revised monitoring network requirements. Based on population data, the EPA requires fully operational SO_2 air quality monitors in place by January 1, 2013 in several areas: Houston-Sugar Land-Baytown, San Antonio-New Braunfels, Dallas-Fort Worth-Arlington, Longview, Beaumont-Port Arthur, and Amarillo.

Table 2-1: *EPA Region 6 SO_2 Monitor Sites in 2011*, indicates that all but two monitor sites in EPA Region 6 are attaining the one-hour SO_2 NAAQS. The two monitor sites that have recorded SO_2 concentrations over the one-hour SO_2 NAAQS are Chalmette-Vista (VC) in Saint Bernard Parish, Louisiana, with a 2011 design value of 287 parts per billion (ppb) and Port Allen (PA) in West Baton Rouge Parish, Louisiana, with a 2011 design value of 93 ppb.

Table 2-1: EPA Region 6 SO_2 Monitor Sites in 2011

AIRS	State	County or Parish	Site Name	2011 Design Value (ppb)	2011 99th Percentile (ppb)
051190007	Arkansas	Pulaski	PIKE AVE AT RIVER ROAD	12	12.2
051390006	Arkansas	Union	UNION MEMORIAL HOSPITAL, ELDORADO	25	25.1
220190008	Louisiana	Calcasieu	WESTLAKE (WL)	39	37.0
220330009	Louisiana	East Baton Rouge	BATON ROUGE-CAPITOL (BC)	46	31.1
220870004	Louisiana	St. Bernard	MERAUX (MX)	26	30.0
220870007	Louisiana	St. Bernard	CHALMETTE-VISTA (VC)	287	300.1
220870009	Louisiana	St. Bernard	JUDGE PEREZ DRIVE	†	85.2
221210001	Louisiana	West Baton Rouge	PORT ALLEN (PA)	93	48.0
350010023	New Mexico	Bernalillo	DEL NORTE HIGH SCHOOL	†	55.2
350171003	New Mexico	Grant	HURLEY SMELTER	1	0.0
350450009	New Mexico	San Juan	BLOOMFIELD	7	9.0
350451005	New Mexico	San Juan	SAN JUAN SUBSTATION	20	20.0
350451233	New Mexico	San Juan	DINE COLLEGE GIS LAB	†	136.0
400019009	Oklahoma	Adair	CHERRY TREE	†	8.5
400710602	Oklahoma	Kay	PONCIA CITY	33	34.0
401010167	Oklahoma	Muskogee	MUSKOGEE	55	94.0
401091037	Oklahoma	Oklahoma	OKC NORTH	5	5.0
401130501	Oklahoma	Osage	TULSA EDIS	42	45.0
401430175	Oklahoma	Tulsa	TULSA PARL	65	68.0
401430235	Oklahoma	Tulsa	TULSA TCWD	32	34.0
401431127	Oklahoma	Tulsa	TULSA CENTRAL	†	25.3
481130069	Texas	Dallas	DALLAS HINTON	†	7.7
481390016	Texas	Ellis	MIDLOTHIAN OFW	15	10.7
481391044	Texas	Ellis	ITALY	7	5.8
481410037	Texas	El Paso	EL PASO UTEP	8	9.8
481410044	Texas	El Paso	EL PASO CHAMIZAL	†	11.1
481410053	Texas	El Paso	EL PASO SUN METRO	11	11.2
481410058	Texas	El Paso	SKYLINE PARK	3	3.8
481670005	Texas	Galveston	TEXAS CITY BALL PARK	41	25.7
481830001	Texas	Gregg	LONGVIEW	61	50.9
482010046	Texas	Harris	HOUSTON NORTH WAYSIDE	13	9.9
482010051	Texas	Harris	HOUSTON CROQUET	22	24.2
482010062	Texas	Harris	HOUSTON MONROE	22	21.2
482010070	Texas	Harris	HOUSTON REGIONAL OFFICE	35	24.5
482010416	Texas	Harris	PARK PLACE C416	38	34.3
482011035	Texas	Harris	CLINTON	42	41.1
482011039	Texas	Harris	DEER PARK #2	†	26.6
482011050	Texas	Harris	SEABROOK FRIENDSHIP PARK	15	15.3
482450009	Texas	Jefferson	BEAUMONT DOWNTOWN	66	26.3
482450011	Texas	Jefferson	PORT ARTHUR WEST	68	62.3
482451050	Texas	Jefferson	BEAUMONT MARY	†	56.4
482570005	Texas	Kaufman	KAUFMAN	14	13.4
483091037	Texas	McLennan	WACO MAZANEC	6	4.2
483491051	Texas	Navarro	CORSICANA AIRPORT	†	51.3
483550025	Texas	Nueces	CORPUS CHRISTI WEST	12	8.6
483550026	Texas	Nueces	CORPUS CHRISTI TULOSO	9	10.2
483550032	Texas	Nueces	CORPUS CHRISTI HUISACHE	27	18.1

Note: † indicates an incomplete or unavailable design value.

2.2.1.3 Region 6 Design Values and 99th Percentiles

Prior to promulgation of the 2010 one-hour SO_2 standard, no area in EPA Region 6 was designated nonattainment for any SO_2 NAAQS. Grant County, New Mexico was the only area designated as a maintenance area for the annual and 24-hour SO_2 NAAQS (Sulfur Dioxide Information, 2012). Designations for the 2010 one-hour SO_2 standard have not been finalized by the EPA.

There are two parishes in Louisiana with 2011 design values exceeding the one-hour SO_2 NAAQS: Saint Bernard Parish and West Baton Rouge Parish. Figure 2-2: *One-Hour SO_2 Design Values in EPA Region 6* shows these two areas over the standard shaded in a light and dark purple, based on severity of monitored SO_2 concentrations. Areas shown in shades of blue all meet the standard based on 2011 SO_2 one-hour design values. The Westlake, Louisiana monitor located in Calcasieu Parish has a 2011 design value of 39 ppb. Calcasieu Parish is situated between the Texas border and the two Louisiana monitors with 2011 design values over the one-hour standard (the VC and PA monitors). The Westlake monitor's attainment of the NAAQS suggests that SO_2 transport from Texas does not contribute to the elevated SO_2 concentrations seen at either the VC monitor in Saint Bernard Parish or at the PA monitor in West Baton Rouge Parish.

The 2011 design value for the Baton Rouge-Capitol monitor located in East Baton Rouge Parish, Louisiana, is also meeting the SO_2 NAAQS at 46 ppb. East Baton Rouge Parish is situated between the two Louisiana parishes with 2011 design values exceeding the one-hour standard (Saint Bernard and West Baton Rouge Parishes). This suggests that there is little to no SO_2 transport between these parishes. In Saint Bernard Parish, two monitors had enough data for a valid 2011 design value. One of the monitors - VC, exceeded the standard with a 2011 design value of 287 ppb. The other monitor - Meraux (MX), easily attained the standard, with a 2011 design value of 26 ppb. This suggests that local emissions, rather than long range transport, are more likely contributing to the high concentrations of SO_2.

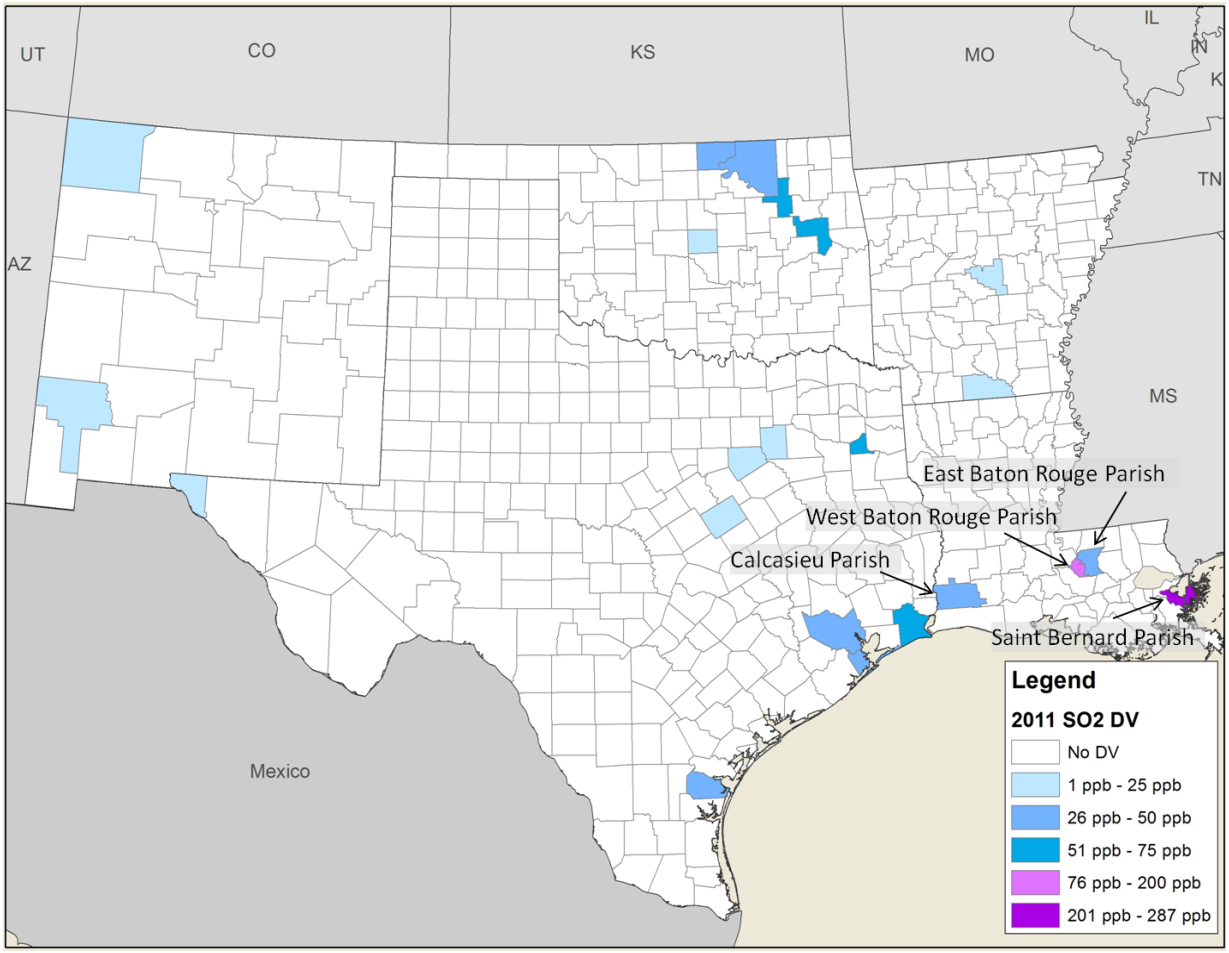


Figure 2-2: One-Hour SO_2 Design Values in EPA Region 6

Because a design value is calculated as the three year average of the 99th percentiles, it is important to examine the 99th percentile in detail. Figure 2-3: *2011 One-Hour SO_2 2011 99th Percentile in EPA Region 6* shows the locations of all the current SO_2 monitors in that region. The range of their 2011 99th percentiles is indicated. Monitors located within an area can vary in their 99th percentiles, as shown in an example occurrence in San Juan County, New Mexico. The Diné College GIS lab monitor in San Juan County had insufficient valid data for 2011 design value computation, but had a 2011 99th percentile of 136 ppb. Other monitors in New Mexico also located in San Juan County - Bloomfield and San Juan Substation - both had 99th percentiles below 25 ppb. This analysis suggests that locally contributed SO_2 emissions are influencing these monitors, but not enough to cause exceedances of the standard.

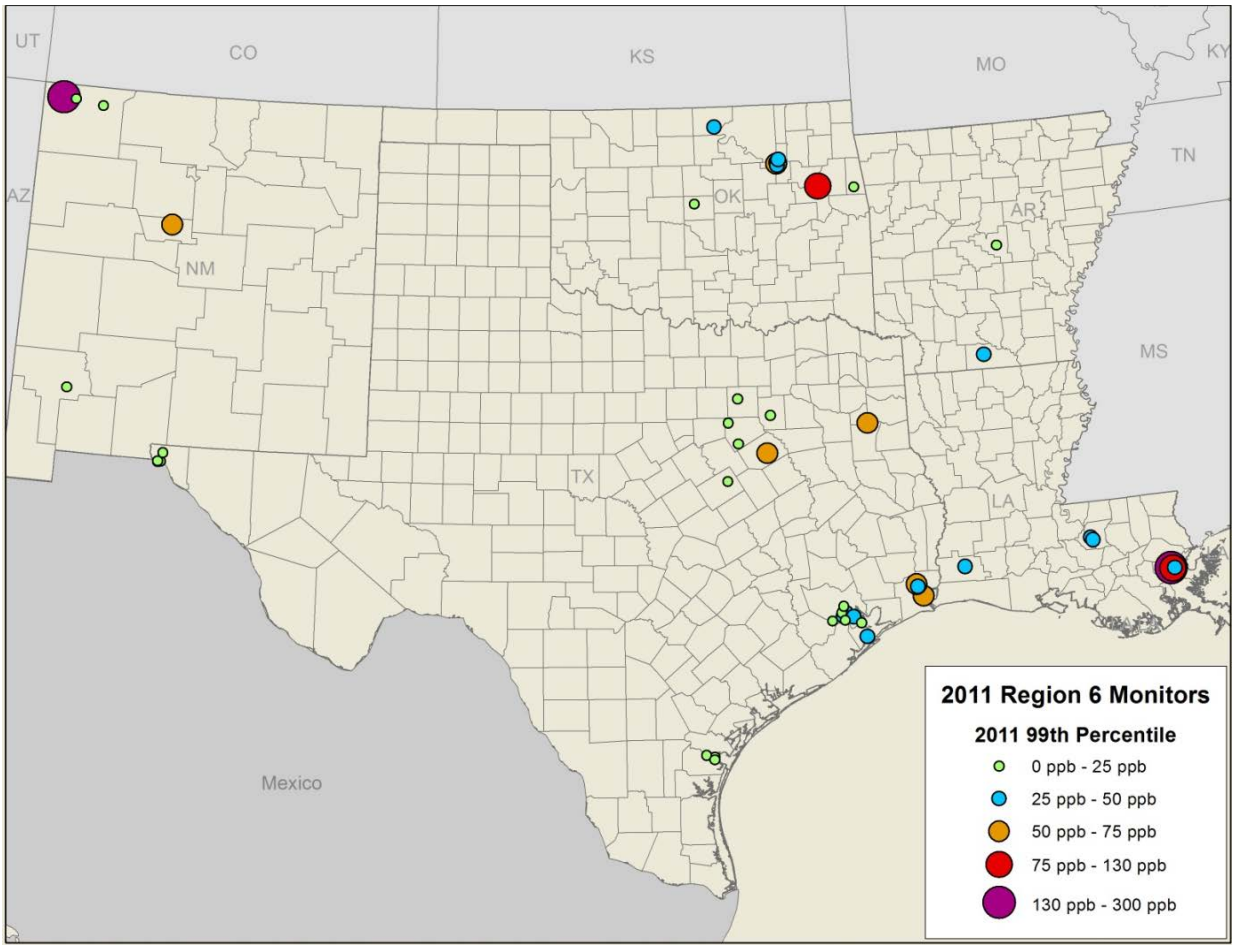


Figure 2-3: 2011 One-Hour SO_2 2011 99th Percentile in EPA Region 6

2.2.1.4 Review of Texas Design Values

Figure 2-4: *One-Hour SO_2 Design Values in Texas* indicates that all counties of Texas with SO_2 monitors attained the 2010 NAAQS in 2011. Kaufman and Dallas Counties have exhibited fairly flat design value trends since 2003 and 2000, respectively, never exceeding more than 20 ppb. SO_2 design values have been reported at McLennan County since 2010, but that is not enough data to determine a trend. El Paso County monitored a 78% drop in its SO_2 design value, from 67 ppb in 2000 to 15 ppb in 2002, followed by a fairly steady trend well below 20 ppb since 2002.

Harris and Galveston Counties have seen steadily decreasing SO_2 design values, dropping by 56.7% and 53.9% respectively since 2000. The SO_2 design value in Gregg County increased slightly from 2002 to 2007, but has fallen since 2007, returning to a value below the 2002 design value in 2011. The SO_2 design value in Nueces County peaked in 2003 at 81 ppb before declining 66.6% to 27 ppb in 2011.

Despite three years of design value increases in 2005, 2006, and 2007, overall the SO_2 design value in Ellis County fell 90.5% from its peak of 159 ppb in 2001 to 15 ppb in 2011. Jefferson County saw a similar spike in 2006, before resuming its downward trend, falling 60.2% from 171 ppb in 2000 to 68 ppb (validated) in 2011.

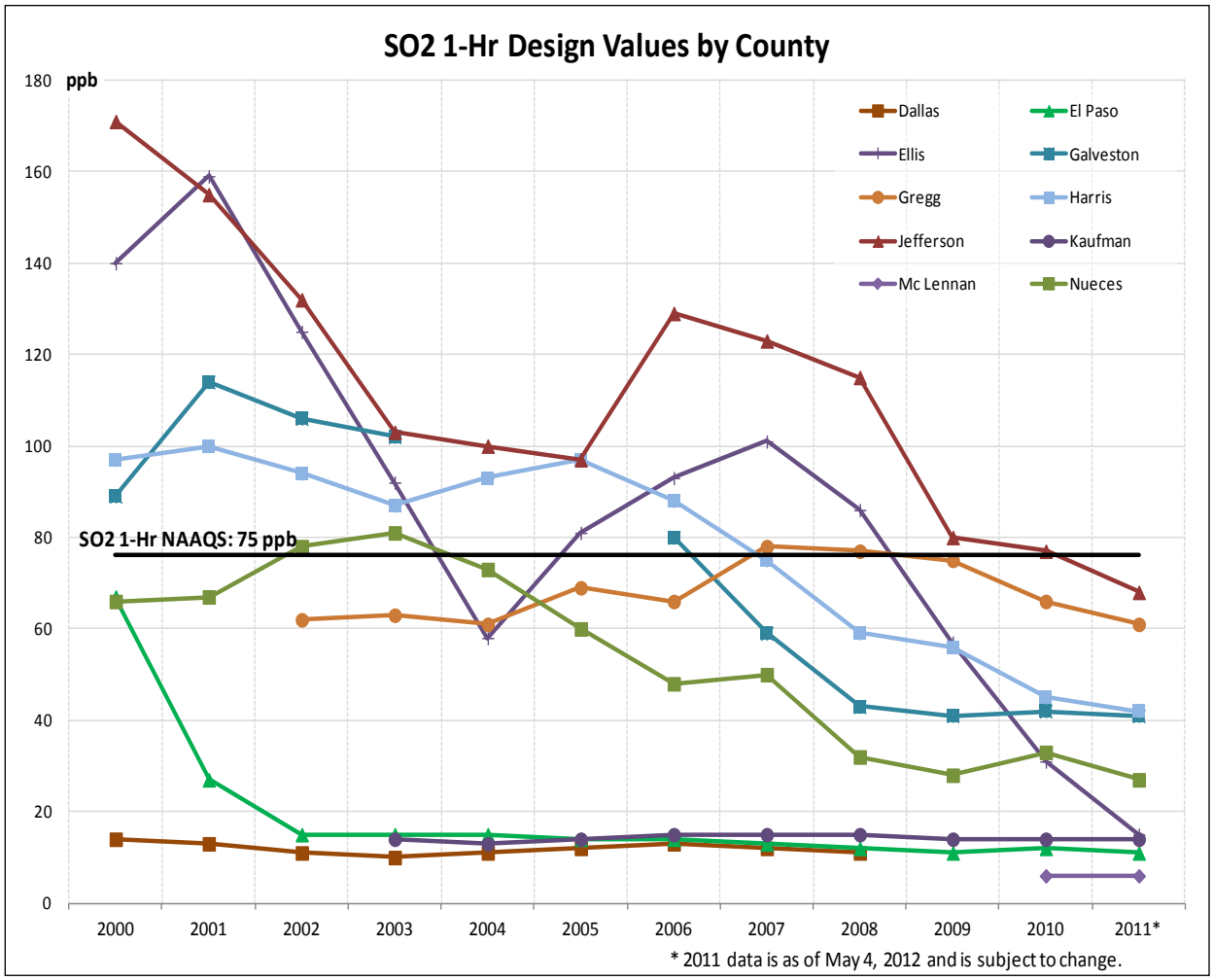


Figure 2-4: One-Hour SO_2 Design Values in Texas

2.2.1.5 Transport Analysis

To assess possible impacts of SO_2 emitted in Texas and transported to neighboring states, back trajectory analysis was conducted to identify the most likely pathways (mean-trajectory-paths), if any, of SO_2 transport occurrences. This analysis assumes there is no link between a mean-trajectory-path and an SO_2 concentration. A mean-trajectory-path provides only an indication of the direction a parcel of air might have traveled; much more analysis is needed to confirm an impact.

The HYSPLIT model version 4, developed by the National Oceanic and Atmospheric Administration (NOAA) (HYSPLIT - Hybrid Single Particle Lagrangian Integrated Trajectory Model, 2012) was employed to construct the back trajectories. Monitors with the highest observed SO_2 values were chosen as receptor sites for the back trajectory analysis. Cluster analysis was performed for each of these monitors in order to define the mean-trajectory-path. This mean-trajectory-path represents the "average" of a group of trajectories from which air currents traveled from other places to a representative monitor. This method quantifies the

directions and frequency of air traveling to the monitor, but cannot identify precise routes for airborne particle travel. This method also cannot determine the pollutant concentrations in these air parcels.

The details of the HYSPLIT parameters are as follows: trajectories were initiated from a receptor site during late afternoons, when surface winds are most conducive for SO_2 transport. The time selected to begin backward trajectory tracking from a receptor site was 5:00 p.m. LST (Local Standard Time). Trajectory height used was 800 meters, ensuring transport within the mixing layer and minimal disruption from surface terrain. Each computed trajectory was followed for a 12 hour duration using EDAS-4KM meteorological data sets. Trajectories were created for all days when SO_2 concentrations at or above the 90th percentile at the receptor site were observed - the top 10% of days.

Results suggest that Oklahoma is the state most likely affected by air parcels from Texas. However, SO_2 concentrations are usually highest near sources, decreasing as the distance from the source increases. Two likely transport paths identified with the clustering procedure accounted for 35% of the 358 trajectories ending in Oklahoma. Arkansas is the state second most likely to be affected by emissions from Texas, though to a much lesser degree. Potential transport paths from Texas identified with the clustering procedure accounted for 12% of the trajectories ending in Arkansas. However, neither Oklahoma nor Arkansas has regulatory monitors with a 2011 design value over the 2010 SO_2 NAAQS. Likely transport paths from Texas passing near the Southeast Texas coast account for 11% of the trajectories ending in Louisiana. No potential transport paths from Texas to New Mexico were identified.

In the lower right quadrant of Figure 2-5: *12-Hour Backward Trajectories for Representative Sites in States Neighboring Texas,* there is a mean trajectory passing from the Houston area and near the Lake Charles, Louisiana, area, which currently is in attainment of the standard, before reaching the New Orleans, Louisiana, area. Although the clusters show possible evidence of transport, this analysis does not confirm any link between SO_2 generated along a trajectory path and SO_2 measured at the monitor.

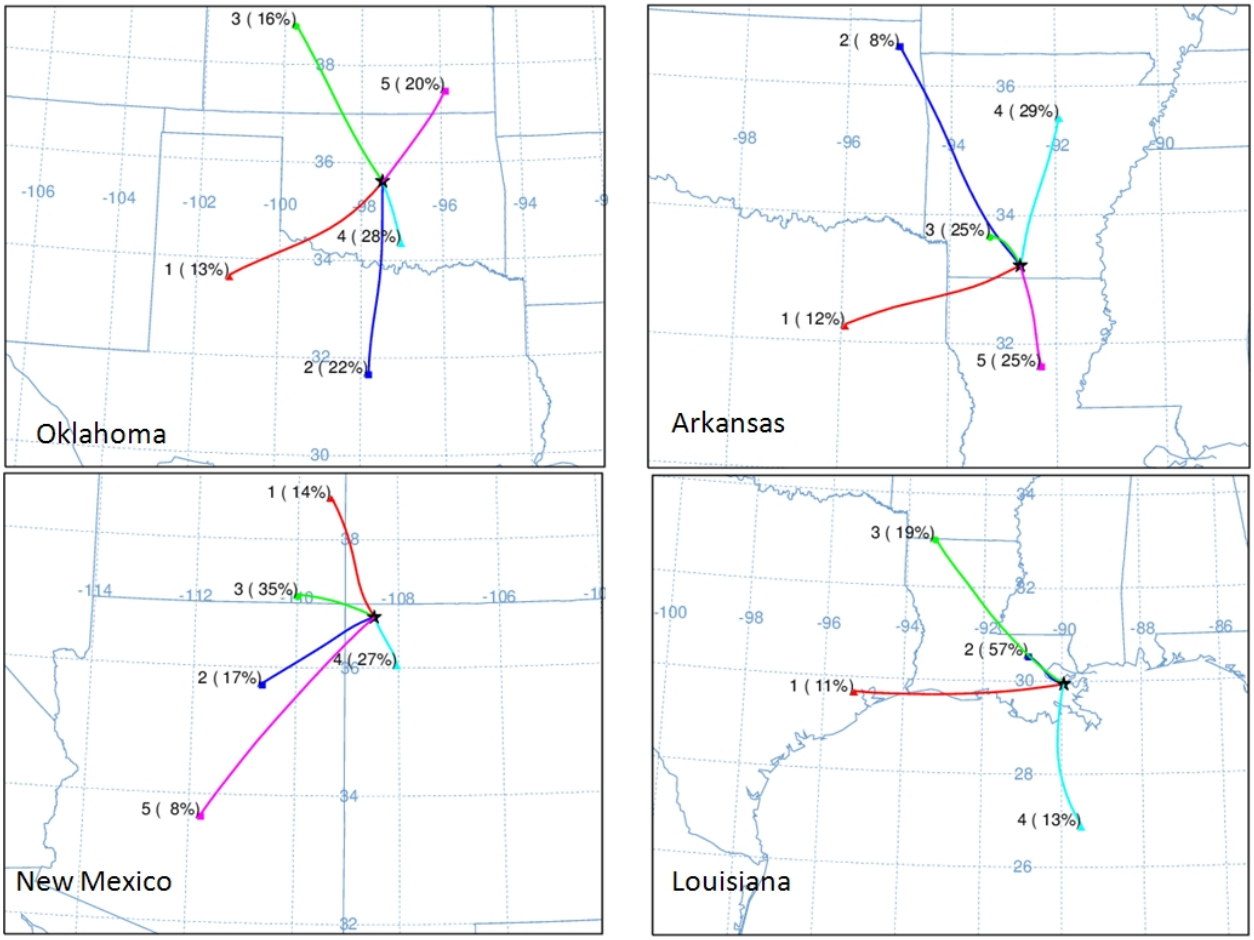


Figure 2-5: 12-Hour Backward Trajectories for Representative Sites in States Neighboring Texas

2.3 CONCLUSION

Texas had no regulatory monitors with 2011 design values exceeding the 2010 SO_2 one-hour standard. Within the EPA's Region 6 area, two monitors located in Louisiana (Saint Bernard Parish and West Baton Rouge Parish) had 2011 design values exceeding the standard. The Westlake monitor located in Louisiana and bordering Texas is attaining the standard. The analysis indicates that SO_2 is not transported to other states from Texas. If emissions from Texas sources significantly contributed to the areas in Louisiana with monitors exceeding the standard, the Westlake monitor would also have had to exhibit high SO_2 concentrations. The back trajectory analysis clearly indicates that air masses are typically not transported from Texas to Louisiana.

2.4 REFERENCES

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CHAPTER 3: FUTURE REVISIONS TO THE NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

Federal Clean Air Act (FCAA), §110(a)(1) requires states to submit state implementation plans within three years after the promulgation of new or revised NAAQS to meet the infrastructure requirements of FCAA, §110(a)(2), including FCAA, §110(a)(2)(D)(i), relating to interstate transport. If the NAAQS are revised in the future, the Texas Commission on Environmental Quality will need to take the adequate steps relating to the interstate transport of air pollution.

RESPONSE TO COMMENTS

INFRASTRUCTURE AND TRANSPORT STATE IMPLEMENTATION PLAN (SIP) REVISION FOR THE 2010 SULFUR DIOXIDE (SO_2) NATIONAL AMBIENT AIR QUALITY STANDARD (NAAQS)

PROPOSED OCTOBER 31, 2012

A revision to the Texas Air Quality SIP was proposed by the Texas Commission on Environmental Quality (TCEQ or commission) on October 31, 2012: The Infrastructure and Transport SIP Revision for the 2010 SO_2 NAAQS (Project No. 2012-022-SIP-NR). The TCEQ offered a public hearing on December 4, 2012 at 10:00 a.m. in Austin, Texas to receive comments from any interested parties regarding the proposed SIP revision. At the time scheduled for opening the hearing, no member of the public was present, so the hearing was not opened. The TCEQ invited written comments on the proposed SIP revision from November 5, 2012 through December 7, 2012. Comments were received from the United States Environmental Protection Agency (EPA) and from the Sierra Club (SC). Summaries of the comments and the commission's responses are provided below.

TABLE OF CONTENTS

Table of Contents 1
General Comments 1
Authority of the TCEQ to Revise the Texas SIP 3
Texas' Minor New Source Review (NSR) Program 5
Greenhouse Gas (GHG) Permitting 5
Adequacy of Texas' SO_2 Monitoring Network 6
Specific Source Modeling 7
Enforceable Emissions Limits 9
Interstate Transport 10

GENERAL COMMENTS

The SC commented that to avoid confusion, the TCEQ should make clear that this section of the Texas SIP references the current 2010 SO_2 NAAQS (and other current NAAQS). The SC stated that the Texas SIP is currently inadequate to achieve and maintain compliance with the one-hour SO_2 NAAQS, contending that Texas' regulations are not protective or adequate to implement and enforce compliance with the NAAQS. The SC stated that the TCEQ must adopt new provisions into the SIP to protect public health and to comply with Federal Clean Air Act (FCAA) requirements.

Current Texas rules require the enforcement of all NAAQS, and all applicable sources must comply with those NAAQS. However, this comment is beyond the scope of this SIP revision. The purpose of this SIP revision for SO_2 infrastructure and transport is to demonstrate that the Texas SIP meets the infrastructure and transport requirements of FCAA §110(a)(2) for the 2010 SO_2 NAAQS. This SIP revision explains how existing Texas statutes and rules will allow the state to meet its obligations under the FCAA, demonstrating that basic program elements have been addressed for the SO_2 NAAQS. It shows that Texas has the appropriate statutory and regulatory authority to develop necessary rules and control

measures so that all areas of the state can either maintain the standard or attain and then maintain the standard in the future.

This SIP revision is not a demonstration of attainment of the 2010 SO_2 NAAQS. Attainment demonstration SIP revisions would be developed for any Texas areas that are designated nonattainment of the 2010 SO_2 NAAQS. Those SIP revisions would be developed with appropriate stakeholder input and would undergo separate notice and comment rulemaking procedures. At that time, the commission would develop appropriate rules and control measures to allow any areas currently not meeting the 2010 SO_2 NAAQS to come into attainment by the appropriate attainment deadlines. Current monitoring data show that the areas in which the three SO_2 emission sources indicated by the SC in other comments (see Enforceable Emissions Limits) are currently in attainment of the 2010 SO_2 NAAQS. The current permits for these sources, as for all sources of air contaminants within Texas, require such sources to meet all applicable state and federal rules and regulations, including the 2010 SO_2 NAAQS. No changes were made to the SIP revision in response to these comments.

The SC commented that Texas must make clear how its current regulations comply with 42 United States Code (USC), §7410(a)(2)(F)(iii), which requires reports by state agencies on the nature and amounts of emissions and emissions-related data, as well as any emissions limitations or standards established under the Clean Air Act.

Current Texas rules require compliance with 42 USC, §7410(a)(2)(F)(iii). This SIP revision for the 2010 SO_2 NAAQS demonstrates that the Texas SIP meets the infrastructure requirements of FCAA, §110(a)(2), including the emissions reporting requirements of FCAA, §110(a)(2)(F). The infrastructure demonstration details existing Texas statutes and rules that allow the state to meet its obligations under the FCAA and demonstrates Texas' appropriate statutory and regulatory authority to develop necessary rules and control measures so that all areas of the state can either maintain the standard or attain and then maintain the standard in the future. No changes were made to the SIP revision in response to this comment.

The SC commented that the provisions in 30 Texas Administrative Code (TAC) Chapter 112 that the TCEQ relies on are inadequate to achieve and maintain compliance with the one-hour SO_2 NAAQS and that only an emission limit with a one-hour averaging time can assure compliance with a standard that has a one-hour averaging time.

Chapter 112 contains the general rules in place to control air emissions of sulfur compounds in Texas, which includes SO_2. Given that there are no areas in the state that Texas or the EPA have identified as not attaining the SO_2 NAAQS, there is no basis to state that the TCEQ rules requiring controls for sulfur compounds are currently inadequate to attain and maintain the 2010 SO_2 NAAQS.

The EPA requested more discussion of Texas' SIP compliance with the conflict of interest provisions in FCAA, §128 in order to satisfy the requirements of §110(a)(2)(E)(ii) of the FCAA.

The infrastructure demonstration states for FCAA, §110(a)(2)(E) that "The TCEQ relies on the complete statutory and regulatory authority as referenced throughout this document." The statutory authority includes Texas Water Code, Chapter C: Texas Natural Resources Commission, which includes the statutory requirements for the eligibility and selection of the commissioners of the TCEQ.

These requirements ensure that Texas is in compliance with FCAA, §128. The EPA has acknowledged this authority previously when it approved this portion of the Texas infrastructure SIP demonstration for the 1997 ozone and particles with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers ($PM_{2.5}$) and 2006 $PM_{2.5}$ NAAQS. Although infrastructure SIP revisions are NAAQS-specific, the requirements of §110(a)(2)(E), specifically, are the same regardless of the criteria pollutant at issue. The EPA discussed its proposed approval of this section of the Texas ozone and $PM_{2.5}$ infrastructure SIP in the EPA's September 22, 2011 Technical Support Document, Docket ID EPA-R06-OAR-2008-0638, page 18. Quoting EPA analysis:

> **The TCEQ commissioners take final action on Texas state rules and their eligibility to serve as commissioner is subject to Section 128 of the FCAA. Section 128 requires that, (1) any board or body which approves permits or enforcement orders shall have at least a majority of members who represent the public interest and do not derive any significant portion of their income from persons subject to permits or enforcement orders under this chapter, and (2) any potential conflicts of interest by members of such board or body or the head of an executive agency with similar powers be adequately disclosed. The three commissioners of the TCEQ are appointed by the governor to represent the general public and their suitability and conduct are prescribed by the Texas Water Code (TWC). The state rules that address Section 128 of the FCAA are found in the TWC, Title 2 (Water Administration), Subtitle A (Executive Agencies), Chapter 5 (Texas Natural Resource Conservation Commission), Subchapter C (Texas Natural Resource Conservation Commission), Section 5.053: Eligibility for Membership; Section 5.054: Removal of Commission Members; Section 5.059: Conflict of Interest; Section 5.060: Lobbyist Prohibition; and Subchapter D (General Powers and Duties of the Commission), Section 5.111: Standards of Conduct. In 1981, the EPA approved into the SIP the Standards of Conduct of State Officers and Employees (Texas Revised Civil Statute Annotated, Article 6252-9b) (46 FR 61124). The current TWC rules retain the standards of conduct for state officers and employees approved in 1981. We are proposing that the Texas SIP meets the requirements of section 110(a)(2)(E).**

The commission agrees with EPA's previous analysis that Texas meets the requirements of FCAA, §110(a)(2)(E)(ii). No changes were made to the SIP revision in response to this comment.

AUTHORITY OF THE TCEQ TO REVISE THE TEXAS SIP

The EPA pointed out the §110(a)(2)(H) requirement that a state have the authority to revise the SIP as necessary. The EPA noted that the proposal includes the TCEQ's explanation that it regularly revises the Texas SIP in response to revisions of the NAAQS and EPA rules. The EPA also noted that the TCEQ cross-references its discussion on §110(a)(2)(A) in the proposal. The EPA recommended that the TCEQ also provide discussion of and reference to such authority that allows it to make the regular revisions as stated.

The commission's statutory and regulatory authority to revise its SIP as necessary is broadly contained within the statutes and rules referenced throughout this infrastructure and transport SIP revision. Furthermore, the EPA has previously approved Texas' infrastructure SIP for the 1997 ozone and $PM_{2.5}$ and 2006 $PM_{2.5}$ NAAQS for FCAA, §110(a)(2)(H) (see 76 FR 81371). Although infrastructure SIP revisions are NAAQS-specific, the requirements of §110(a)(2)(H) specifically are the same regardless of the criteria pollutant at issue. The commission's authority to revise Texas' SIP to address any future problems with the 2010 SO_2 NAAQS is consistent with its authority to revise its SIP for any other NAAQS. The EPA proposed approval of this section of the Texas ozone and $PM_{2.5}$ infrastructure SIP in the EPA's September 22, 2011, Technical Support Document, Docket ID EPA-R06-OAR-2008-0638, page 23. Quoting EPA analysis:

> **... the TCAA 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 SIP under §382.011 and 382.012. The TCAA under §382.011 further provides the TCEQ with "the powers necessary or convenient to carry out its responsibilities." Section 382.017 authorizes the TCEQ to adopt rules and §382.036 requires that the TCEQ "advise, consult, and cooperate with [...] the federal government." Thus, Texas has the authority to revise its SIP as may be necessary to account for revisions of the NAAQS, adopt more effective methods of attaining the NAAQS, and respond to EPA SIP calls. We are proposing that the Texas SIP meets the requirements of §110(a)(2)(H).**

Additionally, the EPA's historical interpretation has been that SIPs are subject to revision as standards and the ability to meet those standards change. The EPA has stated that it is immaterial whether or not a state has acknowledged that its plan may change. The EPA first made this finding in the May 31, 1972 regulation titled Part 52 – Approval and Promulgation of Implementation Plans, 37 FR 10842, at 10846, stating: "In accordance with the Act and the Administrator's regulations (40 CFR 51.6), all State plans are subject to revision, as necessary, to take account of revisions of the national standards, availability of improved or more expeditious methods of attaining the national standards, or a finding by the Administrator that a State plan is substantially inadequate to attain or maintain a national standard. Accordingly, whether a state has acknowledged that its implementation plan is subject to revision is considered immaterial." No changes were made to the SIP revision in response to these comments.

The SC commented that §110(a)(2)(H)(ii) mandates that infrastructure SIPs provide for their revision if EPA finds on the basis of information available to it that the plan is substantially inadequate to attain the NAAQS.

The Texas SIP has provisions in place that allow for it to be updated as necessary if an area is found to be out of attainment, as required by FCAA, §110(a)(2)(H)(ii). As mentioned previously, the commission's statutory and regulatory authority to revise its SIP as necessary is broadly contained within the statutes and rules referenced throughout this infrastructure and transport SIP revision. No changes were made to the SIP revision in response to this comment.

TEXAS' MINOR NEW SOURCE REVIEW (NSR) PROGRAM

The SC commented that Texas' minor NSR program does not require sources that are below the prevention of significant deterioration (PSD) threshold to demonstrate that they will not cause or contribute to a violation of the one-hour SO_2 NAAQS. The SC stated that the TCEQ must add a regulation to its SIP to require all minor sources to make such a demonstration by amending 30 TAC §116.111(a)(2) to make clear that minor sources as well as major sources must demonstrate they will not cause or contribute to a violation of the one-hour SO_2 NAAQS.

Texas has a SIP-approved minor NSR permitting program; sources that obtain a minor NSR permit in Texas are required to comply with all applicable federal and state regulations, including current NAAQS. Section §116.111(a)(2)(J) allows the executive director to require a demonstration through air dispersion modeling to determine air quality impacts from a proposed new facility or source modification. This requirement applies to minor NSR sources as well as to PSD sources. Furthermore, §116.111(a)(2)(C) requires all sources to apply best available control technology. No changes have been made to the SIP revision in response to these comments.

GREENHOUSE GAS (GHG) PERMITTING

The EPA commented that a state's SIP must apply permitting requirements for GHG emissions in order for the EPA to determine if the PSD-related infrastructure elements (as required by §110(a)(2)) are sufficient. Referencing its recently promulgated regulations for GHG permitting under the PSD program, the EPA commented that PSD under the FCAA applies to each newly regulated pollutant, including non-NAAQS pollutants.

Infrastructure SIP demonstrations are required by FCAA, §110(a)(1), specifically requiring each state to submit a plan demonstrating that it satisfies all the required infrastructure elements to ensure that the NAAQS for the six criteria pollutants can be implemented, maintained, and enforced. The EPA has failed to offer any rationale to support that GHG permitting is necessary or required for implementation, maintenance, or enforcement of the SO_2 NAAQS. The commission does not agree with the EPA's comment. Texas is not required to have an approved GHG PSD permitting program in place to satisfy infrastructure requirements for attaining and maintaining the 2010 SO_2 NAAQS. GHG PSD permitting in Texas is currently under EPA control through a federal implementation plan (FIP) that the EPA specifically imposed to ensure that GHG PSD permitting could occur in Texas. Imposition of that FIP satisfies any perceived remaining requirements for the Texas SIP. The Texas infrastructure SIP should be considered complete and approvable.

Texas is currently litigating the EPA's position that implementation of GHG is necessary or required for the implementation, maintenance, or enforcement of the ozone and PM NAAQS. The commission may consider this issue further in the future, based on the outcome of that litigation. No changes to the SIP revision were made in response to these comments.

ADEQUACY OF TEXAS' SO_2 MONITORING NETWORK

The SC commented that Texas' SO_2 monitoring network is not adequate. The SC stated that the proposed SIP revision does not require that the air monitoring network meet requirements of 42 USC, §7410(a)(2)(B) or the EPA's SO_2 monitoring requirements.

Requirements of 42 USC, §7410(a)(2)(B) include that SIPs "provide for establishment and operation of appropriate devices, methods, systems, and procedures necessary to— (i) monitor, compile, and analyze data on ambient air quality, and (ii) upon request, make such data available to the Administrator." The SIP meets these requirements, and the EPA has approved the Texas annual monitoring network review. Monitoring requirements in 40 Code of Federal Regulations (CFR) Part 58 include establishment of the SO_2 monitoring network based on a calculated population weighted emissions index (PWEI). This index is calculated by multiplying the population of a core based statistical area (CBSA) with the emissions data from counties within that CBSA. The calculated value is then divided by one million in order to obtain the index value. PWEIs were calculated for all CBSAs in Texas, and the required SO_2 monitors were included in the SIP revision. No changes were made to the SIP revision in response to these comments.

The SC commented that the SIP does not address the proper placement of the SO_2 air monitors and that the monitoring network lacks SO_2 monitors in a number of counties where there are large sources of SO_2 based on modeling reports and/or SO_2 emissions data.

As stated previously, the EPA does not require source-oriented SO_2 monitoring but rather bases its requirements on the calculated PWEI. The TCEQ SO_2 air monitoring network is operated in compliance with 40 CFR Part 58. Although, as the SC notes, the TCEQ previously identified the potential need for monitoring in several counties, the areas identified in the TCEQ 2010 Five-Year Ambient Air Monitoring Network Assessment were based on a preliminary review of 2008 emissions inventory data and the most recently available population data at the time of the assessment. An in-depth review of the most recently available data performed as part of the TCEQ 2012 Ambient Air Monitoring Network Review determined that additional monitors were not required in these areas and thus were not included in this SIP revision. The EPA noted that TCEQ's current and planned SO_2 monitoring network complies with its requirements in 40 CFR Part 58 in its January 2, 2013 letter approving the 2012 Ambient Air Monitoring Network Review. No changes were made to the SIP revision in response to this comment.

The SC commented that there are "problems apparent with the existing network," mentioning required monitoring for the San Antonio-New Braunfels and Amarillo areas.

The required San Antonio-New Braunfels SO_2 monitor was deployed at the Calaveras Lake air monitoring site (AQS 480290059) on December 17, 2012. In January 2013, EPA approval was obtained on a proposed site for the Amarillo area SO_2 monitor. The new air monitor will be promptly deployed once site details are finalized. No changes were made to the SIP revision in response to this comment.

The SC commented that monitoring data provides useful information and notes that in Nueces County a non-regulatory monitor recorded a preliminary design value of 103 parts per billion (ppb) (year not specified) and that the Beaumont C2/C112 monitor has a 2010 design value of 77 ppb.

Although these comments are not within the scope of this SIP revision, the commission agrees that monitoring data provide useful information. The commission provides verified monitoring data from regulatory monitors within the state to the EPA annually, and certified design values for areas of Texas are determined using only data from regulatory air quality monitors. The 2011 design values for both Nueces and Jefferson Counties are below the NAAQS. No changes were made to the SIP revision in response to these comments.

SPECIFIC SOURCE MODELING

The SC suggested that the TCEQ evaluate and consider adopting the modeling files submitted along with the SC comments. The SC presented modeling purporting to demonstrate that the three electricity generation facilities modeled do cause air impacts that far exceed the 2010 one-hour SO_2 NAAQS. Data set and protocol information was included. The SC conveyed that the modeling protocol employed was consistent with the EPA's March 2011 guidance. The SC stated that the modeling used maximum hourly SO_2 emissions obtained from the EPA's Clean Air Markets database or from the plant's Title V permit. The SC noted that the modeling used meteorological conditions data developed by the TCEQ and that conservative inputs were used favoring lower impact predictions and the results understate the facilities' true SO_2 impacts. The SC summarized the results as showing clear violations of the one-hour SO_2 NAAQS from the three facilities in the counties where they are located, as well as some of the surrounding counties. The SC stressed that these violations exist even without added background SO_2 concentrations from other emission sources in the area.

The SC's tabulated results of the modeling indicate the following.

- The fourth-highest maximum one-hour concentration of SO_2 from Big Brown would be 517.1 micrograms per cubic meter ($\mu g/m^3$), and exceedances of the NAAQS are predicted in only Freestone County.
- The fourth-highest maximum one-hour concentration of SO_2 from Martin Lake would be 463.5 $\mu g/m^3$, and exceedances of the NAAQS are predicted in Rusk, Panola, and Gregg Counties.
- The fourth-highest maximum one-hour concentration of SO_2 from Monticello would be 357.3 $\mu g/m^3$, and exceedances of the NAAQS are predicted in Titus and Camp Counties. *(Note that reported, modeled concentrations were not presented in ppb.)*

The SC calculated emission limits necessary to avoid NAAQS exceedances at the three facilities and noted that because of the conservative nature of the assumptions used in the modeling, the actual limits required to achieve attainment of the 2010 SO_2 NAAQS might be lower than those calculated. The SC stated that the TCEQ must model the facilities using the best available current data and using Automated Surface Observing Systems (ASOS) data processed through AERMINUTE.

Details of the SC modeling results and technical methodology are attached to the SC's comments as Exhibits 1-3.

The SC argued that the TCEQ must utilize the SC modeling for attainment designations and quoted language in the Final Rule: "For initial designations that will be finalized in June 2012, States should use... any refined SO_2 dispersion modeling for sources that may have the potential to cause or contribute to a NAAQS violation, provided that it is recent and available." The SC further claimed that its modeling fits these characteristics and should be used in the designation process. The SC provided the following arguments to show that the EPA can and should use modeling for attainment demonstration purposes.

- The EPA has historically used modeling in determining attainment for the SO_2 standard, and EPA guidance notes that for SO_2 designations, monitoring alone will not be adequate.
- The EPA has a long history of accepting and relying upon modeling for attainment demonstrations stretching back to 1978.
- In the final rule, the EPA states that for the one-hour standard "it is more appropriate and efficient to principally use modeling to assess compliance for medium to larger sources . . ."
- The EPA's use of modeling has been upheld by the courts citing three cases.
- The EPA uses modeling because the EPA is well aware that modeling produces reliable results. The SC references two statements by EPA employees, one that ambient measurements "should not be used as the sole basis for setting emission limitations or determining ambient concentrations resulting from emissions from an industrial source", and the other stating that model evaluations "demonstrate the overall good performance of AERMOD."
- The EPA's practice in a number of other contexts also demonstrates that modeling is a technically superior approach for ascertaining impacts on NAAQS; for example, all nitrogen dioxide (NO_2), $PM_{2.5}$, and SO_2 NAAQS and PSD increment compliance verification analyses are performed with air dispersion modeling. The SC notes that AERMOD accurately models medium-to-large SO_2 sources even with conditions of low wind speed, use of off-site meteorological data, and variable weather conditions.

These comments are beyond the scope of this SIP revision. The purpose of this SIP revision is to meet the infrastructure and transport requirements of FCAA, §110(a)(2) for the 2010 SO_2 NAAQS. The infrastructure demonstration explains how existing Texas statutes and rules will allow the state to meet its obligations under the FCAA. This SIP revision is not an attainment demonstration but a demonstration that basic program elements have been addressed for the 2010 SO_2 NAAQS. This SIP revision demonstrates that Texas has the appropriate statutory and regulatory authority to develop necessary rules and control measures so that areas within the state can attain and maintain the standard.

Attainment demonstration SIP revisions would be required for any Texas areas that are designated as nonattainment for the 2010 SO_2 NAAQS. Those SIP revisions would be developed with appropriate stakeholder input, and would undergo separate notice and comment rulemaking procedures. At that time, the TCEQ would develop appropriate rules and control measures to allow any areas currently not meeting the 2010 SO_2 NAAQS to come into attainment by the appropriate attainment deadlines.

Current monitoring data show that the general areas in which the three sources indicated by the SC are measuring SO_2 levels well below the 2010 SO_2 NAAQS. The

current permits for these sources, as for all sources of air pollution within Texas, require such sources to meet all applicable state and federal rules and regulations, including the 2010 SO_2 NAAQS.

The March 2011 guidance is not binding. Further, the EPA has changed course from that guidance. In addition, the 1990 FCAA amendments removed language about the use of modeling for attainment designations and as such several of the SC's arguments may no longer be reflective of current practices. No changes were made to the SIP revision in response to these comments.

ENFORCEABLE EMISSIONS LIMITS

The SC commented that TCEQ fails to include adequate enforceable emission limits to implement, maintain, and enforce the 2010 SO2 NAAQS. The SC also commented that only an emission limit with a one-hour averaging time can assure compliance with a standard that has a one-hour averaging time. The SC stated that the infrastructure SIP must contain adequate enforceable one-hour SO_2 emission limits for Big Brown, Monticello, and Martin Lake in order to implement, maintain, and enforce the NAAQS. The SC submitted modeling reports and supporting data showing modeled concentrations above the NAAQS to support its argument to apply pollution limits to these three power plants, asserting that these three specific sources all cause violations of the 2010 SO_2 NAAQS and that the existing SIP limits do not prevent the violations.

These comments are beyond the scope of this SIP revision. The purpose of this SIP revision for infrastructure for the 2010 SO_2 NAAQS is to meet the infrastructure and transport requirements of FCAA, §110(a)(2). The infrastructure demonstration explains how existing Texas statutes and rules will allow the state to meet its obligations under the FCAA. This SIP revision is not an attainment demonstration but a demonstration that basic program elements have been addressed for the 2010 SO_2 NAAQS. The SIP revision demonstrates that Texas has the appropriate statutory and regulatory authority to develop necessary rules and control measures so that all areas of the state can attain and maintain the standard. Texas submitted the required arguments, and anything beyond such exceeds the scope of infrastructure and transport SIP requirements.

Attainment demonstration SIP revisions would be developed for any Texas areas that are designated as nonattainment for the 2010 SO_2 NAAQS. Those SIP revisions would be developed with appropriate stakeholder input and would undergo separate notice and comment rulemaking procedures. At that time, the commission would develop appropriate rules and control measures to allow any areas currently not meeting the 2010 SO_2 NAAQS to come into attainment by the appropriate attainment deadlines.

Current monitoring data show that the general areas in which the three sources indicated by the SC are measuring SO_2 concentrations well below the 2010 SO_2 NAAQS. The current permits for these sources, as for all sources of air pollution within Texas, require such sources to meet all applicable state and federal rules and regulations, including current applicable NAAQS. No changes were made to the SIP revision in response to these comments.

INTERSTATE TRANSPORT

The EPA commented that §110(a)(2)(D)(ii) of the FCAA requires compliance with §115 and §126 of the FCAA, relating to interstate and international pollution abatement. Section 115 of the FCAA addresses endangerment of public health or welfare in foreign countries from pollution emitted in the United States (U.S.) Section 126(a) of the FCAA requires new or modified sources to notify neighboring states of potential impacts from such sources. Section 126(b) of the FCAA affects a state only if the EPA has been petitioned to make a finding of violation that is related to either interstate transport or international transport of emissions from sources in the state. The EPA requested further discussion of how Texas complies with both §115(c) and §126 of the FCAA.

Pursuant to FCAA, §115(a), the EPA has not made the commission aware of any reports, surveys, or studies submitted by any duly constituted international agency that indicate or reasonably anticipate endangerment to public welfare or health in Mexico from air pollution emitted in Texas. Based on information available to the commission, the U.S. Secretary of State has not requested any formal notification to Texas from the EPA pursuant to §115(a) regarding emissions originating in the state endangering public health or welfare in Mexico. In the absence of such a finding and notification, Texas has no obligations to address the endangerment of public health or welfare in Mexico under §115. Should Texas receive such a finding from the EPA in the future, one remedy would be a SIP revision to correct the endangerment, as specified in §115(b). As discussed in the infrastructure SIP, Texas has the proper authority and procedures in place to make revisions to its SIP when necessary.

Regarding compliance with FCAA, §126, the Texas SIP requires that each proposed new or modified major source notify neighboring states of potential impacts from the source (see 67 FR 58697). The state has no pending obligations under §126 of the FCAA. The EPA has previously approved Texas' infrastructure SIP for 1997 ozone and $PM_{2.5}$ and 2006 $PM_{2.5}$ in for §110(a)(2)(D)(ii), except as regarding GHG (see 76 FR 81371). The EPA's rationale for this approval can be found in the September 22, 2011 EPA Technical Support Document on the 1997 ozone and $PM_{2.5}$ and 2006 $PM_{2.5}$ infrastructure and transport SIP, Docket ID EPA-R06-OAR-2008-0638, page 16. Quoting EPA analysis:

> **Section 126 of the Act addresses interstate pollution abatement and section 126(a) requires that each applicable implementation plan shall require each major proposed new or modified source to notify neighboring states of potential impacts from the source. The Texas SIP addresses section 126 of the Act under their PSD rules at 30 TAC 116, Division 3 (Public Notice). Specifically, 30 TAC 116.131 provides that public notice be provided "[...] for any permit subject to the FCAA, Title I, Part C or D, or to Title 40 Code of Federal Regulations (CFR), Part 51.165(b)." Furthermore, the rules at 30 TAC 116.134 provide that "[...] the permit applicant shall furnish a copy of such notices and date of publication to [...] the air pollution control agency of any nearby state in which air quality may be adversely affected by the emissions from the new or modified facility." These rules were adopted into the Texas SIP on September 18, 2002 (67 FR 58709) and address section 126(a)(1)(A) and (B) of the Act. Section 126(b) of the**

Act provides that any state or political subdivision may petition the Administrator for a finding that any major source or group of stationary sources emits or would emit any air pollutant in violation of the prohibition of section 110(a)(2)(D)(ii) of this title or this section. Within 60 days after receipt of any petition under this subsection and after public hearing, the Administrator shall make such a finding or deny the petition. We have not been made aware of any such pending actions pursuant to CAA section 126(b), thus we are proposing that the Texas SIP meets this portion of section 110(a)(2)(D)(ii).

The commission agrees that Texas satisfies FCAA, §110(a)(2)(D)(ii) requirements. The commission disagrees with the EPA's previous disapproval regarding Texas' compliance with this section for GHG. The EPA has failed to offer a rational explanation for requiring GHG PSD permitting to attain or maintain NAAQS, including ozone or $PM_{2.5}$. As noted, Texas is currently litigating the EPA's final partial disapproval regarding a GHG permitting infrastructure requirement. No changes were made to the SIP revision in response to these comments.

The EPA noted that on page xiii of the proposal addressing §110(a)(2)(D) of the FCAA, the TCEQ cross-references its discussion on §110(a)(2)(C) and relevant rules for meeting federal requirements. The EPA acknowledged that the TCEQ identifies 3o TAC Chapter 101, General Air Quality Rules and 30 TAC Chapter 122, Subchapter E, Division 2, Clean Air Interstate Rule as the only relevant rules for meeting the requirements of §110(a)(2)(D)(i). The EPA requested a more comprehensive listing of relevant rules in 30 TAC that address the federal requirements in §110(a)(2)(D)(i)(II).

As discussed elsewhere in this SIP revision, the commission has the statutory and regulatory authority to implement and enforce the NAAQS. The commission confirms that Chapter 101, General Air Quality Rules and Chapter 122, Subchapter E, Division 2, Clean Air Interstate Rule are the relevant rules for meeting the infrastructure and transport requirements of FCAA, §110(a)(2)(D)(i) including §110(a)(2)(D)(i)(II) for 2006 $PM_{2.5}$. FCAA, §110(a)(2)(D)(i)(II) requires that the SIP contain adequate provisions prohibiting any source or type of emissions activity within the state from emitting air pollutants in amounts that will interfere with another state's SIP measures for preventing significant deterioration of air quality or to protect visibility. Texas also has SIP-approved rules for PSD, as required by the FCAA.[1] These rules are found in Chapter 116.

In addition to the general air quality rules in Chapter 101 and the Clean Air Interstate Rule in Chapter 122, Texas submitted a Regional Haze SIP revision to the EPA on March 19, 2009. Regional haze program requirements include progress reports due to the EPA in 2014 and every five years thereafter, to demonstrate progress toward the visibility goal. Another regional haze SIP

[1] The EPA has promulgated regulations for the permitting of greenhouse gases under the PSD program. Although Texas has not amended or proposed amendments to its permitting program to include greenhouse gases, Texas is meeting its obligations under the FCAA to provide for permitting of facilities that emit criteria pollutants. Greenhouse gases are not criteria pollutants, with a NAAQS that must be met, and therefore a lack of permitting requirements in Texas rules for greenhouse gas emissions does not constitute a lack in the required infrastructure elements of §110(a)(2).

revision is due in 2018 and every 10 years thereafter, through 2064. Furthermore, the EPA has already approved Texas' infrastructure and transport SIP for §110(a)(2)(D)(i)(II) for the 1997 eight-hour ozone and $PM_{2.5}$ NAAQS, and the 2006 $PM_{2.5}$ NAAQS, except as regards GHG PSD permitting requirements (*see* 76 *Federal Register* 58748, at 58755 (September 22, 2011)). No changes were made to the SIP revision in response to these comments.

The SC commented that the Texas good neighbor analysis in this SIP revision is arbitrary and incomplete. It stated that the analysis did not consider the impact of Texas pollution on monitors in maintenance areas or monitors with incomplete data. The SC suggested analysis should also be done on monitors that will be placed by January 2013 and that modeling should be included for major sources of SO_2 in Texas. The comment labels as flawed logic Texas' determination that it does not contribute to non-compliance in other states based on monitors between the Texas border and violating monitors not showing violations.

The commission disagrees with these comments and stands behind the transport analysis showing that Texas does not contribute to nonattainment or to another state's inability to maintain attainment of the 2010 SO_2 NAAQS. No changes were made to the SIP revision in response to these comments.

The EPA noted that on August 21, 2012, the U.S. Court of Appeals for the District of Columbia (D.C.) Circuit issued a decision to vacate the Cross-State Air Pollution Rule (CSAPR). The EPA also noted that on October 5, 2012, the EPA and others filed petitions for rehearing of that decision and stated that the court had not yet granted or denied those petitions. At the time of the EPA's submittal of comments on the proposed version of this SIP revision, the court had not ruled on the petitions, as mentioned by the EPA. However, on January 24, 2013, the federal appeals court denied the requests to reconsider its decision vacating CSAPR. The Clean Air Interstate Rule (CAIR) remains in place until a valid replacement rule is developed and implementation plans complying with any new rule are submitted by the states and acted upon by the EPA. Although significant uncertainty remains regarding future efforts to address interstate air pollution, the EPA has indicated that until a valid replacement rule is established, states may rely on reductions achieved by CAIR as "permanent and enforceable" for SIP purposes.

Referencing a memo dated November 19, 2012 from Gina McCarthy, Assistant Administrator for the EPA's Office of Air and Radiation, the EPA also commented that although this proposal may address §110(a)(2)(D)(i)(I) requirements, the agency does not intend to make findings that states failed to submit SIPs to comply with §110(a)(2)(D)(i)(I) at this time.

The commission agrees that findings of failure to submit SIP revisions should not be made until the litigation issues have been resolved and states have been given clear direction on their transport obligations. Until direction is clear from the D.C. Circuit, the commission will continue to address §110(a)(2)(D)(i)(I) requirements for Texas as best it can. No changes were made to the SIP revision in response to these comments.