



# ***Update on the Texas State Implementation Plan (SIP) and Federal Air Quality Standards***

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2016 Environmental Trade Fair



# Today's Topics

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- National Ambient Air Quality Standards (NAAQS)
- Design Values
- 2015 Revisions to the Ozone NAAQS
- Status of Texas Air Quality Planning Activities



# National Ambient Air Quality Standards



# National Ambient Air Quality Standards

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- Required by the Federal Clean Air Act
- The United States Environmental Protection Agency (EPA) sets these health-based standards for clean air, called National Ambient Air Quality Standards (NAAQS), for six criteria air pollutants:
  - Ground-Level Ozone ( $O_3$ );
  - Particulate Matter (PM);
  - Nitrogen Dioxide ( $NO_2$ );
  - Sulfur Dioxide ( $SO_2$ );
  - Carbon Monoxide (CO); and
  - Lead (Pb).



# National Ambient Air Quality Standards

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- The EPA is required to review the NAAQS every five years. For more information on the review process, go to the [EPA's NAAQS review Web page](https://www.epa.gov/criteria-air-pollutants/process-reviewing-national-ambient-air-quality-standards).  
*(<https://www.epa.gov/criteria-air-pollutants/process-reviewing-national-ambient-air-quality-standards>)*
- States with areas failing to meet the NAAQS (nonattainment) are required to develop and submit to the EPA state implementation plan (SIP) revisions.



# Current NAAQS

Pollutant	Level	Averaging Time
Ozone (O <sub>3</sub> )	0.070 ppm*	Eight-Hour
Particulate Matter (PM <sub>2.5</sub> )	12.0 µg/m <sup>3</sup>	Annual (Arithmetic Mean)
	35 µg/m <sup>3</sup>	Twenty-Four-Hour
Particulate Matter (PM <sub>10</sub> )	150 µg/m <sup>3</sup>	Twenty-Four-Hour
Nitrogen Dioxide (NO <sub>2</sub> )	53 ppb	Annual (Arithmetic Mean)
	100 ppb	One-Hour
Sulfur Dioxide (SO <sub>2</sub> )	75 ppb	One-Hour
Carbon Monoxide (CO)	9 ppm	Eight-Hour
	35 ppm	One-Hour
Lead (Pb)	0.15 µg/m <sup>3</sup>	Rolling Three-Month Average

Note: Secondary NAAQS are the same as the primary NAAQS for all pollutants EXCEPT SO<sub>2</sub>, which has a secondary NAAQS of 0.5 ppm over three hours, and PM<sub>2.5</sub>, which has a secondary NAAQS of 15.0 µg/m<sup>3</sup> annually. More information can be found at [EPA's NAAQS webpage](https://www3.epa.gov/ttn/naaqs/criteria.html) (<https://www3.epa.gov/ttn/naaqs/criteria.html>)

\* In 1997 EPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) and in 2015 the EPA revoked the 1997 eight-hour ozone NAAQS (0.08 ppm); however, some areas have continued obligations under those standards (“anti-backsliding”). The 2008 eight-hour ozone NAAQS of 0.075 ppm also remain in effect for some areas.



# NAAQS Review Schedule

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Criteria Pollutant	Proposed Rule	Final Rule
Lead (Pb)	December 2014	TBD
Ozone (O <sub>3</sub> )	December 2014	October 2015
Nitrogen Dioxide (NO <sub>2</sub> )	November 2016	August 2017
Carbon Monoxide (CO)	Summer 2017	Spring 2018
Sulfur Dioxide (SO <sub>2</sub> )	October 2018	July 2019
Nitrogen Oxides (NO <sub>x</sub> ) and Sulfur Oxides (SO <sub>x</sub> ) Secondary Standard	May 2019	April 2020
Particulate Matter (PM)	TBD	TBD



# Design Values



# Data Completeness

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- Most design value calculations require a data completeness check
- Data completeness checks vary by NAAQS, but in general:
  - A design value must have at least 75% complete data for the year;
  - A design value that exceeds the NAAQS but has incomplete data is still considered valid; and
  - Additional tests can be used to validate a design value with incomplete data.
- See the [Federal Register](https://www3.epa.gov/ttn/naaqs/) for an individual criteria pollutant for more information (<https://www3.epa.gov/ttn/naaqs/>)



# 2015\* Fine Particulate Matter (PM<sub>2.5</sub>) Design Values

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- Calculating PM<sub>2.5</sub> Design Values
  - Annual: Three-year average of the weighted annual mean PM<sub>2.5</sub>
    - Weighted annual mean is the mean of the four quarterly means.
  - 24-Hour: Three-year average of the 98<sup>th</sup> percentile 24-hour PM<sub>2.5</sub> concentration
- PM<sub>2.5</sub> Design Values in Texas
  - Annual:
    - All counties in Texas currently meet the annual PM<sub>2.5</sub> NAAQS of 12.0 micrograms per cubic meter (µg/m<sup>3</sup>)
  - 24-Hour:
    - All counties in Texas currently meet the 24-hour PM<sub>2.5</sub> NAAQS of 35 µg/m<sup>3</sup>

\*2015 design values are calculated as of 4/1/2016, are not certified and are subject to change.



# 2015\* Coarse Particulate Matter (PM<sub>10</sub>) Design Values

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- Calculating 24-Hour PM<sub>10</sub> Design Values
  - Find the number of expected exceedances per quarter (the number of days in the quarter, divided by the number of days with data, multiplied by the number of exceedances)
  - Add up the expected exceedances for the year
  - Average the expected exceedances over three years
- 24-Hour PM<sub>10</sub> Design Values in Texas
  - All counties in Texas meet the PM<sub>10</sub> 24-Hour NAAQS of 1.0 expected exceedances.

\*2015 design values are calculated as of 4/1/2016, are not certified and are subject to change.



# 2015\* Nitrogen Dioxide Design Values

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- Calculating Nitrogen Dioxide Design Values
  - Annual: Annual average of all one-hour NO<sub>2</sub> concentrations
  - One-Hour: Three-year average of the 98<sup>th</sup> percentile of the daily maximum one-hour NO<sub>2</sub> concentration
- Nitrogen Dioxide Design Values in Texas
  - Annual:
    - All counties in Texas currently meet the annual NO<sub>2</sub> NAAQS of 53 ppb.
  - One-Hour:
    - All counties in Texas currently meet the one-hour NO<sub>2</sub> NAAQS of 100 ppb.

\*2015 design values are calculated as of 4/1/2016, are not certified and are subject to change.



# 2015\* Sulfur Dioxide Design Values

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- Calculating Sulfur Dioxide Design Values
  - Three-year average of the 99<sup>th</sup> percentile of the daily maximum one-hour SO<sub>2</sub> concentration
- Sulfur Dioxide Design Values in Texas
  - All counties in Texas currently meet 2010 one-hour SO<sub>2</sub> NAAQS of 75 ppb.

\*2015 design values are calculated as of 4/1/2016, are not certified and are subject to change.



# 2015\* Carbon Monoxide Design Values

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- Calculating Carbon Monoxide Design Values
  - One-Hour: Highest annual second-maximum one-hour CO concentration
  - Eight-Hour: Highest annual second-maximum non-overlapping eight-hour CO concentration
- Carbon Monoxide Design Values in Texas
  - One-Hour: All counties in Texas currently meet the one-hour CO NAAQS of 35 ppm.
  - Eight-Hour: All counties in Texas currently meet the eight-hour CO NAAQS of 9 ppm.

\*2015 design values are calculated as of 4/1/2016, are not certified and are subject to change.



# 2015\* Lead Design Values

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- Calculating Lead Design Values
  - Maximum rolling three-month average over a three-year period
- Lead Design Values in Texas
  - All counties in Texas currently meet the lead NAAQS of 0.15  $\mu\text{g}/\text{m}^3$ .

\*2015 design values are calculated as of 4/1/2016, are not certified and are subject to change.



# 2015 Revisions to the Ozone NAAQS



# 2015 Revisions to the Ozone NAAQS

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- On October 1, 2015, the EPA revised the primary and secondary NAAQS for eight-hour ozone.
- **Primary NAAQS** protect public health
  - 2008 NAAQS: 0.075 ppm
  - **Revised NAAQS: 0.070 ppm**
- **Secondary NAAQS** protect public welfare (trees, plants, ecosystems, etc.)
  - 2008 NAAQS: 0.075 ppm
  - **Revised NAAQS: 0.070 ppm**
  - Form is identical to the primary NAAQS but the target level is based on the W126 index.



# Ozone NAAQS Revisions Timeline

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- Proposal – November 25, 2014
- Final Rule – October 1, 2015
- State Nonattainment Area Recommendations due to the EPA - October 1, 2016
- EPA Response to State Recommendations – June 1, 2017
- EPA Final Nonattainment Area Designations – October 1, 2017
- Implementation Plans – 2020 to 2021
- Attainment of NAAQS – 2020 to 2037



# Calculating Eight-Hour Ozone Design Values

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- Find the fourth highest eight-hour daily peak at each monitor
- Average those fourth highest values from the most recent three years. This is the design value for your monitor. Do this for each monitor.
- The design value for a county or Metropolitan Statistical Area (MSA) is the maximum design value from all of the monitors located within that county or MSA.



# Calculating Eight-Hour Ozone Design Values: An Example

1. Monitor A has three years of complete data

	2011	2012	2013
Maximum Peak Eight-Hour Ozone	87	85	86
2 <sup>nd</sup> Highest Peak Eight-Hour Ozone	85	83	80
3 <sup>rd</sup> Highest Peak Eight Hour Ozone	70	78	75
4 <sup>th</sup> Highest Peak Eight-Hour Ozone	69	73	72

Note: All units in parts per billion (ppb)

2. Take the 4th highest peak-hour ozone from each year and find the average

$$\frac{69 + 73 + 72}{3} = 71.334$$

3. Truncate the average so there are no decimal places and you have the design value

$$71.334 = 71 \text{ ppb}$$



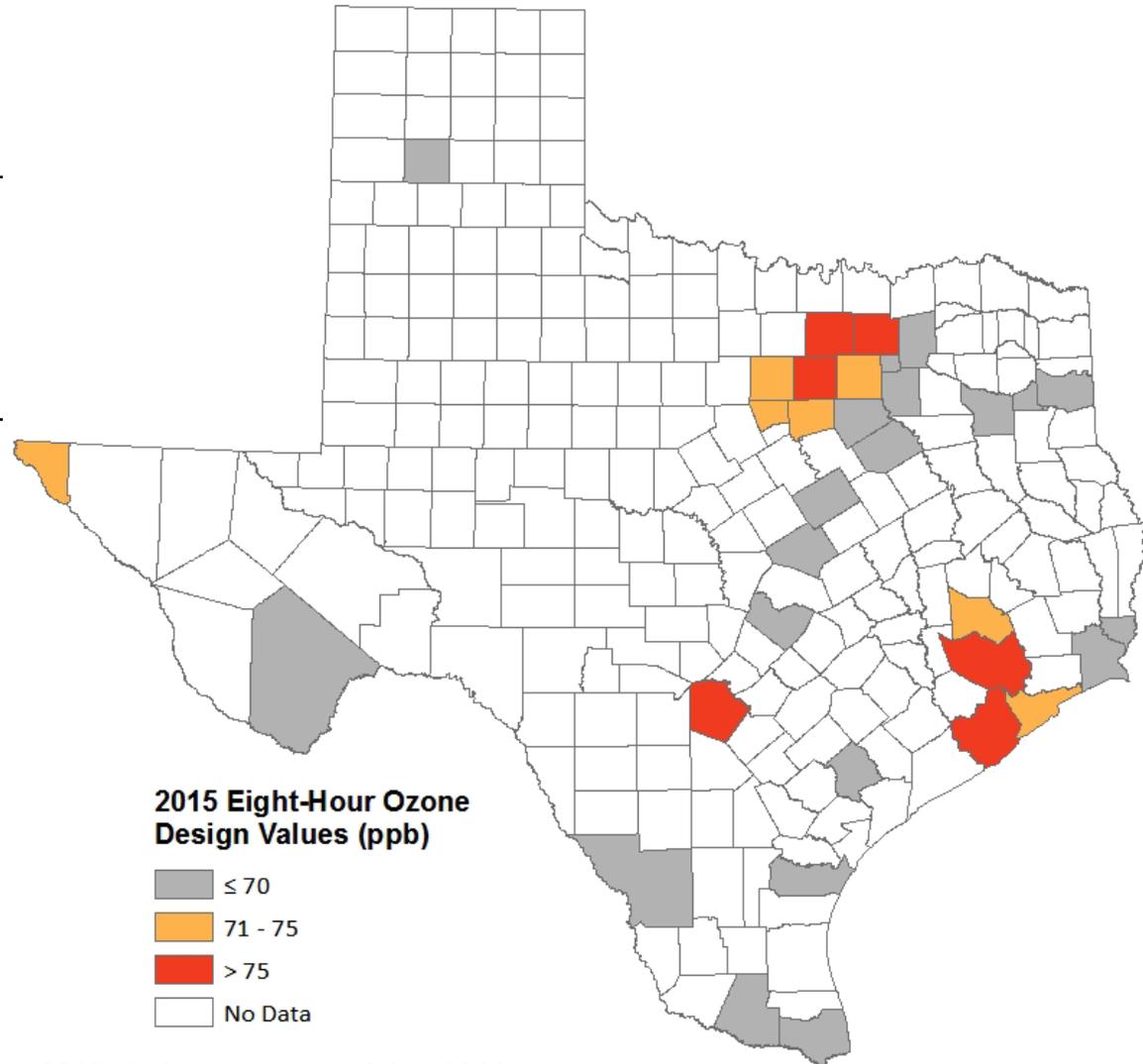
# Comparing Design Values to the NAAQS

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- Design values must be greater than the NAAQS for an area to exceed.
- For the 2008 NAAQS set at 75 ppb (0.075 ppm):
  - 75.99999 ppb -> 75 ppb -> **MEETS NAAQS**
  - 76.00001 ppb -> 76 ppb -> **EXCEEDS NAAQS**
- For the revised NAAQS of 70 ppb (0.070 ppm):
  - 70.99999 ppb -> 70 ppb -> **MEETS NAAQS**
  - 71.00001 ppb -> 71 ppb -> **EXCEEDS NAAQS**

# 2015 Ozone Design Values by County

CSA/CBSA	County	2015 8Hr Ozone DV (ppb)
Dallas-Fort Worth	Denton	83
Houston-The Woodlands	Brazoria	80
Dallas-Fort Worth	Tarrant	80
Houston-The Woodlands	Harris	79
San Antonio-New Braunfels	Bexar	78
Dallas-Fort Worth	Collin	76
Dallas-Fort Worth	Dallas	75
Dallas-Fort Worth	Parker	75
Houston-The Woodlands	Galveston	73
Dallas-Fort Worth	Hood	73
Dallas-Fort Worth	Johnson	73
Houston-The Woodlands	Montgomery	73
El Paso-Las Cruces	El Paso	71
Dallas-Fort Worth	Rockwall	70
Killeen-Temple	Bell	69
Dallas-Fort Worth	Ellis	68
Longview-Marshall	Gregg	68
Beaumont-Port Arthur	Jefferson	68
Austin-Round Rock	Travis	68
Dallas-Fort Worth	Kaufman	67
Waco	McLennan	67
Tyler-Jacksonville	Tyler	67
Longview-Marshall	Harrison	66
Dallas-Fort Worth	Navarro	66
Beaumont-Port Arthur	Orange	66
Amarillo-Borger	Randall	66
Corpus Christi-Kingsville-Alice	Nueces	65
Brewster County	Brewster	64
Dallas-Fort Worth	Hunt	64
Victoria-Port Lavaca	Victoria	64
Brownsville-Harlingen-Raymondville	Cameron	59
Laredo	Webb	59
McAllen-Edinburg	Hidalgo	56



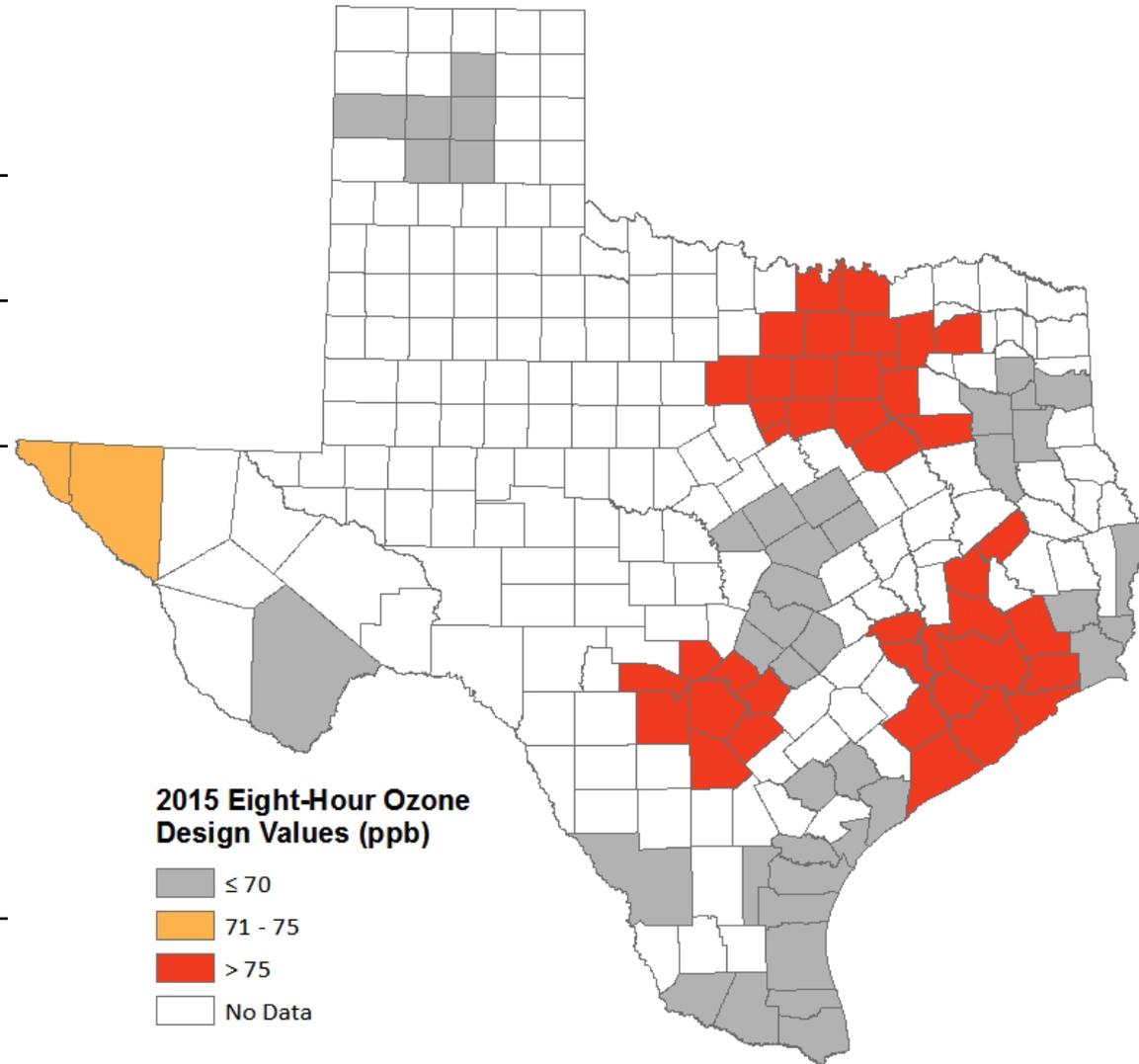
\*2015 design values as of 4/1/2016.

\*\*The Brewster County, Randall County, and Polk County monitors are part of the Clean Air Status and Trends Network (CASTNET) of monitors and report data directly to the EPA. Polk County does not have a valid design value for 2015.



# 2015 Ozone Design Values by CSA

CSA/CBSA	2015 8Hr Ozone DV (ppb)
Dallas-Fort Worth	83
Houston-The Woodlands	80
San Antonio-New Braunfels	78
El Paso-Las Cruces	71
Killeen-Temple	69
Austin-Round Rock	68
Beaumont-Port Arthur	68
Longview-Marshall	68
Tyler-Jacksonville	67
Waco	67
Amarillo-Borger	66
Corpus Christi-Kingsville-Alice	65
Brewster County	64
Victoria-Port Lavaca	64
Brownsville-Harlingen-Raymondville	59
Laredo	59
McAllen-Edinburg	56



\*2015 design values are calculated as of 4/1/2016.

\*\*The Brewster County, Randall County, and Polk County monitors are part of the Clean Air Status and Trends Network (CASTNET) of monitors and report data directly to the EPA.



# Summary of the 2015 Revisions to the Ozone NAAQS

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In 2015:

- Six Texas counties in three combined statistical areas (CSAs) are monitoring above the 2008 ozone NAAQS of 75 ppb.
- Seven additional Texas counties and one additional CSA (13 counties and four CSA's) are monitoring above the 2015 ozone NAAQS set at 70 ppb.



# Status of Texas Air Quality Planning Efforts





# Status of Texas Air Quality Planning Efforts

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- Criteria Pollutants
  - Ozone (O<sub>3</sub>)
  - Sulfur dioxide (SO<sub>2</sub>)
  - Lead (Pb)
  - Carbon monoxide (CO)
  - Nitrogen dioxide (NO<sub>2</sub>)
  - Particulate matter (PM)
- Other Statewide Air Issues
  - Interstate Transport Rule
  - Regional Haze



# Ozone





# 2008 Eight-Hour Ozone Standard

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- Standard is 0.075 ppm
  - Design values of 75 ppb or less are attainment
- EPA finalized designations May 21, 2012
  - July 20\* established as the attainment date of each relevant calendar year
- HGB Area
  - Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties
- DFW Area
  - Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise Counties



# HGB Area

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- Classified as a marginal nonattainment area for the 2008 ozone standard
  - Attainment deadline July 20, 2015
  - EPA proposed approval of a one-year extension to July 20, 2016.
- Anticipated that the EPA will reclassify the area to moderate in late 2016 or early 2017
  - July 20, 2018 attainment deadline
  - Area would have to attain by end of 2017
- Attainment Demonstration and Reasonable Further Progress SIP revisions due approximately one year after effective date of reclassification



# DFW Area

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- Classified as a moderate nonattainment area for the 2008 standard
  - Wise County added to nonattainment area
  - Attainment deadline July 20, 2018
- Attainment Demonstration was proposed on December 9, 2015
  - Scheduled for adoption on July 6, 2016
  - Due to legal challenge, the TCEQ developed this attainment demonstration SIP revision to reflect the 2017 attainment year.



# Redesignation Substitute for Revoked Standards

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- EPA's SIP Requirements Rule provides the redesignation substitute to remove anti-backsliding measures for revoked NAAQS.
- Redesignation Substitute elements
  - Monitoring data showing attainment of the revoked NAAQS
  - Showing that attainment was due to permanent and enforceable emissions reductions
  - Demonstration that the area can maintain the standard for 10 years after approval



# HGB and DFW Redesignation Substitutes

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- HGB
  - One-Hour Ozone Standard
    - Approved by EPA on October 20, 2015
  - 1997 Eight-Hour Ozone Standard
    - Scheduled for adoption on April 27, 2016
- DFW
  - One-Hour and 1997 Eight-Hour Ozone Standards
    - Scheduled for adoption on April 27, 2016



# Additional Ozone Air Quality Areas

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- Designated attainment/unclassifiable for the 2008 ozone standard
  - Austin
  - Brewster County (Big Bend)
  - Corpus Christi
  - Hood County
  - Lower Rio Grande Valley
  - McLennan County (Waco)
  - Northeast Texas
  - San Antonio



# Ozone Advance

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- Encourages expeditious emission reductions in ozone attainment areas to help areas continue to meet the NAAQS
- Areas in Texas currently pursuing Ozone Advance include:
  - Austin, Corpus Christi, Hood County, San Antonio, Tyler-Longview, and Waco.



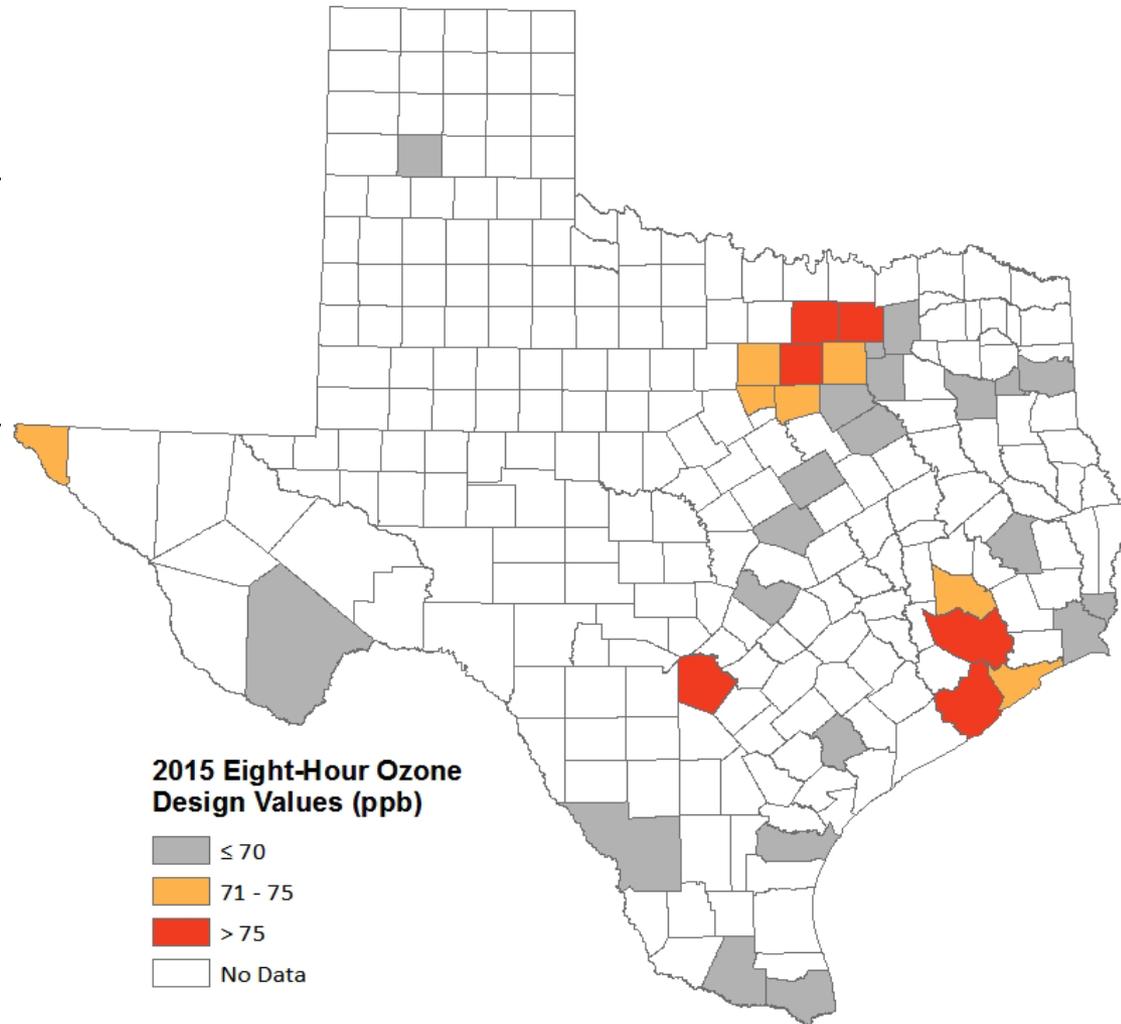
# 2015 Eight-Hour Ozone NAAQS

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- On October 1, 2015, the EPA lowered the NAAQS for ground-level ozone to 70 ppb.
- Based on preliminary air monitoring data for 2015, the Dallas-Fort Worth and Houston-Galveston areas, and Bexar and El Paso Counties are measuring levels above the new ozone standard.
  - State recommendations expected to be based on the 2015 Design Value
  - Final EPA designation expected to be based on the 2016 Design Value

# 2015 Ozone Design Values by County

CSA/CBSA	County	2015 8Hr Ozone DV (ppb)
Dallas—Fort Worth	Denton	83
Dallas—Fort Worth	Tarrant	80
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Houston—The Woodlands	Harris	79
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Dallas—Fort Worth	Dallas	75
Dallas—Fort Worth	Parker	75
Dallas—Fort Worth	Hood	73
Houston—The Woodlands	Montgomery	73
Dallas—Fort Worth	Johnson	73
Houston—The Woodlands	Galveston	73
El Paso—Las Cruces	El Paso	71
Dallas—Fort Worth	Rockwall	70
Killeen-Temple	Bell	69
Austin—Round Rock	Travis	68
Beaumont—Port Arthur	Jefferson	68
Dallas—Fort Worth	Ellis	68
Longview-Marshall	Gregg	68
Dallas—Fort Worth	Kaufman	67
Tyler-Jacksonville	Smith	67
Waco	McLennan	67
Amarillo-Borger	Randall	66
Beaumont—Port Arthur	Orange	66
Longview-Marshall	Harrison	66
Dallas—Fort Worth	Navarro	66
Corpus Christi—Kingsville—Alice	Nueces	65
Dallas—Fort Worth	Hunt	64
No CSA	Brewster	64
No CSA	Polk	64
Victoria—Port Lavaca	Victoria	64
Laredo	Webb	59
Brownsville-Harlingen	Cameron	59
McAllen-Edinburg	Hidalgo	56



\*2015 design values are calculated as of 12/1/2015 and subject to change

\*\*The Brewster County, Randall County, and Polk County monitors are part of the Clean Air Status and Trends Network (CASTNET) of monitors and report data directly to the EPA.



# Potential Classification Ranges

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## Example Classification Thresholds

Based on Percent-Above-Standard Approach

0.070 parts per million (ppm)

Marginal	0.071 up to 0.081 ppm
Moderate	0.081 up to 0.093 ppm
Serious	0.093 up to 0.105 ppm
Severe – 15	0.105 up to 0.111 ppm
Severe – 17	0.111 up to 0.163 ppm
Extreme	0.163 ppm or more



# Estimated Impacts of 2016 4<sup>th</sup> High Values on Classification

CBSA	Prelim 4 <sup>th</sup> High in 2015 (ppb)	4 <sup>th</sup> High in 2016 for Potential Marginal (ppb)
Austin	73	77-106
BPA	74	72-101
Corpus	65	82-112
DFW	88	48-77
El Paso	72	71-100
HGB	86	50-79
Killeen-Temple	67	74-103
San Antonio	80	61-90
Tyler-Longview	68	79-109
Victoria	70	81-111
Waco	68	82-112



# Potential Attainment Deadlines

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Based on Section 181(a)(1) of the Federal Clean Air Act:

Marginal	2020
Moderate	2023
Serious	2026
Severe	2032 or 2034
Extreme	2037

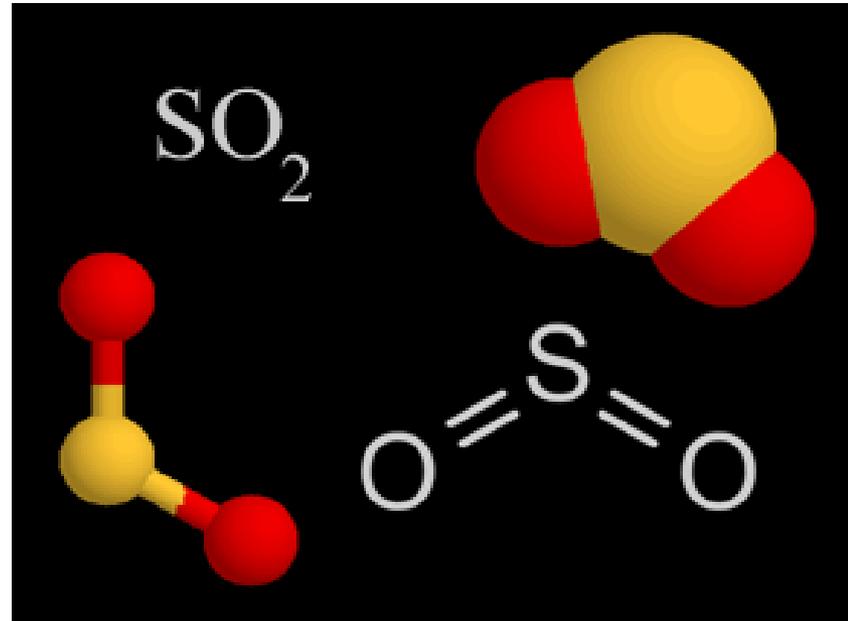




# Timeline

October 2015	New Primary Ozone Standard: 70 parts per billion (ppb) Secondary standard same as primary
October 2016	State designation recommendations due to the EPA
June 2017	EPA sends letter to states with proposed nonattainment area designations
October 2017	EPA to sign (finalize) designations and classifications EPA to finalize implementation rule
October 2019	<b>Emissions inventory due for all nonattainment areas</b>
October 2020-2021	State Implementation Plans (SIP) due

# Sulfur Dioxide





# SO<sub>2</sub> NAAQS Revision

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- Revised June 2010
- One-hour primary standard of 75 ppb
  - 99<sup>th</sup> percentile over three years
- Three-hour secondary standard of 500 ppb
  - Not to be exceeded more than once/year
- Texas did not have any areas designated as nonattainment when initial designations were made in 2013.
- EPA only designated those areas that had monitored values over the standard.



# Sierra Club vs. EPA Consent Decree

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- In March 2015, the EPA entered into a consent decree with environmental litigants requiring the following actions.
  - Proposed designations within 16 months (July 2, 2016) for undesignated areas that:
    - have monitored violations of the standard; or
    - contain sources that emitted greater than:
      - 16,000 tons in 2012; or
      - 2,600 tons and had an emission rate of 0.45 lbs./mmbtu or higher in 2012.
  - Final designations are due by December 31, 2017 for areas failing to meet the January 1, 2017 monitoring deadline.
  - Final designations for all undesignated areas are due by December 31, 2020.



# Texas Consent Decree Submittal

12 Texas sources identified by the EPA as having emissions over 16,000 tons or at least 2,000 tons/yr and an emission rate of 0.45 lb SO<sub>2</sub>/mmbtu or higher.

County	Facility	County	Facility
Atascosa	San Miguel Electric Plant	McLennan	Sandy Creek Energy Station
Fort Bend	WA Parish Electric Generating Station	Milam	Sandow Steam Electric Station
Freestone	Big Brown Steam Electric Station	Potter	Harrington Station Power Plant
Goliad	Coletto Creek Power Station	Robertson	Twin Oaks
Lamb	Tolk Station	Rusk	Martin Lake Electrical Station
Limestone	Limestone Electric Generation Station	Titus	Monticello Steam Electric Station

- September 18<sup>th</sup> 2015 submittal included:
  - TCEQ modeling demonstrating SO<sub>2</sub> impacts for Coletto Creek, Tolk, and Twin Oaks were less than the NAAQS;
  - TCEQ analysis showing Sandy Creek actual emissions below the threshold; and
  - modeling done by a third party demonstrating SO<sub>2</sub> impacts for WA Parish, Limestone, and San Miguel facilities were less than the NAAQS.



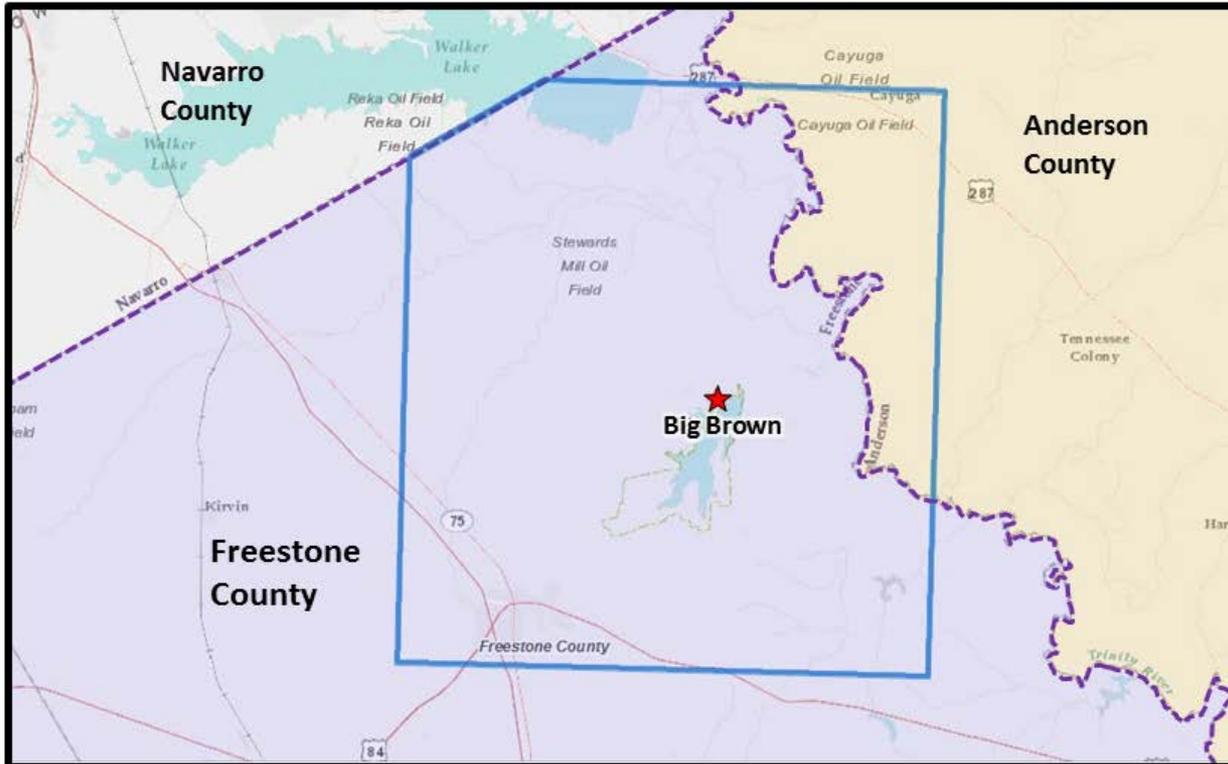
# Proposed Designations

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- In February 2016, EPA notified states of intended designations for the 12 facilities:
  - Attainment/Unclassifiable
    - Atascosa, Goliad, Lamb, Limestone, and Robertson Counties
  - Unclassifiable
    - Fort Bend, McLennan, Milam, and Potter Counties
  - Nonattainment
    - Portions of Anderson, Freestone, Gregg, Panola, Rusk, and Titus Counties
- Texas response on April 19, 2016
- Final Designations by July 2, 2016

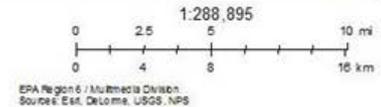


# Proposed Big Brown Nonattainment Area



January 12, 2016

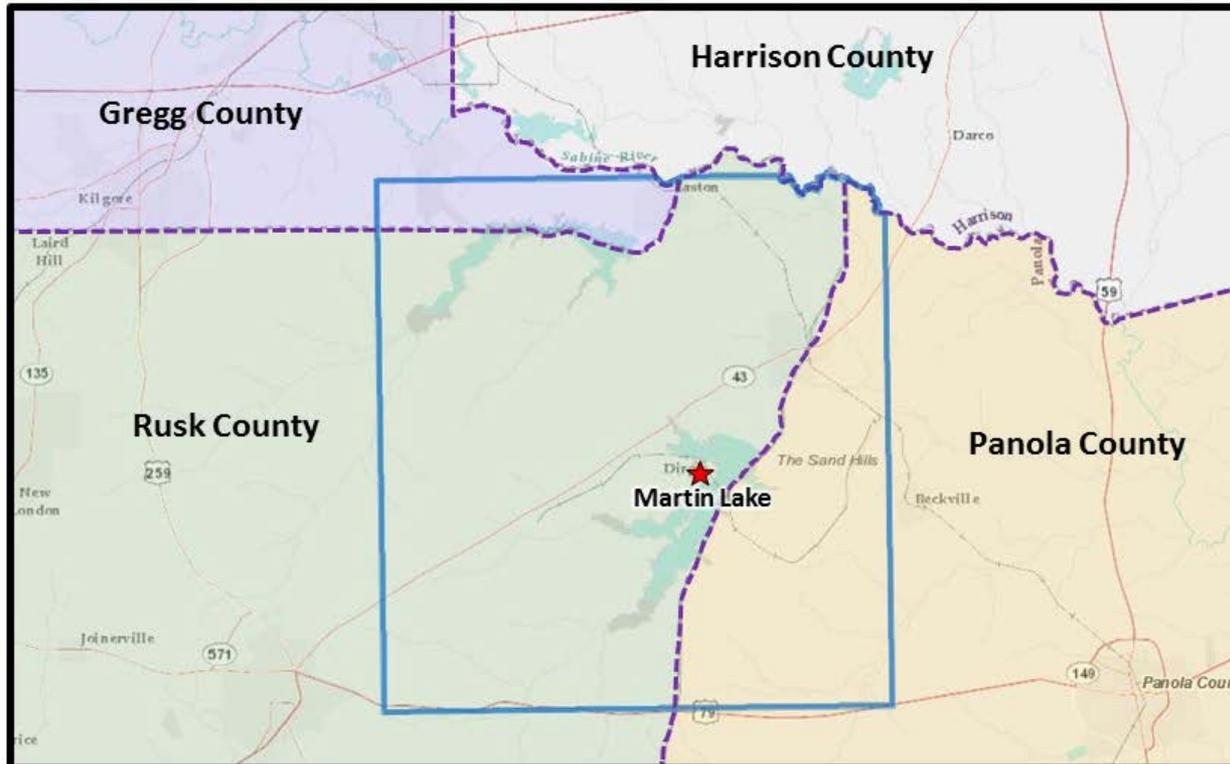
- ★ Consent Decree Source
- Proposed Nonattainment Area
- ▭ County Boundaries



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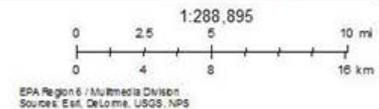


## Proposed Martin Lake Nonattainment Area



January 12, 2016

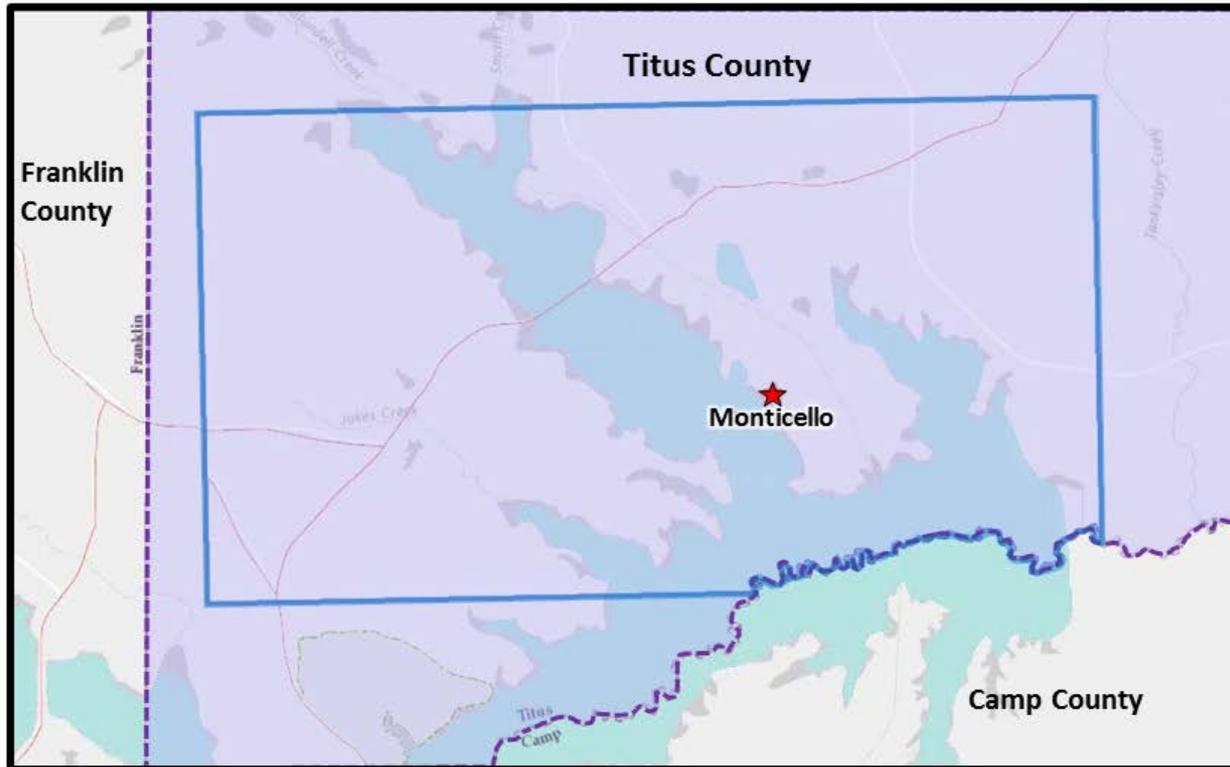
- ★ Consent Decree Source
- Proposed Nonattainment Area
- ⊞ County Boundaries



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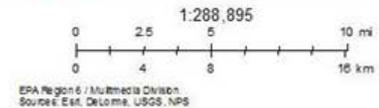


## Proposed Monticello Nonattainment Area



January 12, 2016

-  Consent Decree Source
-  Proposed Nonattainment Area
-  County Boundaries



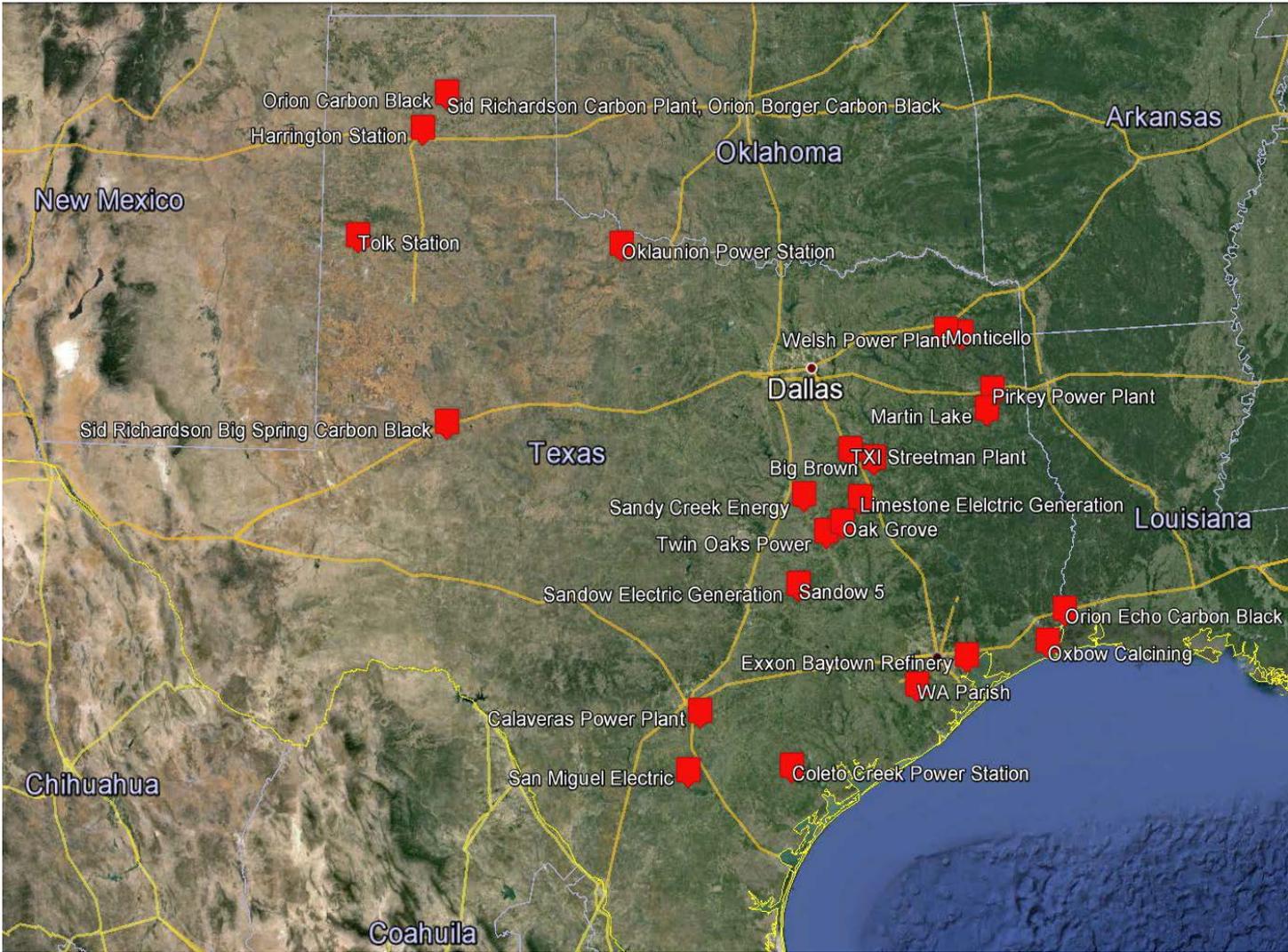
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# Data Requirements Rule

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- Signed August 10, 2015
- Requires states to characterize air quality for SO<sub>2</sub> sources emitting 2,000 tons or more per year
  - Model
  - Monitor
  - Establish enforceable limits < 2,000 tons/yr.
- 25 Texas facilities submitted to EPA on January 15, 2016
  - EPA concurrence of 25 facilities on March 21, 2016





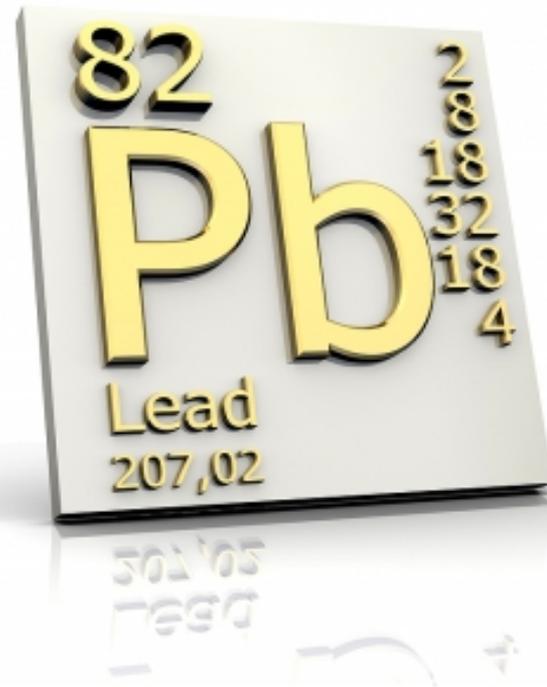
# SO<sub>2</sub> Data Requirements Rule Timeline

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- 1/15/2016 = List of applicable sources (25 sites)
- 7/1/2016 = Approach for each site is due to EPA
  - Modeling protocol
  - Monitoring plan (Annual Monitoring Network Plan)
  - Lower emission limits
- 1/1/2017 = Monitoring sites operational
- 1/13/2017 = Deadline for modeling results and/or enforceable emission limits
- 12/31/2017 = EPA designations for areas where states are not monitoring
- 12/31/2020 = EPA designations for any/all remaining undesignated areas



# Lead



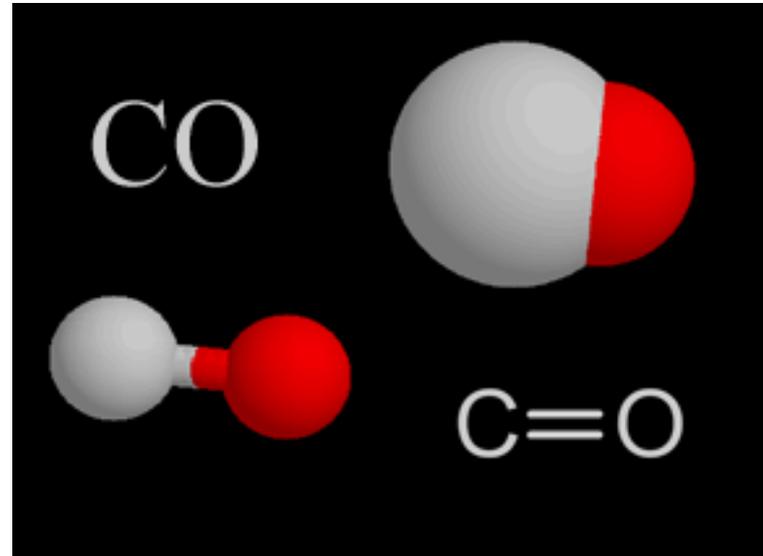


# Lead

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- Portion of Collin County nonattainment for the 2008 lead NAAQS
- Attainment Demonstration SIP revision adopted by TCEQ on August 8, 2012
- Frisco battery recycling operations permanently shut down November 30, 2012
- Area now has three years of monitoring data below the standard
- Proposed Lead Redesignation and Maintenance Plan SIP revision approved by the commission on April 27, 2016 and scheduled for adoption in October 2016

# Carbon Monoxide





# CO NAAQS

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- 2011 NAAQS requires one CO monitor to be collocated with one required near-road NO<sub>2</sub> monitor in Core-Based Statistical Areas (CBSA) with populations of 1 million or more.
- Monitors installed in Houston and Fort Worth in 2015
  - Fort Worth California Parkway North
  - Houston North Loop
- Monitors to be installed in Austin and San Antonio by January 1, 2017
  - Austin North Interstate 35
  - San Antonio Interstate 35
- All areas in Texas attainment

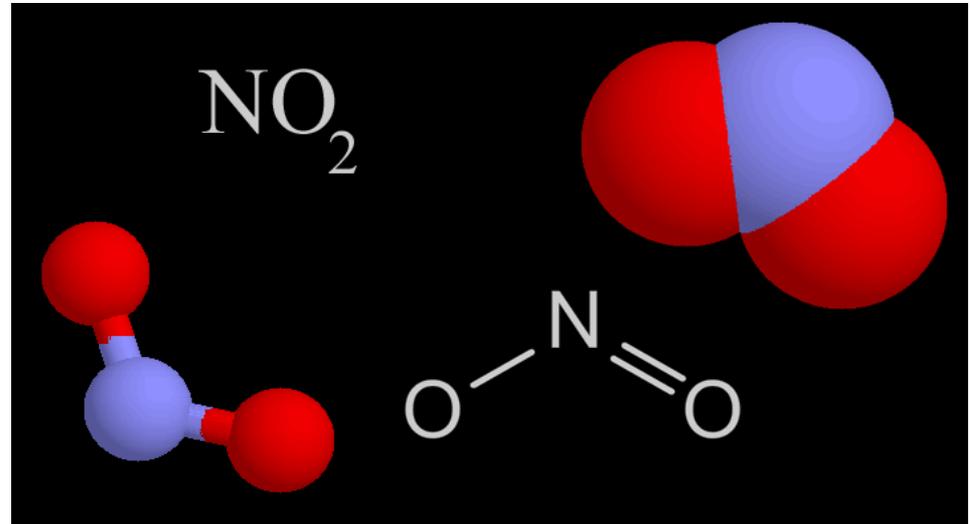


# CO NAAQS

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- In 1990, El Paso was designated as a moderate nonattainment area for CO.
- EPA approved a redesignation request and maintenance plan SIP revision in August 2008.
- A second 10-year maintenance plan is due to the EPA in October 2016.
- The proposed limited maintenance plan is scheduled for adoption in September 2016.

# Nitrogen Dioxide





# 2010 NO<sub>2</sub> NAAQS

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- Final rule published February 2010
- No Texas nonattainment areas
- Near-road monitoring network requirements
  - Requires one NO<sub>2</sub> monitor to be located in CBSAs with populations of 500,000 or more
- Monitors installed in Houston, Dallas, San Antonio, and Austin in 2014
- Additional monitors installed in Dallas and Houston in 2015
  - Fort Worth California Parkway North
  - Houston North Loop
- Near-road data to date shows compliance with the 2010 standard, highest 98<sup>th</sup> percentile one-hour measurements for Texas showing less than half of NAAQS (or less than 50 ppb)



# Particulate Matter





# PM<sub>10</sub>

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- El Paso was designated as a moderate nonattainment area for PM<sub>10</sub> in 1990.
- EPA approved the El Paso SIP revision for PM<sub>10</sub> on December 14, 2015.
  - The SIP incorporates a revised Memorandum of Agreement and a Chapter 111 rule change for PM<sub>10</sub>.
- All other areas in Texas are classified as attainment/unclassifiable for PM<sub>10</sub>.



# PM<sub>2.5</sub>

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- EPA revised the PM<sub>2.5</sub> standard in 2012
- Annual PM<sub>2.5</sub> standard finalized December 14, 2012
- All areas of Texas designated unclassifiable/attainment



# 2012 PM<sub>2.5</sub> Standard

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- Near-road monitoring network requirements
  - Requires one PM<sub>2.5</sub> monitor to be collocated with the required near-road NO<sub>2</sub> monitor in CBSAs with populations of 1 million or more
- Monitors installed in Houston and Fort Worth in 2015
  - Fort Worth California Parkway North
  - Houston North Loop
- Monitors to be installed in Austin and San Antonio by January 1, 2017
  - Austin North Interstate 35
  - San Antonio Interstate 35



# Interstate Transport



# Cross State Air Pollution Rule (CSAPR)

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- Final rule published August 2011
- Intended to replace the Clean Air Interstate Rule (CAIR)
- Addresses 1997 ozone and PM<sub>2.5</sub> and 2006 PM<sub>2.5</sub> NAAQS
- Requires 28 states to reduce power plant emissions that cross state lines
- Phase I effective January 1, 2015 and Phase II scheduled to begin January 1, 2017
  - EPA implementing Federal Implementation Plan (FIP) for Texas



# CSAPR Litigation

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- December 2011
  - U.S. Court of Appeals for the D.C. Circuit stayed the rule.
- August 2012
  - D.C. Circuit vacated CSAPR.
  - Ordered CAIR to remain in place until replacement rule is in place
- April 29, 2014
  - Supreme Court ruled to uphold CSAPR.
- February 25, 2015
  - D.C. Circuit heard oral arguments on remanded issues.
- July 28, 2015
  - D.C. Circuit remanded CSAPR 2014 SO<sub>2</sub> and ozone season NO<sub>x</sub> budget for Texas due to over-control.
  - Current CSAPR budgets remain in effect but may change in the future.



# Interstate Transport for 2008 Ozone Standard

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- Texas submitted SIP revision addressing transport obligation for 2008 ozone NAAQS in December 2012.
- EPA proposed CSAPR Update Rule on November 16, 2015 to address interstate transport for 2008 ozone NAAQS.
- Texas is linked to nonattainment in one state and maintenance in six states.
- EPA proposed disapproval on Texas transport obligations on April 4, 2016.
- Finalized CSAPR Update Rule is expected in summer 2016.



# Infrastructure and Interstate Transport SIP Updates

NAAQS	SIP Adopted	EPA Action: Infrastructure	EPA Action: Transport	EPA Action: Visibility Transport
2008 Lead	2011	Approved 1/2016	Approved 1/2016	Approved 1/2016
2008 Ozone	2012	Proposed Approval 2/2016	Action By 6/7/16	Proposed Disapproval 1/2016; FIP TBD*
2010 NO <sub>2</sub>	2012	Proposed Approval 2/2016	Proposed Approval 2/2016	Proposed Disapproval 1/2016; FIP TBD*
2010 SO <sub>2</sub>	2013	Approved 1/2016	TBD	Proposed Disapproval 1/2016; FIP TBD*
2012 PM <sub>2.5</sub>	2015	TBD	TBD	TBD
2006 PM <sub>2.5</sub>	2009	Approved 1/2012	TBD <sup>+</sup>	Proposed Disapproval 1/2016; FIP TBD*
1997 PM <sub>2.5</sub>	2008	Approved 1/2012	TBD <sup>+</sup>	Proposed Disapproval 1/2016; FIP TBD*

\*The EPA disapproved portions of Texas' infrastructure SIP regarding visibility transport for the 1997 PM<sub>2.5</sub> NAAQS, the 1997 ozone NAAQS, the 2006 PM<sub>2.5</sub> NAAQS, the 2008 ozone NAAQS, the 2010 NO<sub>2</sub> NAAQS, and the 2010 SO<sub>2</sub> NAAQS in the January 5, 2016 final rule to partially disapprove the Texas 2009 Regional Haze SIP revision. The EPA is deferring action at this time on promulgating a FIP to address visibility deficiencies.

+Final action is anticipated due to the EPA's November 10, 2014 final approval of the TCEQ's GHG permitting program and the September 4, 2015 correction to the CFR to reflect that Texas now has a SIP-approved GHG permitting program.



## Big Bend National Park

NPS Photos



## Regional Haze



## Guadalupe Mountains National Park



# Regional Haze

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- Rule requires states to restore visibility to natural conditions in 156 national parks and wilderness areas.
  - Texas: Big Bend National Park and Guadalupe Mountains National Park
  - Oklahoma: Wichita Mountains Wilderness
- Regional Haze SIP revision was submitted to EPA in March 2009.
- Five-year Regional Haze Progress Report was submitted to EPA on March 20, 2014.
- Next Regional Haze SIP is scheduled for 2018.



# Regional Haze

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- EPA finalized Federal Implementation Plan (FIP) on January 5, 2016 requiring power plants to reduce emissions in three-five years.
- FIP requires additional controls on seven coal-fired power plants to reduce SO<sub>2</sub>.
- EPA found that emissions from these facilities impact Big Bend, Guadalupe Mountains, and Wichita Mountains.
- Pending issues: Court requiring EPA to redo CSAPR budget for Texas; EPA is considering impact on EGUs subject to best available retrofit technology (BART).



# Contact Information

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- To join the SIP/Air Quality update e-mail list go to: [www.tceq.texas.gov/airquality/sip/sipcontact.html](http://www.tceq.texas.gov/airquality/sip/sipcontact.html)



**Questions?**