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

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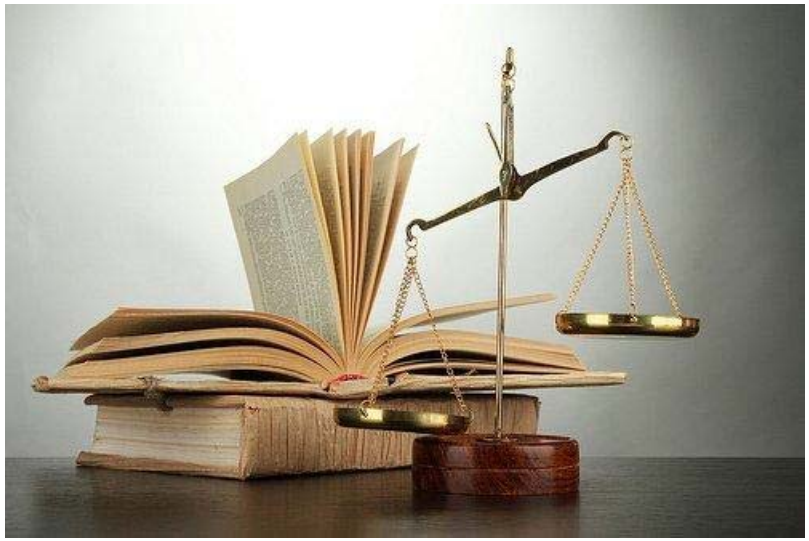
Air Quality Division

2018 Environmental Trade Fair

Today's Topics

- 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

- Required by the Federal Clean Air Act (FCAA)
- 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

- 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)*
- 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

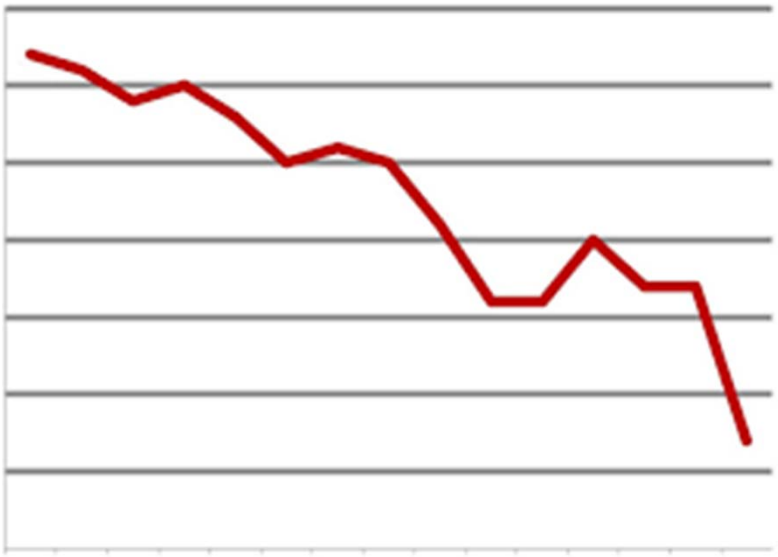
Pollutant	Level	Averaging Time
Ozone (O_3)	0.070 ppm*	Eight-Hour
Particulate Matter ($PM_{2.5}$)	12.0 µg/m^3	Annual (Arithmetic Mean)
	35 µg/m^3	Twenty-Four-Hour
Particulate Matter (PM_{10})	150 µg/m^3	Twenty-Four-Hour
Nitrogen Dioxide (NO_2)	53 ppb	Annual (Arithmetic Mean)
	100 ppb	One-Hour
Sulfur Dioxide (SO_2)	75 ppb	One-Hour
Carbon Monoxide (CO)	9 ppm	Eight-Hour
	35 ppm	One-Hour
Lead (Pb)	0.15 µg/m^3	Rolling Three-Month Average

Note: Secondary NAAQS are the same as the primary NAAQS for all pollutants except SO_2, which has a secondary NAAQS of 0.5 ppm over three hours, and $PM_{2.5}$, which has a secondary NAAQS of 15.0 µg/m^3 annually. More information can be found at EPA's NAAQS Web page (*https://www.epa.gov/criteria-air-pollutants/naaqs-table).*

* In 1997, EPA revoked the one-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

Criteria Pollutant	Proposed Rule	Final Rule
Nitrogen Dioxide (NO_2)	July 14 2017	April 6, 2018
Sulfur Dioxide (SO_2)	May 25, 2018	January 28, 2019
Nitrogen Oxides (NO_X) and Sulfur Oxides (SO_X) Secondary Standard	2021	2022
Particulate Matter (PM)	2021	2022
Lead (Pb)	TBD	TBD
Ozone (O_3)	TBD	TBD
Carbon Monoxide (CO)	TBD	TBD



Design Values

Data Completeness

- 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 EPA's Scientific and Technical Information for an individual criteria pollutant (https://www.epa.gov/criteria-air-pollutants/naaqs-table).

Calculating Fine Particulate Matter ($PM_{2.5}$) Design Values

- Annual $PM_{2.5}$ Design Values:
  - Calculate the quarterly mean of the 24-hour $PM_{2.5}$ measurements.
  - Average the quarterly means for each year; this is called the weighted annual mean.
  - The design value is the three-year average of the weighted annual mean $PM_{2.5}$.
- 24-Hour $PM_{2.5}$ Design Values:
  - Determine the number of valid 24-hour $PM_{2.5}$ concentrations for each year.
  - Use the number of valid days to find your 98^{th} percentile value for the year.
  - The design value is the three-year average of the 98^{th} percentile 24-hour $PM_{2.5}$ concentration.

2017* $PM_{2.5}$ Design Values

County	Annual Design Value ($\mu g/m^3$)	24-Hour Design Value ($\mu g/m^3$)
Bexar	8.4	20
Dallas	8.9	18
Ellis	8.7	18
El Paso	8.9	23
Galveston	6.7	22
Harris	10.7	22
Harrison	8.6	17
Hidalgo	10.2	26
Nueces	9.3	24
Tarrant	8.7	18
Travis	9.6	20
NAAQS	**12.0**	**35**

*2017 design values are from EPA's Air Quality System AMP 480 Report. Only counties with at least one valid design value are displayed in this table. Data are current as of 4/3/2018 and is subject to change.

Calculating Coarse Particulate Matter (PM_{10}) Design Values

- 24-Hour PM_{10} 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.
  - The design value is the average of the number of expected exceedances over three years.

2017* PM_{10} Design Values

County	Expected Exceedances
Bexar	0
Dallas	0
El Paso	2
Galveston	0
Harris	0
Harrison	0
Hidalgo	0
Tarrant	0
Travis	0
Webb	0
NAAQS	**1.0**

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Calculating Nitrogen Dioxide Design Values

- Annual NO_2 Design Values:
  - The design value is the annual average of all valid one-hour NO_2 concentrations.
- One-Hour NO_2 Design Values:
  - Determine the number of days with valid NO_2 concentrations for each year.
  - Use the number of valid days to find the 98^{th} percentile of daily peak NO_2 values for the year.
  - The design value is the three-year average of the 98^{th} percentile of the daily maximum one-hour NO_2 concentration.

2017* NO_2 Design Values

County	Annual Design Value (ppb)	One-Hour Design Value (ppb)
Bexar	6	41
Brazoria	5	32
Dallas	9	45
Denton	5	31
El Paso	10	59
Ellis	5	33
Galveston	2	30
Gregg	3	21
Harris	14	49
Harrison	2	18
Hunt	4	27
Jefferson	6	31
Kaufman	3	26
McLennan	3	24
Montgomery	3	27
Navarro	2	23
Orange	3	28
Smith	2	16
Tarrant	12	44
Travis	13	48
NAAQS	**53**	**100**

*2017 design values are from EPA's Air Quality System AMP 480 and AMP 450 Reports. Only counties with at least one valid design value are displayed in this table. Data are current as of 4/3/2018 and is subject to change.

Calculating Sulfur Dioxide Design Values

- One-Hour SO_2 Design Values
  - Determine the number of days with valid SO_2 concentrations for each year.
  - Use the number of valid days to find the 99^{th} percentile of daily peak SO_2 values for the year.
  - The design value is the three-year average of the 99^{th} percentile of the daily maximum one-hour SO_2 concentration.

2017* SO_2 Design Values

County	One-Hour Design Value (ppb)
Bexar	12
Dallas	4
Ellis	5
El Paso	6
Galveston	21
Gregg	30
Harris	18
Jefferson	13
Kaufman	9
McLennan	6
Navarro	39
Nueces	4
Travis	4
NAAQS	**75**

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Calculating Carbon Monoxide Design Values

- One-Hour CO Design Values: The design value is the second-highest one-hour CO concentration for the year.
- Eight-Hour CO Design Values: The design value is the second-highest non-overlapping eight-hour CO concentration for the year.

2017* CO Design Values

County	One-Hour Design Value (ppm)	Eight-Hour Design Value (ppm)
Bexar	1.7	1.1
Cameron	2.2	1.0
Dallas	1.7	1.0
El Paso	24.0	4.9
Harris	2.1	1.9
Jefferson	1.0	0.5
McLennan	0.5	0.4
Tarrant	1.4	0.9
Travis	2.2	1.3
Webb	3.0	2.2
NAAQS**	**35**	**9**

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**Because design values are reported to one decimal place, an area will not violate the CO NAAQS unless it measures greater than 35.4 ppm for one-hour CO or greater than 9.4 ppm for eight-hour CO.

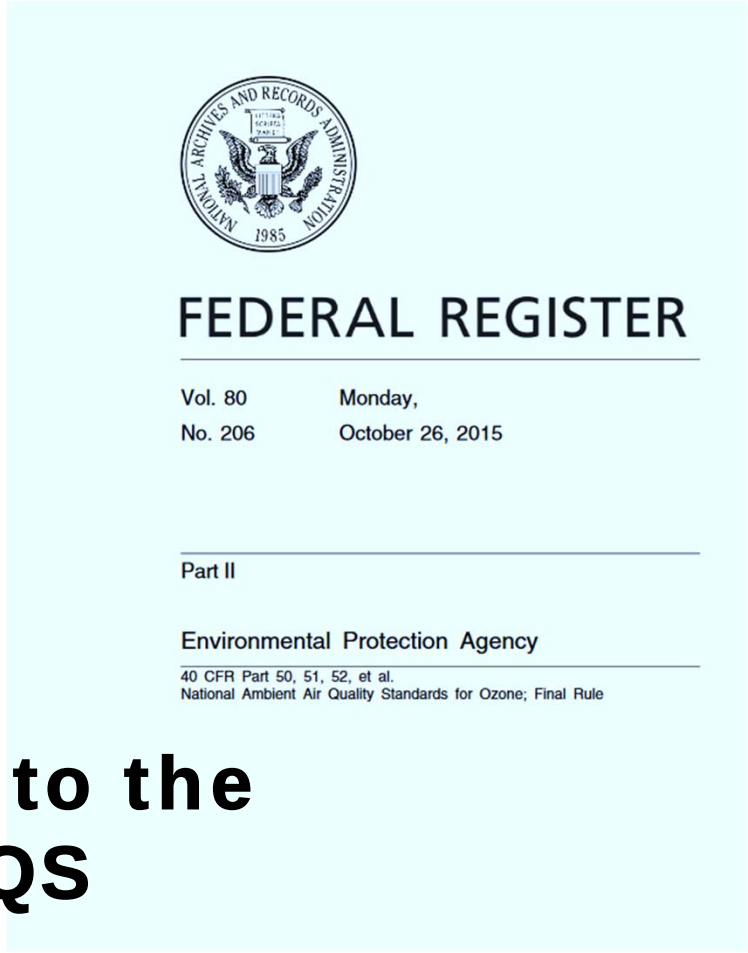
Calculating Lead Design Values

- Rolling Three-Month Lead Design Values:
  - Calculate the monthly mean of the 24-hour lead concentrations.
  - Calculate rolling three-month lead averages for a three-year period.
  - The design value is the maximum of the rolling three-month averages over a three-year period.

2017* Lead Design Values

County	Design Value ($\mu g/m^3$)
Cameron	0.00
Collin	0.01
El Paso	0.00
Kaufman	0.17
Potter	0.00
Webb	0.01
NAAQS	**0.15**

**2017 design values are from EPA's Air Quality System AMP 480 Report. Only counties with at least one valid design value are displayed in this table. Data are current as of 4/3/2018 and is subject to change.



2015 Revisions to the Ozone NAAQS

2015 Revisions to the Ozone NAAQS

- 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

- Final Rule – October 1, 2015
- State Area Designation Recommendations due to the EPA - October 1, 2016
- EPA's Round 1 Attainment/Unclassifiable Designations – November 6, 2017
- EPA's Response to State Recommendations for Remaining Areas – December 22, 2017
- EPA Final Designations for Remaining Areas – April 30, 2018
- EPA Final Designations for San Antonio Area – July 17, 2018
- Implementation Plans – 2021 to 2022
- Attainment of NAAQS – 2021 to 2038

Calculating Eight-Hour Ozone Design Values

- Calculate the eight-hour daily peak at each monitor for each day.
- Average the fourth highest eight-hour daily peak value from each of 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 the Eight-Hour Ozone Design Value: Example

1. Monitor A has three years of complete data; sort daily peaks in descending order by year:

	2011	2012	2013
Maximum Daily Peak Eight-Hour Ozone	87	85	86
2nd Highest Daily Peak Eight-Hour Ozone	85	83	80
3rd Highest Daily Peak Eight-Hour Ozone	80	78	75
4th Highest Daily Peak Eight-Hour Ozone	78	77	74

2. Take the 4th highest eight-hour daily peaks from each year and find the average:

$$\frac{78 + 77 + 74}{3} = 76.333 \text{ ppb}$$

3. Now truncate your average:

~~76.333~~ = 76 ppb

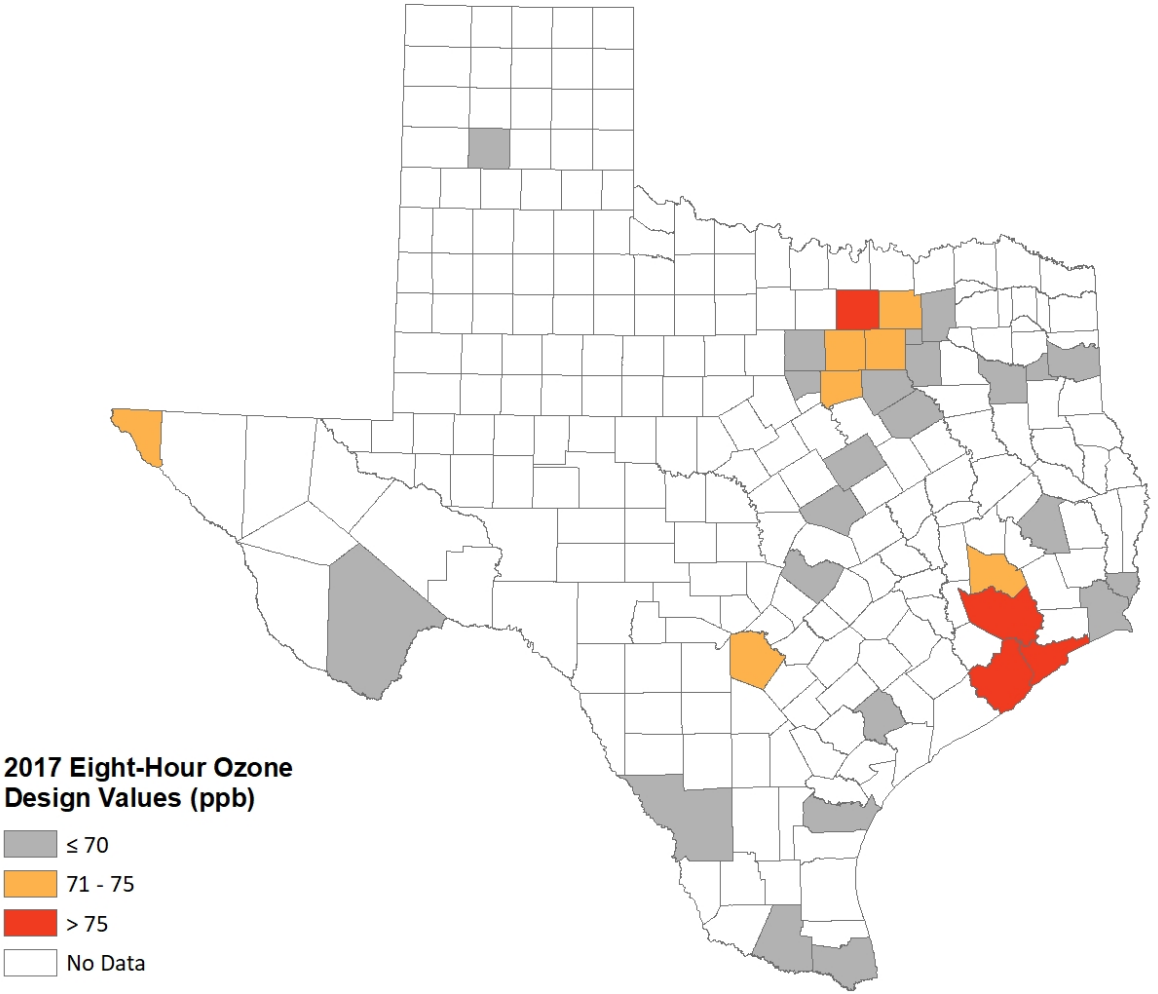
This is the eight-hour ozone design value.

Comparing Design Values to the NAAQS

- 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

2017 Ozone Design Values by County

CSA / CBSA	County	2017 8Hr Ozone DV (ppb)
Houston—The Woodlands	Harris	81
Dallas—Fort Worth	Denton	79
Houston—The Woodlands	Galveston	77
Houston—The Woodlands	Brazoria	77
Dallas—Fort Worth	Tarrant	75
San Antonio—New Braunfels	Bexar	74
Dallas—Fort Worth	Collin	74
Dallas—Fort Worth	Dallas	74
Houston—The Woodlands	Montgomery	74
Dallas—Fort Worth	Johnson	73
El Paso—Las Cruces	El Paso	71
Dallas—Fort Worth	Parker	70
Killeen-Temple	Bell	69
Austin—Round Rock	Travis	69
Dallas—Fort Worth	Hood	67
Beaumont—Port Arthur	Jefferson	67
Dallas—Fort Worth	Rockwall	66
Dallas—Fort Worth	Ellis	65
Longview-Marshall	Gregg	65
Waco	McLennan	65
Amarillo-Borger	Randall	65
Victoria—Port Lavaca	Victoria	65
Tyler-Jacksonville	Smith	64
Dallas—Fort Worth	Navarro	63
No CSA	Brewster	62
Corpus Christi—Kingsville—Alice	Nueces	62
Dallas—Fort Worth	Hunt	62
Longview-Marshall	Harrison	61
Dallas—Fort Worth	Kaufman	61
Beaumont—Port Arthur	Orange	60
No CSA	Polk	60
Brownsville-Harlingen-Raymondville	Cameron	57
McAllen-Edinburg	Hidalgo	55
Laredo	Webb	53



*2017 design values are calculated as of 4/3/2018 and subject to change. The El Paso design value excludes one concurred exceptional event from August 21, 2015.

**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.

Status of Texas Air Quality Planning Efforts

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- Criteria Pollutants
  - O_3
  - SO_2
  - Pb
  - CO
  - NO_2
  - PM
- Other Statewide Air Issues
  - Interstate Transport Rule
  - Regional Haze

Ozone

Revoked One-Hour and 1997 Eight-Hour Ozone NAAQS

- Redesignation Substitutes for revoked standards
- HGB Severe Nonattainment Area
  - One-Hour Ozone Standard
    - Approved by EPA on October 20, 2015
  - 1997 Eight-Hour Ozone Standard
    - Approved by EPA on November 8, 2016
- DFW Serious Nonattainment Area
  - One-Hour and 1997 Eight-Hour Ozone Standards
    - Approved by EPA on November 8, 2016

2018 D.C. Circuit Court Ruling

- The EPA's final 2008 ozone standard SIP requirements rule was challenged in *South Coast Air Quality Management District v. EPA*.
- On February 16, 2018, the D.C. Circuit Court vacated portions of the final rule including the Redesignation Substitute, among other issues.
- The EPA filed a petition for rehearing on April 23, 2018.

2008 Eight-Hour Ozone Standard

- 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

- Classified as a marginal nonattainment area for the 2008 ozone standard
  - Attainment deadline was July 20, 2015.
  - EPA approved a one-year extension to July 20, 2016.
- The EPA reclassified the area to moderate on December 14, 2016.
  - Attainment deadline is July 20, 2018.
  - Area had to attain by end of 2017.
- Attainment Demonstration and Reasonable Further Progress (RFP) SIP revisions were adopted December 15, 2016 and due to EPA January 1, 2017.

DFW Area

- Classified as a moderate nonattainment area for the 2008 standard
  - Wise County added to nonattainment area
  - Attainment deadline July 20, 2018
- RFP SIP revision adopted on June 3, 2015
- Attainment Demonstration adopted on July 6, 2016
  - Due to court decision, the TCEQ developed this attainment demonstration SIP revision to reflect the 2017 attainment year.
  - EPA proposed approval of the SIP revision on May 3, 2018

DFW RACT Update SIP

- The proposed DFW RACT Update SIP revision and voluntary Agreed Order between the TCEQ and TXI Operations, LP were approved by the commission on April 4, 2018.
  - The SIP revision would address the EPA's final conditional approval of RACT.
  - The Agreed Order incorporates certain permit conditions as NO_X RACT.
  - Adoption agenda is scheduled for September 26, 2018

2015 Eight-Hour Ozone NAAQS

- On October 1, 2015, the EPA lowered the NAAQS for ground-level ozone to 70 ppb.
- Original state designation recommendations
  - Based on 2015 design values
  - Recommended nonattainment for the DFW and HGB areas as well as Hood, El Paso, and Bexar Counties.
- Revised Recommendations
  - August 23, 2017 updated recommendation from TCEQ
    - Based on final 2016 monitoring data and information from exceptional events
    - Updated the recommendations for Hood and El Paso Counties to attainment
  - September 27, 2017 letter from the governor
    - No new areas in Texas should be designated nonattainment

EPA Designations

- **Round One:** Attainment/Unclassifiable designations made on November 16, 2017 for majority of Texas counties, effective January 16, 2018
- **Round Two:** Designations by April 30, 2018
  - EPA sent 120-day letters on December 22, 2017 for remaining area designations
  - EPA proposed nonattainment for eight-county HGB area and 10-county DFW area
  - EPA proposed attainment/unclassifiable for Hood and El Paso Counties

Round Two 120-Day Response

- Revised recommendation for HGB and DFW areas
- Texas recommended attainment/unclassifiable designations for:
  - Rockwall County in the DFW area
  - Liberty and Waller Counties in the HGB area

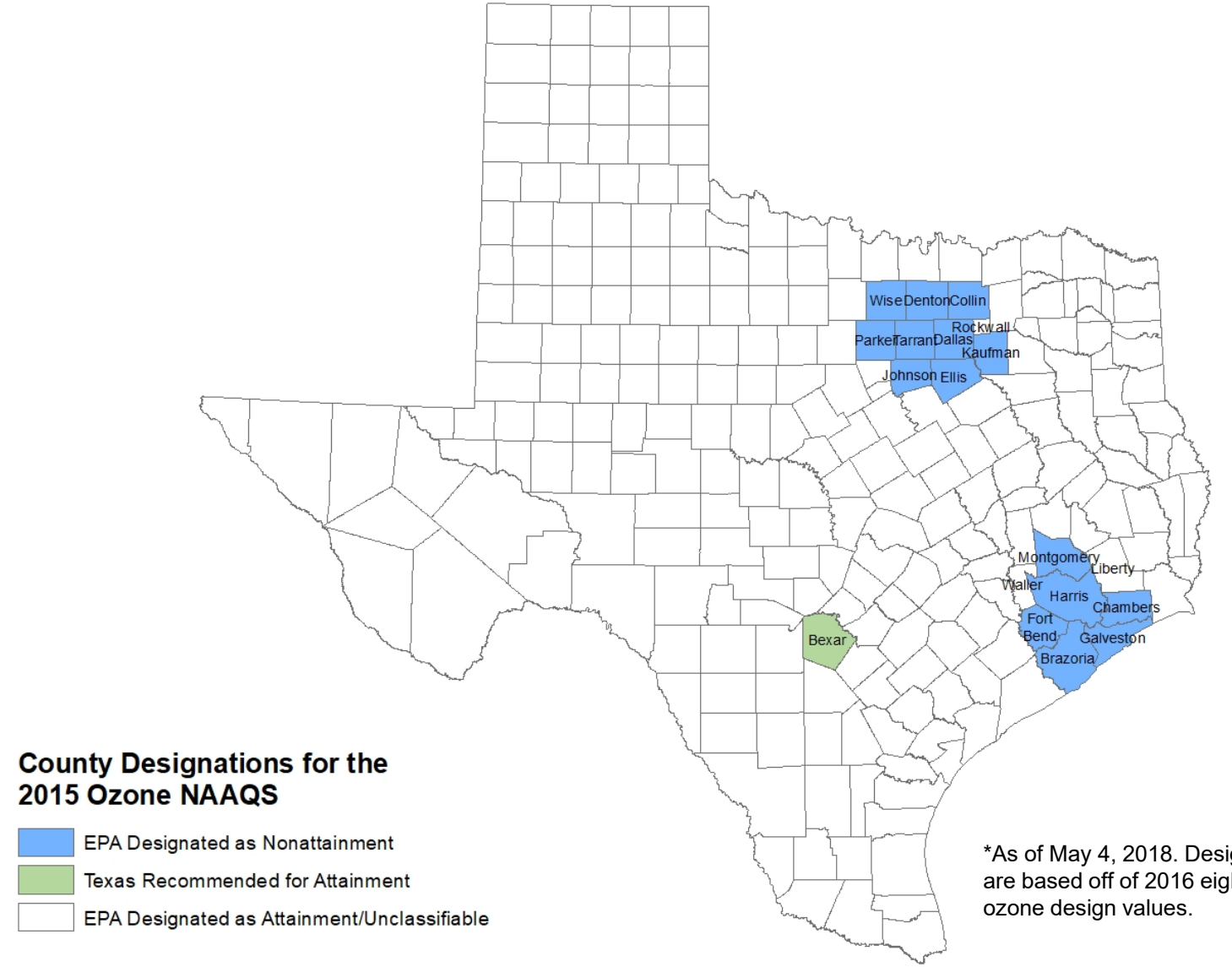
Final Round Two Designations

- Designations signed on April 30, 2018
- Nine-county DFW nonattainment area:
  - Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Tarrant, and Wise Counties
- Six-county HGB nonattainment area:
  - Brazoria, Chambers, Fort Bend, Galveston, Harris, and Montgomery Counties
- All other counties designated attainment/unclassifiable

San Antonio Designations

- EPA requested additional information regarding designation recommendations for the San Antonio area on January 19, 2018.
- March 19, 2018 120-day letter
  - EPA proposed attainment/unclassifiable designations for Atascosa, Bandera, Comal, Guadalupe, Kendall, Medina, and Wilson Counties.
  - EPA proposed to modify the governor's recommendation for Bexar County.
    - At best, unclassifiable.
  - Texas' response due May 11, 2018.
- Final designations by July 17, 2018

County Designations for the 2015 Ozone NAAQS



*As of May 4, 2018. Designations are based off of 2016 eight-hour ozone design values.

2015 Ozone NAAQS Proposed Implementation Rule

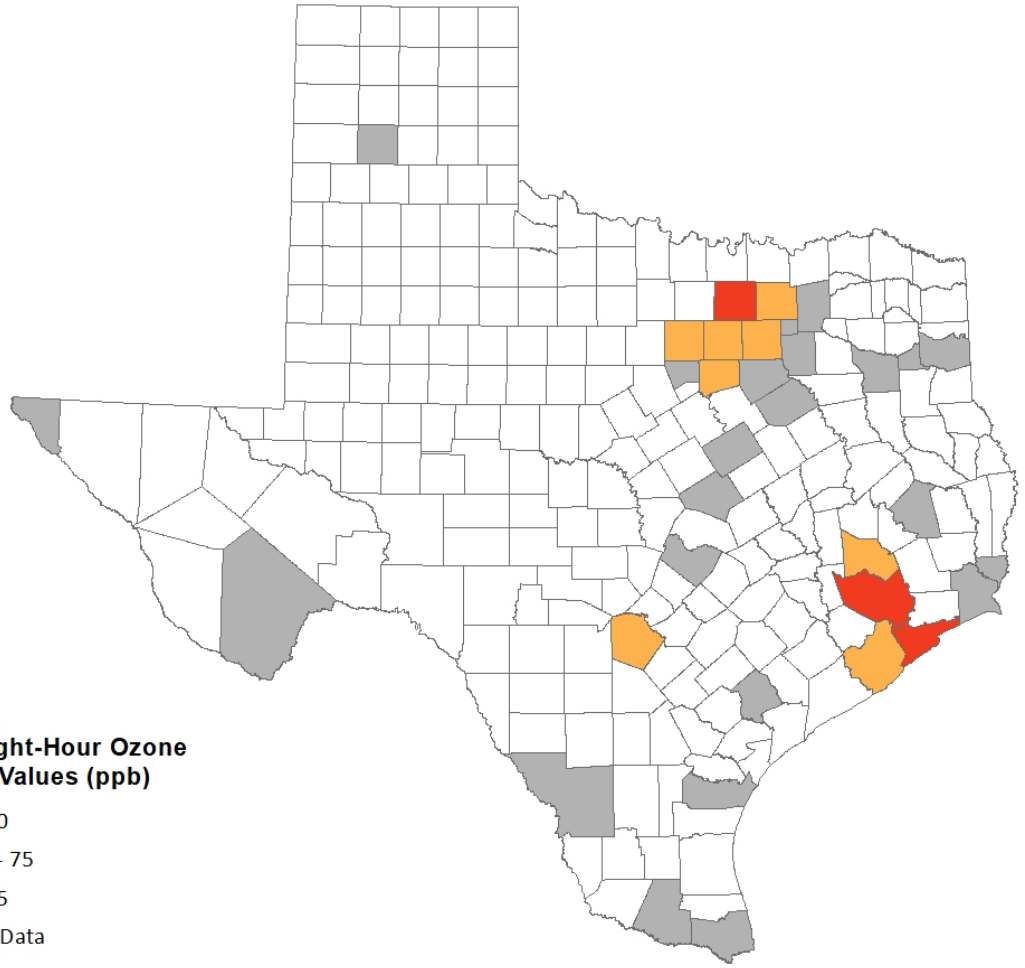
- Options for revoking the 2008 ozone NAAQS
  - 1) One year from 2015 ozone NAAQS designations for the entire country
  - 2) For areas designated nonattainment for the 2008 ozone NAAQS at the time of designations for the 2015 ozone NAAQS, only after approval of a maintenance plan for the 2008 NAAQS
- Reasonably available control measures (RACM) for sources outside the nonattainment area
  - evaluate and implement RACM for sources located outside the nonattainment area, but within the state, for nonattainment areas classified as moderate or above
- Reasonably available control technology (RACT) and RACM for marginal areas with an FCAA, §179B demonstration

Nonattainment Classification Ranges

Classification	Range Based on Percent-Above-Standard Approach 0.070 parts per million (ppm)	Potential Attainment Date
Marginal	0.071 up to 0.081 ppm	2021
Moderate	0.081 up to 0.093 ppm	2024
Serious	0.093 up to 0.105 ppm	2027
Severe – 15	0.105 up to 0.111 ppm	2033
Severe – 17	0.111 up to 0.163 ppm	2035
Extreme	0.163 ppm or more	2038

2016 Ozone Design Values by County

CSA / CBSA	County	2016 8Hr Ozone DV (ppb)
Dallas—Fort Worth	Denton	80
Houston—The Woodlands	Harris	79
Houston—The Woodlands	Galveston	76
Houston—The Woodlands	Brazoria	75
Dallas—Fort Worth	Tarrant	75
Dallas—Fort Worth	Collin	74
San Antonio—New Braunfels	Bexar	73
Dallas—Fort Worth	Parker	73
Dallas—Fort Worth	Dallas	72
Dallas—Fort Worth	Johnson	72
Houston—The Woodlands	Montgomery	72
El Paso—Las Cruces	El Paso	70
Dallas—Fort Worth	Hood	69
Beaumont—Port Arthur	Jefferson	68
Killeen-Temple	Bell	67
Longview-Marshall	Gregg	66
Dallas—Fort Worth	Rockwall	66
Austin—Round Rock	Travis	66
Tyler-Jacksonville	Smith	65
Victoria—Port Lavaca	Victoria	65
Amarillo-Borger	Randall	64
Corpus Christi—Kingsville—Alice	Nueces	64
Beaumont—Port Arthur	Orange	64
Dallas—Fort Worth	Ellis	63
Waco	McLennan	63
No CSA	Brewster	62
Longview-Marshall	Harrison	62
Dallas—Fort Worth	Kaufman	61
Dallas—Fort Worth	Navarro	61
No CSA	Polk	61
Dallas—Fort Worth	Hunt	60
Brownsville-Harlingen-Raymondville	Cameron	57
McAllen-Edinburg	Hidalgo	55
Laredo	Webb	54



*2016 design values are calculated as 1/18/2018. The El Paso design value excludes one concurred exceptional event from August 21, 2015.

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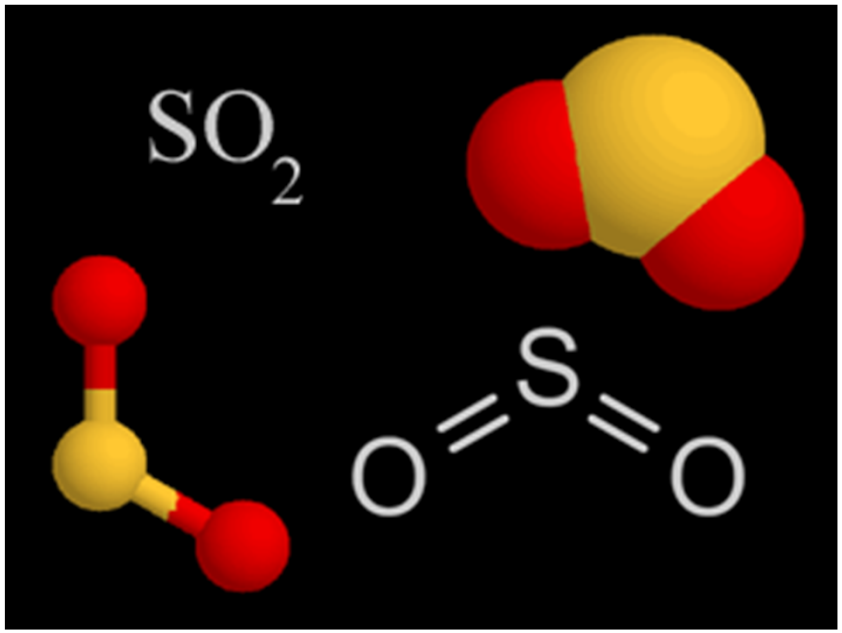
Timeline

November 2017	EPA Round One Attainment/ Unclassifiable Designations
March 2018	EPA finalizes Classifications Rule
April 2018	EPA signs (finalizes) Round Two designations and classifications
July 2018	EPA signs (finalizes) designations for San Antonio area
June/Sep 2018	Expected effective date of nonattainment designations
June/Sep 2020	Emissions Inventory SIP revisions due for all nonattainment areas
June/Sep 2021	Attainment deadline for marginal nonattainment areas

Sulfur Dioxide

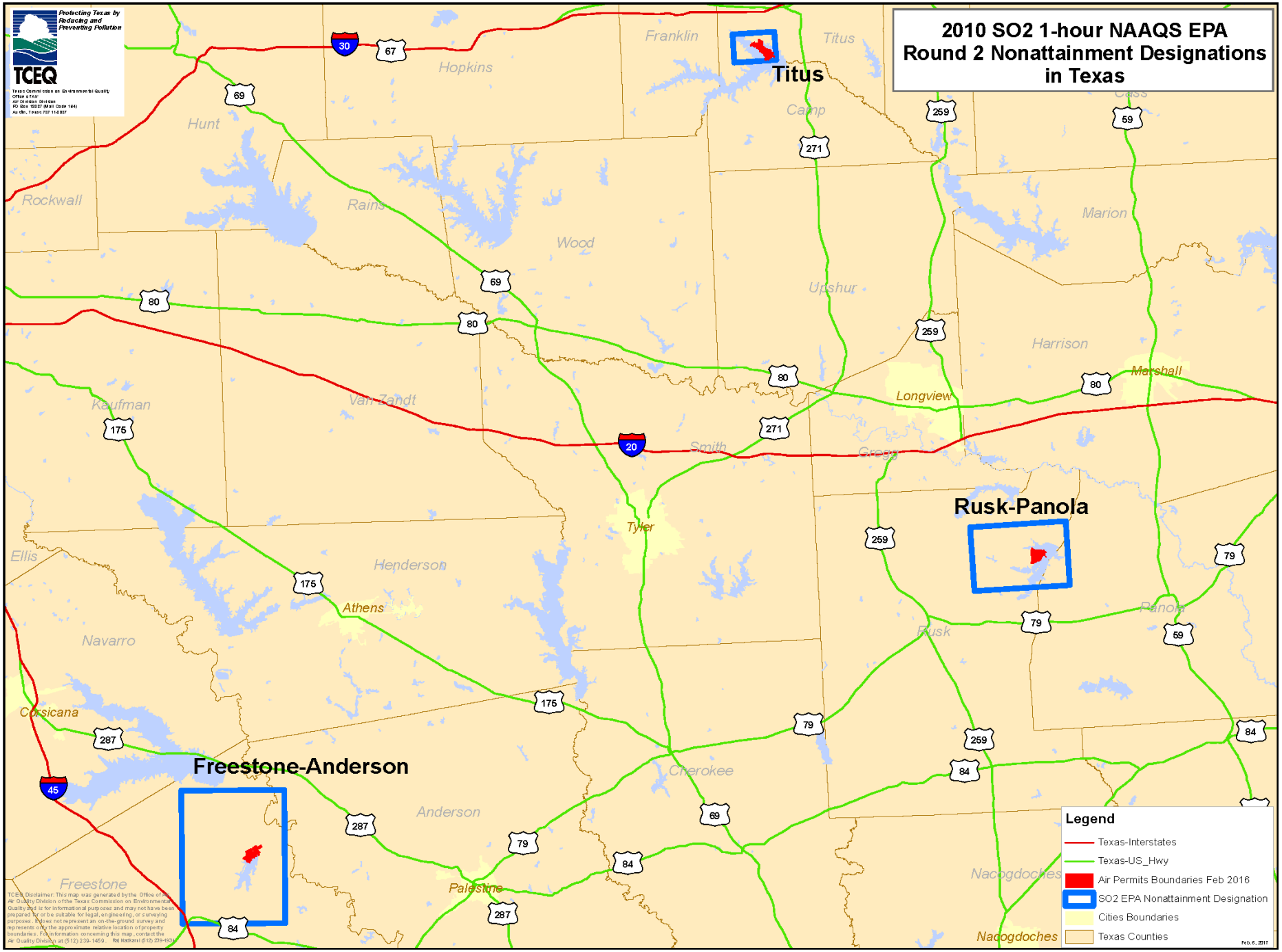


SO_2 NAAQS Revision

- Revised June 2010
- One-hour primary standard of 75 ppb
  - 99th percentile over three years
- Three-hour secondary standard of 500 ppb
  - Not to be exceeded more than once/year
- Round 1 nonattainment designations in 2013
  - Only for areas that had monitored values over the standard
  - No areas in Texas designated as nonattainment

Round 2 Designations

- Designations Effective September 12, 2016:
  - Unclassifiable/attainment designations for Atascosa, Fort Bend, Goliad, Lamb, Limestone, McLennan, and Robertson Counties
  - Unclassifiable for designation for Potter County
- Designations Effective January 12, 2017:
  - Nonattainment designations for three areas: (1) portions of Freestone and Anderson Counties; (2) portions of Rusk and Panola Counties; and (3) a portion of Titus County
  - Unclassifiable designation for Milam County


2010 SO2 1-hour NAAQS EPA
Round 2 Nonattainment Designations
in Texas
Protecting Texas by Reducing and Preventing Pollution
TCEQ
Titus
Rusk-Panola
Freestone-Anderson
Franklin
Titus
Hopkins
Camp
Hunt
Rockwall
Rains
Wood
Upshur
Marion
Harrison
Marshall
Longview
Kaufman
Van Zandt
Smith
Gregg
Tyler
Ellis
Henderson
Athens
Navarro
Panola
Rusk
Corsicana
Cherokee
Anderson
Freestone
Palestine
Nacogdoches
Legend
Texas-Interstates
Texas-US_Hwy
Air Permits Boundaries Feb 2016
SO2 EPA Nonattainment Designation
Cities Boundaries
Texas Counties
Feb 6, 2017

Attainment Demonstration SIP Revision Schedule

- SIP revision due to the EPA: July 12, 2018
- Controls must be in place: No later than January 12, 2021
- Attainment deadline: No later than January 12, 2022
- EPA reconsidering designations

Data Requirements Rule

- Signed August 10, 2015
- Requires states to characterize air quality for SO_2 sources emitting 2,000 tons or more per year
  - Model
  - Monitor
  - Establish enforceable limits < 2,000 tons/yr.
- Texas identified 24 facilities
  - Modeling for Oklaunion Power Station (Wilbarger County) submitted to EPA on January 12, 2017, demonstrating attainment
  - Monitoring for remaining facilities not already addressed under consent decree

Round 3 Designations

- Final designations were made on January 9, 2018 with an effective date of April 9, 2018.
- EPA designated 238 counties or portions of counties as separate unclassifiable/attainment areas.
  - Includes Wilbarger County for which modeling was submitted
  - Includes the portions of Anderson, Panola, Rusk, and Freestone Counties not previously designated nonattainment in Round 2

Eleven SO2 Source Monitors in Texas
As of January 2017

Timeline for Rounds 3 and 4 Designations

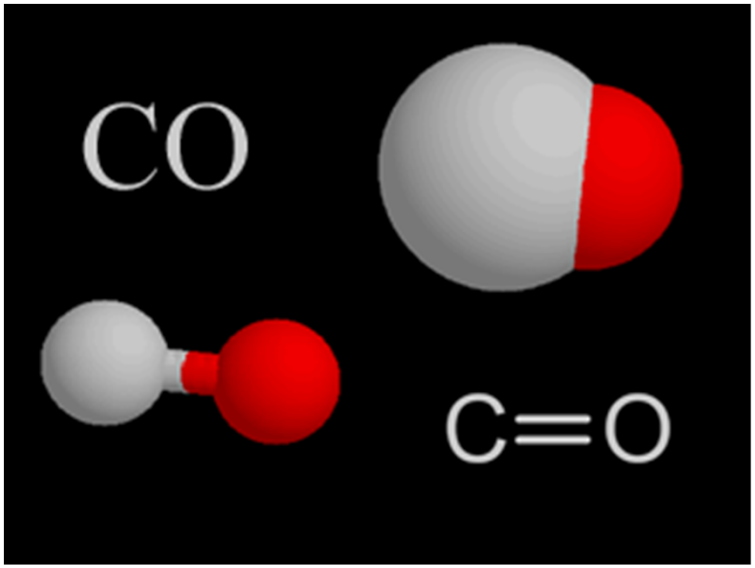
Jan 15, 2016	List of applicable sources (24 sites)
July 1, 2016	Approach for each site was due to EPA (Modeling protocol, Monitoring plan, Lower emission limits)
Jan 1, 2017	Monitoring sites operational
Jan 13, 2017	Deadline for modeling results and/or enforceable emission limits
Dec 31, 2017	EPA designations for areas where states are not monitoring (Round 3)
Dec 31, 2020	EPA designations for any/all remaining undesignated areas (Round 4)

Lead

Lead

- Portion of Collin County nonattainment for the 2008 lead NAAQS
- Area now has three years of monitoring data below the standard
- Lead Redesignation Request and Maintenance Plan SIP revision adopted by the commission on October 19, 2016
- June 29, 2017 EPA direct final approval; Effective September 27, 2017
  - Approved Redesignation Request and Maintenance Plan
  - Approved 2012 Attainment Demonstration for the 2008 Lead NAAQS and 2009 Second 10-year Maintenance Plan for the 1978 Lead NAAQS

Carbon Monoxide



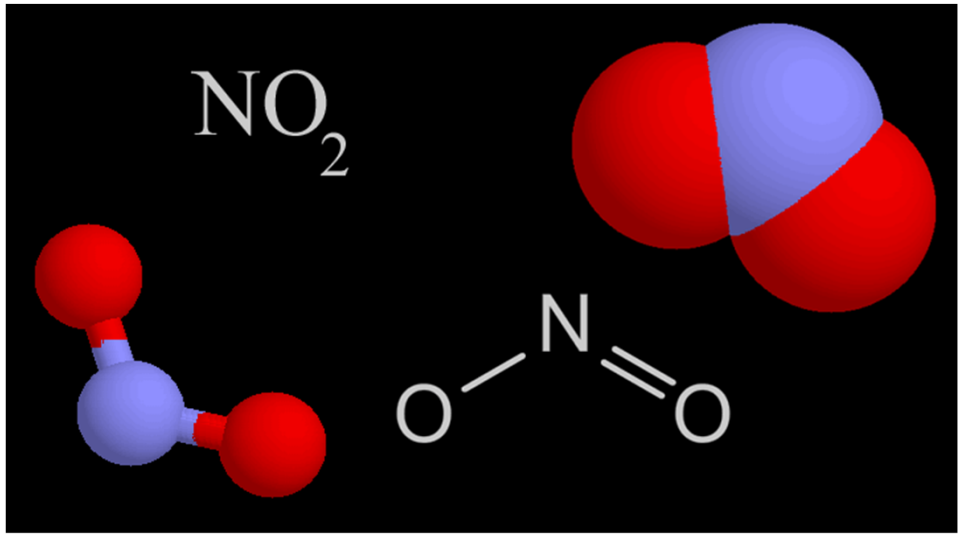
CO NAAQS

- 2011 NAAQS requires one CO monitor to be collocated with one required near-road NO_2 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 installed in Austin and San Antonio in December 2016
  - Austin North Interstate 35
  - San Antonio Interstate 35
- All areas in Texas attainment

CO NAAQS

- In 1990, El Paso was designated as a moderate nonattainment area for CO.
- EPA approved a redesignation request and maintenance plan SIP revision, effective October 3, 2008.
- A second 10-year limited maintenance plan was adopted by the commission on September 7, 2016 and EPA approval was published on March 21, 2017.

Nitrogen Dioxide



2010 NO_2 NAAQS

- Final rule published February 2010
- No Texas nonattainment areas
- Near-road monitoring network requirements
  - Requires one NO_2 monitor to be located in CBSAs with populations of 1 million 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^{th} percentile one-hour measurements for Texas showing approximately less than half of NAAQS (or approximately less than 50 ppb)

Particulate Matter

PM_{10}

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

$PM_{2.5}$

- EPA revised the $PM_{2.5}$ standard in December 2012
- Annual $PM_{2.5}$ standard lowered from 15 to 12 $\mu g/m^3$
- Designations finalized in December 2014
- All areas of Texas designated unclassifiable/attainment

2012 $PM_{2.5}$ Standard

- Near-road monitoring network requirements
  - Requires one $PM_{2.5}$ monitor to be collocated with the required near-road NO_2 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 installed in Austin and San Antonio in January 2017
  - Austin North Interstate 35
  - San Antonio Interstate 35

Additional SIP Updates

Anti-Tampering and EAC LIRAP Removal SIP

- SIP revision would remove:
  - 30 TAC Chapter 114, Subchapter B, Motor Vehicle Anti-tampering Requirements; and
  - Section 114.86, Low Income Repair Assistance Program (LIRAP) for Participating Early Action Compact Counties
- The requested action would withdraw four amendments to anti-tampering rules still pending action by EPA.
- The proposed revision was approved by the commission on April 27, 2018 and a public hearing is scheduled in Austin on May 31, 2018 at 2:00 p.m. in Building E, Room 201S.

Interstate Transport

Cross State Air Pollution Rule (CSAPR)

- Final rule published August 2011
- Intended to replace the Clean Air Interstate Rule (CAIR)
- Requires 28 states to reduce power plant emissions that cross state lines
- Texas included for 1997 ozone and 1997 $PM_{2.5}$ NAAQS
- Numerous lawsuits filed by states, industry, other entities
- D.C. Circuit remanded CSAPR 2014 SO_2 and ozone season NO_x budgets for Texas due to over-control
  - To address remanded SO_2 budgets, EPA removed Texas from CSAPR $PM_{2.5}$ program and determined that no new Federal Implementation Plan (FIP) requirements for Texas sources are needed for $PM_{2.5}$
  - Remanded ozone season NO_X budgets replaced by CSAPR Update rule budgets beginning January 1, 2017

Interstate Transport for 2008 Ozone Standard

- Texas submitted a SIP revision addressing transport obligations for the 2008 ozone NAAQS in December 2012.
- EPA finalized disapproval on Texas' 2008 ozone transport SIP on August 12, 2016.
- EPA finalized the CSAPR Update Rule on October 26, 2016 to address interstate transport for 2008 ozone NAAQS and included Texas.

Infrastructure and Transport SIP Revisions for the 2015 Ozone NAAQS

- Developed as separate SIP revisions
- Transport SIP revision includes modeling analysis demonstrating that Texas does not significantly contribute to nonattainment or interfere with maintenance of the NAAQS in any other state
- Approved for proposal on March 7, 2018
- Public comment period ended April 10, 2018
- Adoption scheduled for September 2018
- Due to EPA by October 1, 2018

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	Approved 9/2016 and 10/2016	Disapproved 8/2016 CSAPR Update FIP 10/26/16 (Effective 12/26/16)	Proposed Disapproval 12/2016; 10/17/2017 BART FIP (Effective November 16, 2017)
2010 NO_2	2012	Approved 9/2016 and 10/2016	Approved 9/2016	Proposed Disapproval 12/2016; 10/17/2017 BART FIP
2010 SO_2	2013	Approved 1/2016	TBD	Proposed Disapproval 12/2016; 10/17/2017 BART FIP
2012 $PM_{2.5}$	2015	Proposed Approval 3/22/2018	Proposed Approval 3/22/2018	TBD
2006 $PM_{2.5}$	2009	Approved 1/2012	Proposed Approval 02/14/2018	Proposed Disapproval 12/2016; 10/17/2017 BART FIP
1997 $PM_{2.5}$	2008	Approved 1/2012	Proposed Approval 02/14/2018	Proposed Disapproval 12/2016; 10/17/2017 BART FIP

Big Bend National Park

NPS Photos

Regional Haze

Guadalupe Mountains National Park

Regional Haze

- Rule requires states to restore visibility to natural conditions in 156 national parks and wilderness areas.
- 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.
- In 2017, EPA determined that Texas impacts 14 nearby Class I areas:
  - Texas: Big Bend and Guadalupe Mountains National Parks
  - Oklahoma: Wichita Mountains Wilderness
  - Arkansas: Caney Creek and Upper Buffalo Wilderness Areas
  - New Mexico (5), Missouri (2), Arkansas (2), and Colorado (2)

Regional Haze

- EPA finalized the reasonable progress FIP on January 5, 2016 requiring power plants to reduce emissions on seven coal-fired power plants to reduce SO_2. However, the U.S. Court of Appeals for the Fifth Circuit stayed this FIP.
- EPA's Best Available Retrofit Technology (BART) FIP was final on October 17, 2017. EPA will administer it as a trading program including only specific EGUs in Texas and no out-of-state trading.
- The EPA reconsidered that the final BART FIP satisfied interstate visibility transport for six NAAQS.

Amendments to Regional Haze Rule

- Final amendments published on January 10, 2017 in *Federal Register*
- Extends the next SIP revision from 2018 to 2021
- Five-year progress report no longer has to be a SIP revision
- Increases consultations with Federal Land Mangers (FLM)
- Expands Reasonably Available Visibility Impairment (RAVI), an FLM process, to all states
- In January 2018, the EPA announced it plans to revisit aspects of the 2017 Regional Haze Rule revisions.

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Questions?