

Air Quality Status Report and Discussion

City of Denton Committee on the Environment
November 14, 2023

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Emission Monitoring

National Ambient Air Quality Standards (Criteria Pollutants)

	<u>Attainment</u>	<u>Nonattainment</u>
Ozone		
Lead		
Carbon Monoxide		
Nitrogen Dioxide		
Particulate Matter		
Sulfur Dioxide		Partial Nonattainment In Navarro County Due to Aggregate Plant

Monitoring and Increased Regulations

Greenhouse Gas Emissions (i.e., Carbon Dioxide)



EPA Clean Air Act in North Central Texas

Clean Air Act (CAA)

- Federal stationary and mobile air emission regulations to protect public health and public welfare

Current and Historical Ozone Standards



- **1-Hour 1990 Standard – Attained in 2006**

- 125 ppb limit
 - Moderate for four counties in DFW: Collin, Dallas, Denton, and Tarrant



- **8-Hour 1997 Standard - Revoked**

- Less than 85 ppb limit
 - Moderate, then Serious for nine counties in DFW: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant



- **8-Hour 2008 Standard**

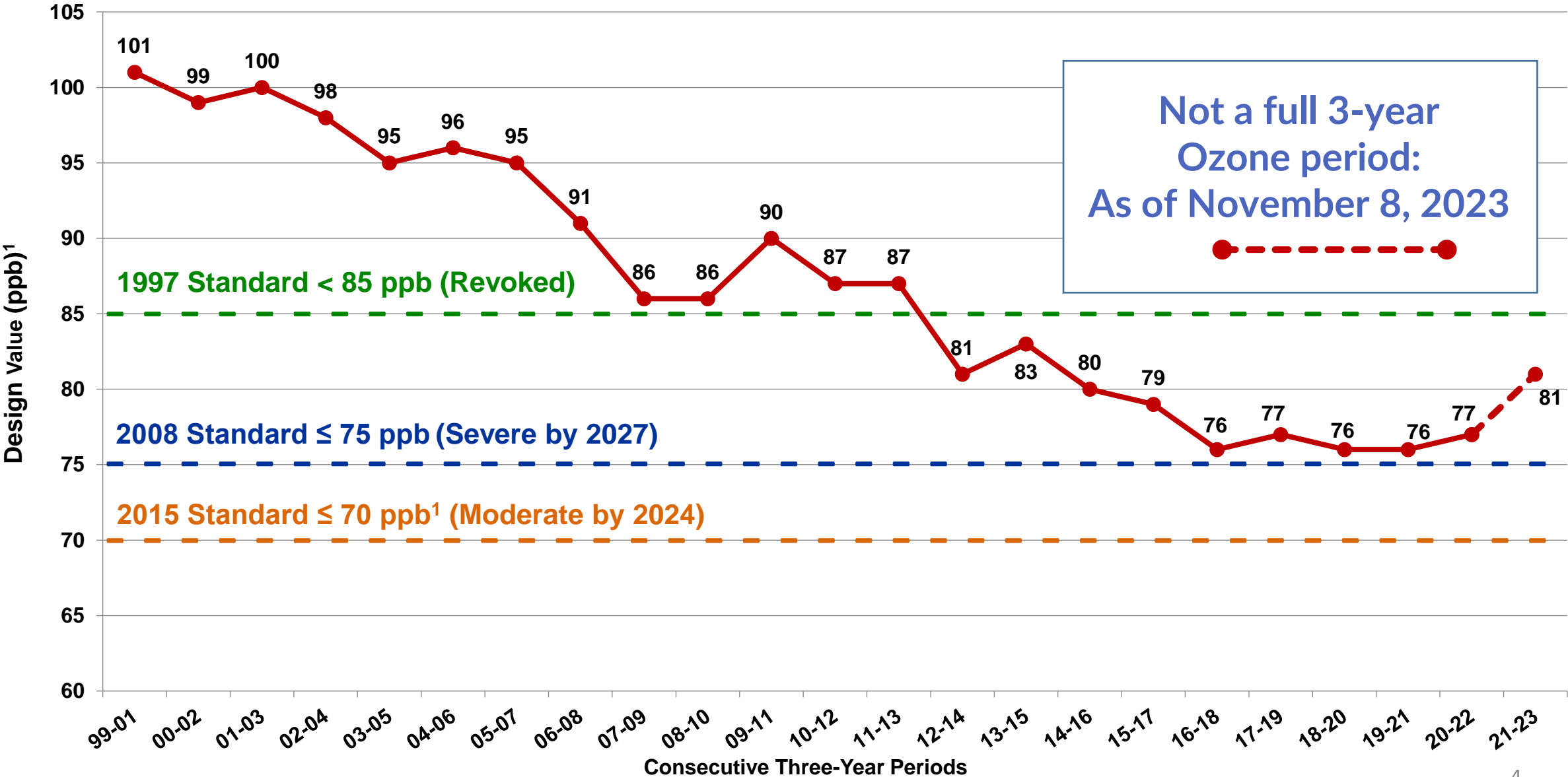
- Less than or equal to 75 ppb
 - Moderate, then Serious, now Severe
 - The nine counties, plus Wise County to make 10 counties



- **8-Hour 2015 Standard**

- Less than or equal to 70 ppb
 - Marginal, now Moderate, **moving to Serious**
 - Nine counties: excludes Rockwall county

Ozone Design Value Trends



¹Attainment Goal - According to the US EPA National Ambient Air Quality Standards, attainment is reached when, at each monitor, the *Design Value* (three-year average of the annual fourth-highest daily maximum eight-hour average ozone concentration) is equal to or less than 70 parts per billion (ppb).

Monitor Locations with Associated Fourth Highest Value

As of November 8, 2023

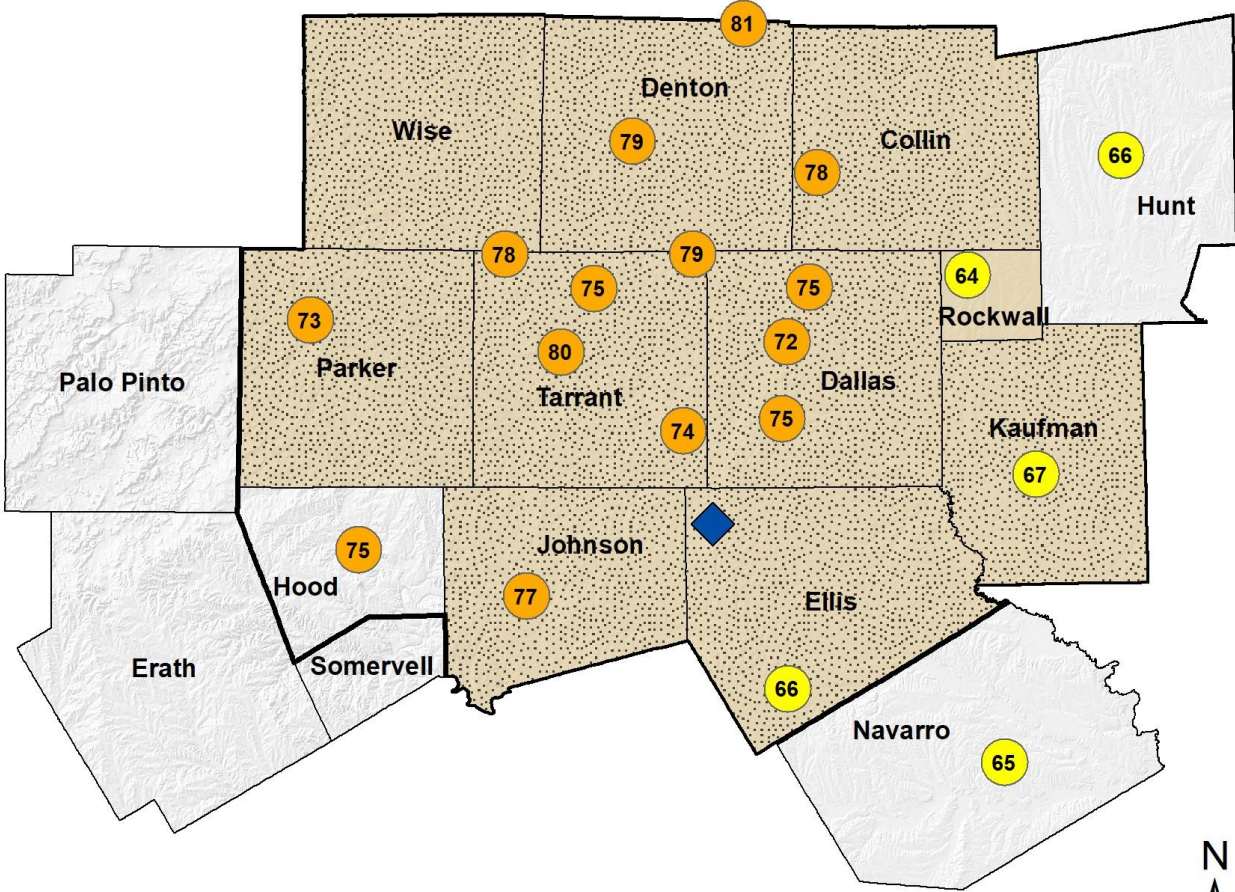
Legend

- Counties Designated Nonattainment Under 2015 8-Hour Ozone NAAQS
- Metropolitan Planning Area
- Counties Designated Nonattainment Under 2008 8-Hour Ozone NAAQS

2021 - 2023 Design Value (ppb)

- Ozone Monitors: 56-70 ppb
- Ozone Monitors: 71-85 ppb
- Temporarily Out of Service

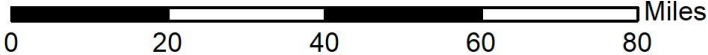
Colors represent Air Quality Index Breakpoints



Prevailing Wind Direction During Summer Ozone Season



North Central Texas Council of Governments

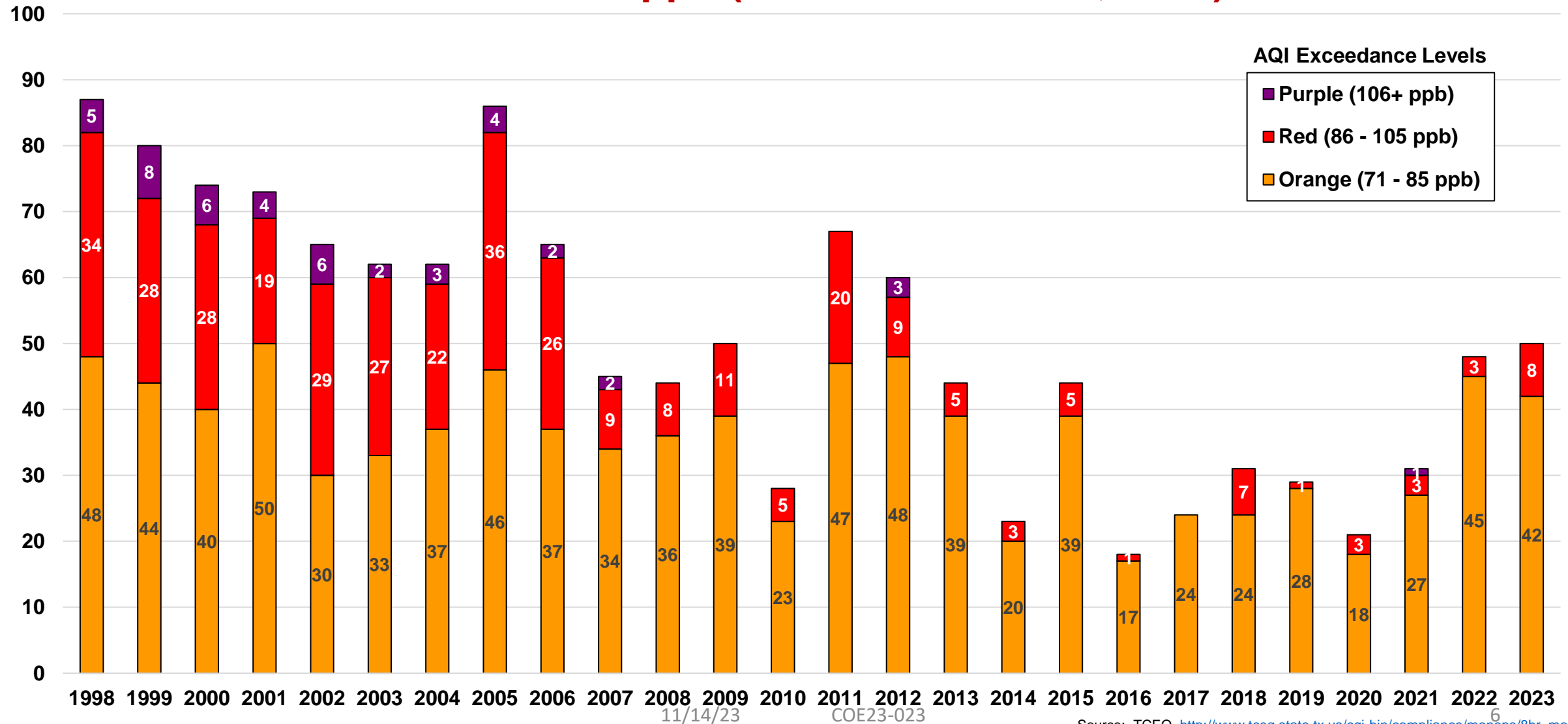


November 2023



8-Hour Ozone National Ambient Air Quality Standards - Exceedance Trends

Based on ≤ 70 ppb (As of November 8, 2023)



Exceedance Level indicates daily maximum eight-hour average ozone concentration.
Exceedance Levels are based on Air Quality Index (AQI) thresholds established by the EPA for the revised ozone standard of 70 ppb.

Source: TCEQ, http://www.tceq.state.tx.us/cgi-bin/compliance/monops/8hr_monthly.pl
ppb = parts per billion NAAQS = National Ambient Air Quality Standards

Timeline and Milestones

2008 Ozone Standard (≤ 75 ppb)

Attainment Date:
No later than **July 20, 2027**

*Attainment will be based on
2024-2026 Ozone Monitor Data*

*Severe designation = Section
185 fees if unable to reach
attainment

EPA Ozone Classifications

Marginal
(3 years to attain)

Moderate
(6 years to attain)

Serious
(9 years to attain)

Severe
(15/17 years to attain)

Extreme
(20 years to attain)

2015 Ozone Standard (≤ 70 ppb)

Attainment Date:
No later than **August 3, 2024**

*Attainment will be based on
2021-2023 Ozone Monitor Data*

Preliminary Ozone Season
Monitor Value = 81ppb

Governor submitted voluntary
reclassification to EPA (10-12-2023)

TCEQ indicated assistance need
for emission reduction strategies



(Future) Major Source Fees for Failure to Attain

**“Section 185” Fee Program For Major Stationary Sources Of NO_x And VOC
Clean Air Act Requirement Due To Reclassification From “Serious” To “Severe”
Plan Under Development By TCEQ To Propose To EPA
Attainment Required By End Of 2026 To Meet Severe Attainment Date
Design Value Based On 2024-2026 Regional Monitor Data**

**If Unable To Reach Attainment
Per Ton Penalty Fee As Soon As 2028
Fees Collected Annually Until Attainment Of 2008 Ozone Standard
Implemented By TCEQ
Sources Such As Power Plants And Cement Plants Particularly Implicated
Anticipated Fee For DFW ~ \$45 Million**



2021 Major Point Sources - Where, Who, Magnitude

DFW 10-County Nonattainment Area Major Point Sources: Nitrogen Oxides (NOX)						
County	Number of Major Point Source Facilities				Emission Totals (TPY)	Total Percent of 10-County Major Source Point Emissions
	Cement, Hydraulic (Kilns)	Electric Services (EGUs)	Crude Petroleum & Nat. Gas	Other (82 Source Types)		
Collin	-	1	-	9	79	1%
Dallas	-	2	-	66	831	8%
Denton	-	2	11	14	278	3%
Ellis	3	2	1	20	4,332	42%
Johnson	-	1	17	13	1,116	11%
Kaufman	-	1	-	5	1,165	11%
Parker	-	-	5	17	251	2%
Rockwall	-	-	-	3	13	0%
Tarrant	-	1	17	47	784	8%
Wise	-	1	51	7	1,485	14%
Total	3	11	102	201	10,333	100%₉

2023 Ozone Season (as of September 12, 2023)

Top 10 Monitors	4 th Highest Value for Season			Ozone Season Monitor Value -2023	State Air Quality Plan Model Value -2023
	2021	2022	2023		
Pilot Point	85	77	81	81	71
Fort Worth Northwest	76	80	84	80	70
Grapevine Fairway	75	78	84	79	72
Denton Airport South	81	78	78	79	70
Frisco	81	73	81	78	73
Eagle Mountain	76	77	79	77	72
Cleburne Airport	75	82	75	77	72
Keller	74	72	80	75	71
Dallas Executive	70	77	79	75	68 ¹⁰

NO_x and VOC Emissions Apportionment

DFW 10-County Nonattainment Area Nitrogen Oxides (NOx) (tons/day)						
Sources	Analysis Years				% Change from 2006 to 2023	% Change from 2023 to 2026
	2006	2017	2023	2026		
On-Road Mobile	284.27	130.77	72.30	60.20	-75%	-17%
Non-Road Mobile	98.06	45.54	34.38	32.03	-65%	-7%
Off-Road Mobile	32.92	25.24	23.59	24.59	-28%	4%
Point (All sources)	57.55	54.80	42.34	42.00	-26%	-1%
Oil & Gas (Production & Drill Rigs)	80.07	13.87	3.61	1.86	-95%	-48%
Area	29.02	26.55	31.33	32.17	8%	3%
Total	581.89	296.77	207.55	192.85	-64%	-7%
DFW 10-County Nonattainment Area Volatile Organic Compounds (VOC) (tons/day)						
Sources	Analysis Years				% Change from 2006 to 2023	% Change from 2023 to 2026
	2006	2017	2023	2026		
On-Road Mobile	116.50	64.91	38.74	33.27	-67%	-14%
Non-Road Mobile	64.69	34.01	42.68	44.12	-34%	3%
Off-Road Mobile	5.74	3.66	4.60	4.86	-20%	6%
Point (All sources)	50.44	47.38	23.53	23.56	-53%	0%
Oil & Gas (Production & Drill Rigs)	44.88	32.18	24.72	11.80	-45%	-52%
Area	290.46	236.70	265.77	275.73	-9%	4%
Total	572.71	418.84	400.04	393.34	-30%	-2%

Climate Pollution Reduction Grants (CPRG) Planning Grants Overview

North Central Texas Council of Governments (NCTCOG) received \$1 million in funds to develop a regional plan to improve air quality

- Environment and Development and Workforce Solutions of North Texas are assisting in development of CPRG deliverables

NCTCOG will collaborate with local governments and the public to develop the following Climate Pollution Reduction Grants (CPRG) Planning Grants deliverables:

- Priority Climate Action Plan (PCAP) – Due March 1, 2024
- Comprehensive Climate Action Plan (CCAP) – Due Summer 2025
- Status Report – Due Summer 2027

Deliverables will be incorporated into the NCTCOG's

Dallas-Fort Worth Air Quality Improvement Plan www.publicinput.com/nctcog-cprg



Climate Pollution Reduction Grants (CPRG) Implementation Grants Overview

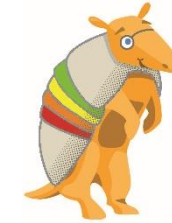
\$4.3 billion available for general competition

- Individual awards will be between \$2 million and \$500 million
- Environmental Protection Agency (EPA) anticipates awarding 30-115 grants under this announcement
- April 1, 2024 = Application(s) Deadline
- October 2024 = Anticipated Award of CPRG Implementation Grants

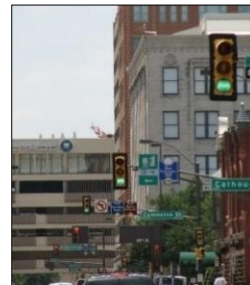
To be eligible for CPRG Implementation Grant funding, measure must be included in a PCAP



Sample of Mobile Source Air Quality Initiatives



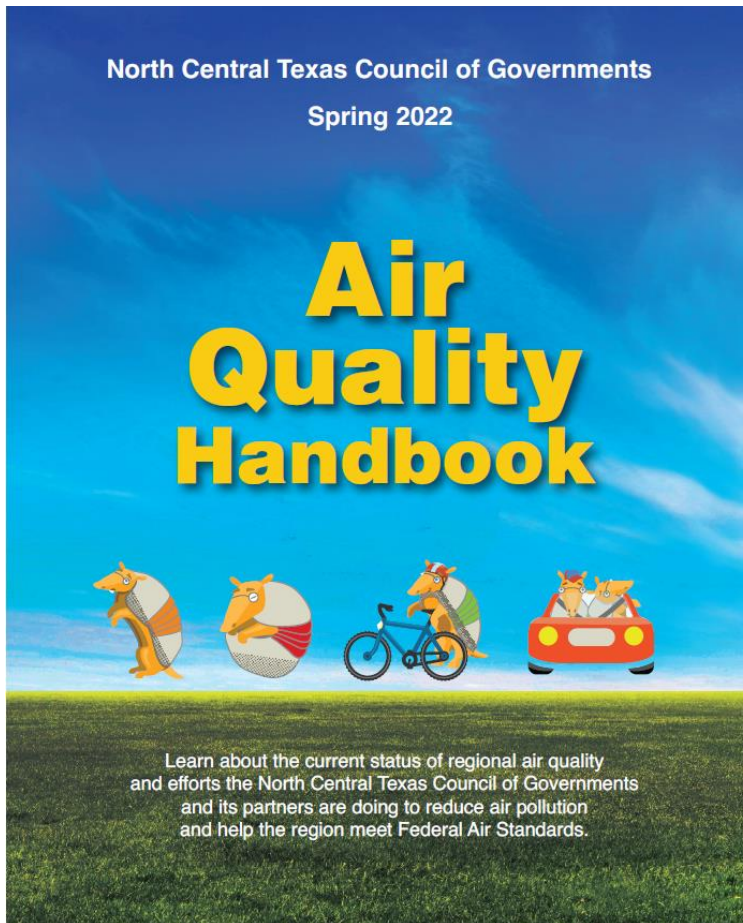
Rideshare. Record. Reward.



Air Quality Handbook

Multilingual

English



North Central Texas Council of Governments
Spring 2022

Air Quality Handbook

Learn about the current status of regional air quality and efforts the North Central Texas Council of Governments and its partners are doing to reduce air pollution and help the region meet Federal Air Standards.

https://nctcog.org/nctcg/media/Transportation/DocsMaps/Quality/Air/AQ2022printer_Spring.pdf 11/14/23

Spanish



North Central Texas Council of Governments
Primavera 2022

Manual de la Calidad del Aire

Conozca el estado actual de la calidad del aire regional y los esfuerzos que el North Central Texas Council of Governments y sus socios están haciendo para reducir la contaminación del aire y ayudar a la región cumplir con los Estándares Federales del Aire.

COE23-023 <https://www.nctcog.org/nctcg/media/Transportation/DocsMaps/Quality/Air/AQ2022SPANISH.pdf>

Vietnamese



Hội đồng Chính quyền Bắc Trung Texas Mùa
Xuân 2022

Sổ tay Chất lượng Không khí

Tìm hiểu về hiện trạng chất lượng không khí trong khu vực và những nỗ lực mà Hội đồng Chính quyền Bắc Trung Texas cùng các đối tác đang thực hiện để giảm ô nhiễm không khí và giúp khu vực đáp ứng các Tiêu chuẩn Không khí Liên bang.

<https://www.nctcog.org/getmedia/787b9fe9-94d9-4d76-9701-020876a06e61/AQHbkViet.pdf>

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<https://www.nctcog.org/trans/quality/air/ozone>

