

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
AGENDA ITEM REQUEST
for Approval of the 2024 Annual PM_{2.5} NAAQS State
Designations

AGENDA REQUESTED: December 18, 2024

DATE OF REQUEST: November 26, 2024

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

CAPTION: Docket No. 2024-1660-MIS. Consideration of the approval of the state designations for the 2024 primary annual fine particulate matter (PM_{2.5}) National Ambient Air Quality Standard (NAAQS) for submittal to the governor for consideration and transmittal to the U.S. Environmental Protection Agency (EPA). EPA will consider the state designations in making final designations and area boundary determinations for the 2024 annual PM_{2.5} NAAQS.

On February 7, 2024, EPA promulgated a revised primary annual NAAQS for PM_{2.5}, lowering the standard from 12.0 to 9.0 micrograms per cubic meter. The federal Clean Air Act requires states to submit their designations to EPA within one year of NAAQS promulgation, or by February 7, 2025. Staff recommends that all counties in the State of Texas with regulatory monitors with valid design values exceeding the revised NAAQS, based on certified 2021 through 2023 monitoring data, and not significantly impacted by international emissions and/or exceptional events, be designated nonattainment for the 2024 annual PM_{2.5} NAAQS. Staff recommends that all counties in the State of Texas that have regulatory monitors that would meet the revised NAAQS if not for international emissions and/or exceptional events be designated attainment. Staff recommends that all counties in the State of Texas that have regulatory monitors with complete data meeting the revised NAAQS be designated attainment. Additionally, staff recommends that all counties in the State of Texas that have regulatory monitors but are unlikely to generate valid design values based on available data be designated unclassifiable. Finally, staff recommends that all other counties in the state be designated as attainment/unclassifiable. (Alison Stokes, Terry Salem, Amanda Kraynok) (Project No. 2024-025-OTH-NR)

Richard C. Chism
Deputy Director

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Division Director

Jamie Zech
Agenda Coordinator

Copy to CCC Secretary? NO X YES

Texas Commission on Environmental Quality

Interoffice Memorandum

To: Commissioners **Date:** November 26, 2024

Thru: Laurie Gharis, Chief Clerk
Kelly Keel, Executive Director

From: Richard C. Chism, Director *RCC*
Office of Air

Docket No.: 2024-1660-MIS

Subject: Commission Approval for the 2024 Primary Annual Fine Particulate Matter (PM_{2.5})
National Ambient Air Quality Standard (NAAQS) State Designations

2024 Annual PM_{2.5} NAAQS State Designations
Non-Rule Project No. 2024-025-OTH-NR

Background and reason(s) for the state designations package:

On February 7, 2024, the U.S. Environmental Protection Agency (EPA) promulgated a revised primary annual NAAQS for PM_{2.5}, lowering the standard from 12.0 to 9.0 micrograms per cubic meter (µg/m³). Section 107(d) of the federal Clean Air Act (CAA) requires states to submit their designations to EPA within one year of NAAQS promulgation. By February 7, 2025, the governor of each state must submit designations of attainment, nonattainment, or unclassifiable under the 2024 primary annual PM_{2.5} NAAQS for all areas of the state. The rule establishing the 2024 annual PM_{2.5} NAAQS conveys EPA's intent for state designations to be based on annual PM_{2.5} design values calculated using certified monitoring data from 2021 through 2023 (89 *Federal Register* (FR) 16202). EPA anticipates that final designations will be signed in February 2026 based on annual PM_{2.5} design values calculated using certified monitoring data from 2022 through 2024.

A violation of the 2024 primary annual PM_{2.5} NAAQS at a monitor is a design value greater than 9.0 µg/m³. Using certified data, 10 counties with regulatory monitors have 2023 annual PM_{2.5} design values greater than 9.0 µg/m³: Bowie, Cameron, Dallas, Harris, Harrison, Hidalgo, Kleberg, Tarrant, Travis, and Webb. Montgomery County has an invalid 2023 annual PM_{2.5} design value greater than the 9.0 µg/m³ standard, however, it may generate a valid 2024 annual PM_{2.5} design value greater than the standard if enough valid data are collected.

Scope of state designations package:

The recommendation from the commission, along with supporting documentation, will be provided to the governor with information sufficient to make designations for all counties in Texas to EPA by February 7, 2025. EPA will consider the governor's designations in making its own designations.

A.) Summary of what the state designations package will do:

Staff's recommendation to the governor is for counties with regulatory monitors with valid 2023 annual PM_{2.5} design values measuring over the 2024 PM_{2.5} NAAQS of 9.0 µg/m³ and not significantly impacted by international emissions and/or exceptional events be designated nonattainment. Staff recommends that the following counties be designated nonattainment for the 2024 annual PM_{2.5} NAAQS: Bowie, Dallas, Harris, and Tarrant.

Staff recommends that all counties in the State of Texas that have regulatory monitors that would meet the 2024 annual PM_{2.5} NAAQS if not for international emissions and/or exceptional events be

Re: Docket No. 2024-1660-MIS

designated attainment. Staff recommends that the following counties be designated attainment for the 2024 annual PM_{2.5} NAAQS: Cameron, Harrison, Hidalgo, Kleberg¹, Travis², and Webb.

Staff recommends that all counties in Texas that have regulatory monitors meeting the 2024 annual PM_{2.5} NAAQS of 9.0 µg/m³, based on 2023 annual PM_{2.5} design value be designated attainment. Staff recommends that the following counties be designated as attainment: Atascosa, Bell, Bexar, Brazos, Denton, Ector, El Paso, Galveston, Jefferson, Lubbock, Maverick, Nueces, Orange, and Potter.

Staff recommends that all counties in Texas that have regulatory monitors but are unable to generate valid 2023 annual PM_{2.5} design values be designated unclassifiable. Staff recommends that the following counties be designated as unclassifiable: Brazoria, Brewster, Ellis, Kaufman, Montgomery, and Navarro. Finally, staff recommends that the remaining counties in the state be designated attainment/unclassifiable.

The following attachments are provided in support of TCEQ's recommendation:

- Attachment A: State of Texas 2024 Primary Annual Fine Particulate Matter (PM_{2.5}) National Ambient Air Quality Standard (NAAQS) State Designations;
- Attachment B: Certified 2023 Annual Fine Particulate Matter (PM_{2.5}) Design Values for Regulatory Monitors in the State of Texas; and
- Attachment C: Technical Supplement.

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

Section 107(d) of the FCAA requires states to submit their designations to EPA within one year of NAAQS promulgation. By February 7, 2025, the governor of each state must submit designations of attainment, nonattainment, or unclassifiable under the 2024 primary annual PM_{2.5} NAAQS for all areas of the state. The rule for the 2024 PM_{2.5} NAAQS indicates that EPA will rely on monitoring data to identify areas to be designated nonattainment due to violation of the standard. EPA does not intend states to conduct or use modeling in unmonitored areas to determine whether an area is violating the primary annual PM_{2.5} NAAQS for purposes of submitting state designations. EPA addressed designation issues, including guidelines for setting nonattainment area boundaries, in its *Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard* memo (2024 PM_{2.5} NAAQS Designations Memo) issued on February 7, 2024.

The state designations are based on certified 2021 through 2023 monitoring data. Prior to EPA's final designations, to be promulgated by February 6, 2026, data from 2024 are required to be submitted and certified by TCEQ. EPA's designation decisions will be based on air quality data from the years 2022 through 2024.

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

¹ TCEQ continues to evaluate if the National Seashore monitor in Kleberg County has days in 2021 through 2023 that were impacted by exceptional events.

² Travis County has two monitors exceeding the 2024 annual PM_{2.5} standard. The Austin Webberville monitor is impacted by exceptional events. TCEQ will identify the Austin North Interstate 35 monitor as not suitable for comparison against the annual PM_{2.5} NAAQS due to the monitor not being representative of area-wide air quality. The identification will be made in the Annual Monitoring Network Plan and must be approved by EPA.

Re: Docket No. 2024-1660-MIS

Statutory authority:

The authority to propose and adopt the implementation plan and similar documents is derived from Texas Health and Safety Code, Texas Clean Air Act (TCAA), §382.002, which provides that the policy and purpose of the TCAA is to safeguard the state's air resources from pollution; TCAA §382.011, which authorizes the commission to control the quality of the state's air; and §382.012, which authorizes the commission to prepare and develop a general, comprehensive plan for the control of the state's air.

Effect on the:

A.) Regulated community:

Certain industries would eventually be affected if they are located in an area that is designated nonattainment by EPA. Regulated entities in areas designated nonattainment by EPA would be subject to regulatory requirements, some for the first time. These would include additional permitting requirements, general conformity, transportation conformity, and requirements to reduce emissions within the nonattainment area.

B.) Public:

These state designations have no immediate effect on the public. Nonattainment designations could cause the public to be subject to increased regulatory requirements, which could have increased financial or operational burdens, but may also result in reduced exposure to this pollutant.

C.) Agency programs:

Nonattainment area designations will require additional work from agency programs and functions associated with state implementation plan development and implementation, including rulemaking, program implementation, monitoring, permitting, and enforcement.

Stakeholder meetings:

Staff held four public information meetings regarding the 2024 annual PM_{2.5} NAAQS and the designations process in June 2024. These meetings were open to the public, and Spanish language interpretation services were available. TCEQ provided information regarding potential designations for public review, and an informal public comment period was held from July 30, 2024, through August 30, 2024.

Public Involvement Plan

Yes.

Alternative Language Requirements

Yes. Spanish.

Public comment:

TCEQ's potential designations were provided for public review and informal comment through web solicitation and GovDelivery notification. The informal public comment period opened on July 30, 2024, and closed on August 30, 2024. TCEQ received informal written comments on the potential designations from: Air Alliance Houston, American Electric Power, Austin City Council, Coalition for Responsible Environmental Aggregate Mining (CREAM), Earthjustice, Harris County Attorney's Office, Midlothian Breathe, Move the Gas Plant, Ramboll, Reconnect Austin, Rethink35, Save Our Springs Alliance, Sierra Club Lone Star Chapter, Texas Department of Transportation (TxDOT), Travis County Commissioners Court, and 140 individuals.

Re: Docket No. 2024-1660-MIS

The Austin City Council, Reconnect Austin, Rethink35, and Save Our Springs Alliance commented on the importance of including all monitoring data when determining the attainment status of Travis County. In anticipation of a nonattainment designation for Travis County, the Travis County Commissioners Court requested support from the commission in efforts to meet the standard. Move the Gas Plant commented that future emissions from the proposed Sandow Lakes Energy Plant in Lee County could impact the attainment status of the Austin area. Individuals were generally concerned with the Interstate 35 expansion project and the health impacts of PM_{2.5}.

American Electric Power (AEP) commented that the AEP Pirkey Power Plant is no longer in operation. Midlothian Breathe commented that Ellis County should be designated nonattainment rather than unclassifiable due to the concentration of specific point sources located within the county. The Harris County Attorney's Office commented that Brazoria and Montgomery Counties should be monitored and evaluated for contributions to nonattainment in Harris County. Ramboll submitted data and studies that could be used for possible exceptional event demonstrations and boundary determinations for both Harris and Kleberg Counties. The Sierra Club Lone Star Chapter requested an improved monitoring network to identify counties contributing to nonattainment. Earthjustice, CREAM, and Air Alliance Houston, asked TCEQ to use modeling to analyze counties with design values under the 2024 annual PM_{2.5} NAAQS rather than list counties as unclassifiable due to lack of monitoring data. Earthjustice, CREAM, Air Alliance Houston, and Harris County Attorney's Office asked for a more robust public involvement process.

TxDOT stated that nonattainment designations will impact transportation projects for decades and requested meticulous scrutiny during the evaluation process. TxDOT commented that TCEQ should not consider data from near-road monitors and that exceptional events demonstrations should be considered in the recommendation to the commission.

Potential controversial concerns and legislative interest:

The 2016 Exceptional Events Rule (codified at 40 CFR Sections 50.1, 50.14 and 51.930) allows for data to be flagged, and where appropriate, excluded from calculations in determining whether an area has attained the standard. The data flagged as "exceptional" must have been affected by an exceptional event, which is defined as an event that affects air quality, is not reasonably controllable or preventable, is an event caused by human activity that is unlikely to recur at a particular location or a natural event, and an exceptional event demonstration requires concurrence from EPA. Initial notifications of intent to submit exceptional event demonstrations, using the applicable data years of 2021 through 2023 for the purpose of initial area designations, are required by no later than January 1, 2025, with submission of the exceptional event demonstration due no later than February 7, 2025. If state designations rely on exclusion of days in 2021 due to exceptional event impacts, those dates should be identified. However, exceptional event flagging and demonstration submissions are not required for these 2021 days.

Exceptional event demonstrations are not required, and not every monitor will have policy-relevant days for which to pursue exceptional event demonstrations. EPA makes the final decision on whether to exclude exceptional event days in its final designations, which may deviate from state designations. For the 2024 annual PM_{2.5} NAAQS designations, staff identified days in 2021, 2022, and 2023 impacted by exceptional events that, if excluded, will make the 2023 annual PM_{2.5} design value at the Karnack monitor in Harrison County and the Austin Webberville monitor in Travis County meet the 2024 annual PM_{2.5} standard. Staff will prepare and submit to EPA, for consideration and concurrence, the exceptional events demonstration in support of an attainment designation for Harrison County and Travis County. TCEQ continues to evaluate if the National Seashore monitor in Kleberg County has days in 2021 through 2023 that were impacted by exceptional events.

Re: Docket No. 2024-1660-MIS

Section 107(d) of the FCAA requires EPA to determine the boundaries of nonattainment areas when making designations. EPA recommends a five-factor process for states to evaluate nonattainment area boundaries in its 2024 Annual PM_{2.5} NAAQS Designations Memo: air quality data, emissions and emissions-related data, meteorology, geography/topography, and jurisdictional boundaries. This is consistent with the method used for the 1997, 2006, and 2012 PM_{2.5} NAAQS designations. The process of determining boundaries may be a contentious issue. Upon notification by EPA of its intended nonattainment area designations and associated boundaries in the 120-day letters to the states, staff will consider EPA's intended designations and may prepare an analysis of relevant alternative boundary considerations for the commission and governor to consider and submit to EPA.

Will this state designations package affect any current policies or require development of new policies?

No.

What are the consequences if this state designations package does not go forward? Are there alternatives to the state designations package?

If the package did not move forward, then the governor's office would not have TCEQ's recommendation to consider for state designations submittal to EPA. The governor could choose to not submit state designations, however, not submitting state designations could lead to EPA designations of Texas counties under the new standard without state input. However, EPA is expected to publish a *Federal Register* notice regarding proposed designations at the time that 120-day letters are issued to states providing an additional opportunity for Texas to comment before EPA finalizes designations under the 2024 annual PM_{2.5} NAAQS.

Key points in the designations schedule:

Anticipated agenda date: December 18, 2024
TCEQ recommendation to governor's office: December 30, 2024
State Designations due to EPA: February 7, 2025
EPA sends 120-day Letters: October 9, 2025
Final designations promulgated by EPA: February 7, 2026

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ATTACHMENT A

**STATE OF TEXAS
2024 PRIMARY ANNUAL FINE PARTICULATE MATTER (PM_{2.5}) NATIONAL AMBIENT
AIR QUALITY STANDARD (NAAQS) STATE DESIGNATIONS**

The following table identifies Texas counties and the State of Texas' designations or the 2024 annual PM_{2.5} NAAQS.

Designation	Counties
Nonattainment	Bowie Dallas Harris Tarrant
Attainment	Atascosa Bell Bexar Brazos Cameron ¹ Denton Ector El Paso Galveston Harrison ² Hidalgo ¹ Jefferson Kleberg ¹ Lubbock Maverick Nueces Orange Potter Travis ^{2,3} Webb ¹
Unclassifiable ⁴	Brazoria Brewster Ellis Kaufman Montgomery Navarro
Attainment/Unclassifiable	Remainder of state

¹Attainment if not for international emissions. See Attachment C: *Technical Supplement* for details.

²Attainment if not for exceptional events. See details on the following page.

³TCEQ will identify the Austin North Interstate 35 monitor as not suitable for comparison against the annual PM_{2.5} NAAQS due to the monitor not being representative of area-wide air quality. The identification will be made in the Annual Monitoring Network Plan and must be approved by EPA.

⁴Counties with monitored invalid 2023 annual PM_{2.5} design values.

ATTACHMENT A

Texas' designation of attainment for Harrison County and Travis County is based on TCEQ's assessment of exceptional events for 2021, 2022, and 2023. TCEQ submitted initial notification for 2022 and 2023 on November 12, 2024. TCEQ continues to evaluate if the National Seashore monitor in Kleberg County has days in 2021 through 2023 that were impacted by exceptional events.

Date	EPA Site Number	Type of Event	Exceedance Concentration ($\mu\text{g}/\text{m}^3$)
April 4, 2021	482030002	Prescribed Fire	69.7
January 21, 2022	482030002	Prescribed Fire	98.2
January 22, 2022	482030002	Prescribed Fire	47.9
January 23, 2022	482030002	Prescribed Fire	33.0
June 13, 2022	482030002	African Dust	39.0
June 14, 2022	482030002	African Dust	33.4
June 15, 2022	482030002	African Dust	27.1
June 16, 2022	482030002	African Dust	27.0
July 17, 2022	482030002	Prescribed Fire, African Dust	26.0
July 18, 2022	482030002	Prescribed Fire, African Dust	29.5
February 27, 2023	482030002	Prescribed Fire, High Winds	26.6
March 15, 2023	482030002	Prescribed Fire	39.7
March 27, 2021	484530021	Fire - Mexico/Central America	25.0
April 9, 2021	484530021	Fire - Mexico/Central America	29.0
September 4, 2021	484530021	African Dust	26.1
May 20, 2022	484530021	Prescribed Fire, Fire - Mexico/Central America	27.8
June 13, 2022	484530021	African Dust	30.8
June 16, 2022	484530021	African Dust	34.8
June 17, 2022	484530021	African Dust	25.5
July 17, 2022	484530021	African Dust	29.1
January 1, 2023	484530021	High Winds, Fireworks	44.1
March 2, 2023	484530021	High Winds, Prescribed Fire, Fire - Mexico/Central America	32.9
June 13, 2023	484530021	Fire - Mexico/Central America	31.5
June 14, 2023	484530021	Fire - Mexico/Central America	27.6
June 15, 2023	484530021	Fire - Mexico/Central America	27.4

TCEQ contends that the 2021 exceedance days, March 27, 2021, April 9, 2021, September 4, 2021, and April 4, 2021, at the Austin Webberville (EPA Site Number 484530021) and Karnack (EPA Site Number 482030002) monitors were likely influenced by fires from Mexico/Central America, Saharan dust, and prescribed fires, to a degree that might otherwise trigger regulatory significance. However, TCEQ has not submitted formal exceptional events demonstrations for such events because TCEQ does not anticipate that events in 2021 will have regulatory significance, as described in EPA's memorandum, *Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard*, issued on February 7, 2024. In the unlikely circumstance that events in 2021 are determined to have regulatory significance for final designations decisions for the 2024 revised primary annual $\text{PM}_{2.5}$ NAAQS, TCEQ will work with EPA to provide additional information consistent with the requirements in EPA's *Exceptional Events Rule*.

ATTACHMENT B

CERTIFIED 2023 ANNUAL FINE PARTICULATE MATTER (PM_{2.5}) DESIGN VALUES FOR REGULATORY MONITORS IN THE STATE OF TEXAS

The Texas Commission on Environmental Quality calculated the 2023 annual PM_{2.5} design values for Texas counties with regulatory monitors, as presented in the table below, in support of state designations for the 2024 primary annual PM_{2.5} National Ambient Air Quality Standard (NAAQS). The 2023 annual PM_{2.5} design values were calculated with certified 2021 through 2023 monitoring data.

2023 Annual PM_{2.5} Design Values by County

County	Certified 2023 Annual PM _{2.5} Design Value (micrograms per cubic meter)
Harris	12.5
Cameron	10.9
Bowie	10.3
Dallas	9.9
Kleberg	9.9*
Webb	9.7
Hidalgo	9.6
Tarrant	9.6
Travis	9.6**
Harrison	9.5***
Atascosa	9.0
El Paso	9.0
Bexar	8.9
Jefferson	8.8
Nueces	8.4
Galveston	8.3
Orange	8.3
Brazos	7.9
Maverick	7.9
Denton	7.7
Bell	7.3

ATTACHMENT B

County	Certified 2023 Annual PM _{2.5} Design Value (micrograms per cubic meter)
Ector	7.3
Potter	6.0
Lubbock	5.7

* TCEQ continues to evaluate if the National Seashore monitor in Kleberg County has days in 2021 through 2023 that were impacted by exceptional events.

** Travis County has two monitors exceeding the 2024 annual PM_{2.5} standard. For the Austin Webberville monitor, with the exclusion of days impacted by exceptional events in 2021, 2022, and 2023, the 2023 design value is expected to be 9.0 micrograms per cubic meter. TCEQ will identify the Austin North Interstate 35 monitor as not suitable for comparison against the annual PM_{2.5} NAAQS due to the monitor not being representative of area-wide air quality. The identification will be made in the Annual Monitoring Network Plan and must be approved by EPA.

*** With the exclusion of days impacted by exceptional events in 2021, 2022, and 2023, the 2023 design value is expected to be 9.0 micrograms per cubic meter.

Source: U.S. Environmental Protection Agency Air Quality System database
(<https://www.epa.gov/aqs>)

ATTACHMENT C: TECHNICAL SUPPLEMENT

EXTERNAL SOURCES OF FINE PARTICULATE MATTER (PM_{2.5}) POLLUTION

Historically, PM_{2.5} in Texas is impacted by long-range transport from natural and anthropogenic emissions from outside Texas and the United States. These emissions include natural events such as wildfires, Saharan dust, and dust from large, intense regional dust storms in the West Texas-New Mexico-Northern Mexico area. Long-range transport from other types of events also impact the Houston area, including smoke from controlled burns and haze and smoke accumulated from man-made emissions in the United States and Canada (also known as continental haze).

Wildfires and agricultural burns in Southern Mexico and Central America are important seasonal sources of international emissions impacting PM_{2.5} levels in Texas. These fires primarily occur from January through May during the dry season in Southern Mexico and Central America. The analysis below shows that PM_{2.5} levels are higher along the Texas Gulf Coast and South Texas during this time of the year, when transport frequently occurs from Southern Mexico.

Another well-known source of PM_{2.5} pollution in Texas is dust transported from the Saharan Desert in Africa. This phenomenon frequently occurs during the summer months. The Texas Commission on Environmental Quality (TCEQ) has documented this transport in multiple exceptional event demonstrations with which the U.S. Environmental Protection Agency (EPA) has concurred. Evidence of this transport is also frequently seen in satellite imagery. For the above reasons, EPA should consider the impact of long-range transport and designate counties with monitors that would meet the 2024 annual PM_{2.5} National Ambient Air Quality Standards (NAAQS) if not for significant impact from international emissions and/or exceptional events as attainment. Further, the EPA should take into consideration the increased background due to long-range transport on all Texas monitors when finalizing boundaries for any nonattainment areas for the 2024 annual PM_{2.5} NAAQS.

TRAJECTORY ANALYSIS FOR EXTERNAL TRANSPORT TO TEXAS MONITORS

To demonstrate the importance of long-range transport for Texas PM_{2.5} levels, TCEQ analyzed four years (2019 through 2022) of daily HYSPLIT back trajectories at several monitoring sites in Texas. The daily trajectories were generated every day at 2:00 P.M. (central or daylight time) with a backward length of 48 hours. For South Texas, with its low, flat landscape, trajectories terminated at 100 meters above ground level (AGL) and trajectories for other parts of Texas terminated at 200 meters AGL. The daily trajectories for each monitoring site were paired with daily PM_{2.5} averages and analyzed using hierarchical cluster analysis. The cluster analysis algorithm assigns each daily trajectory into one of several groups where trajectories within each group follow similar paths while differences between trajectory groups are maximized. Cluster analysis allowed TCEQ to pair HYSPLIT trajectories with daily average PM_{2.5} values and gain insights regarding the contribution of various transport paths to PM_{2.5} pollution in Texas.

TCEQ's analysis focused on counties where a design value setting monitor had a valid 2023 annual PM_{2.5} design value above the 9.0 micrograms per cubic meter (µg/m³) 2024 annual PM_{2.5} NAAQS. Results of the analysis for each monitor and the corresponding state designation are presented below.

Counties in Attainment if not for International Emissions

Impacts of international emissions and transport from Mexico are especially pronounced in counties along the United States-Mexico border. In Cameron, Hidalgo, Kleberg, and Webb Counties, TCEQ's analysis showed that a significant percentage (upwards of 50%) of the trajectories were from the southerly and/or southeasterly direction, indicating significant

international impact. To further support the impact of international emissions in these counties, TCEQ is conducting year-long sampling studies with samples taken every three days. A Positive Matrix Factorization analysis will be performed using the data from these sampling studies to characterize the sources contributing to the PM_{2.5} concentrations at the monitors in these counties.

In Cameron County, the Isla Blanca State Park monitor was analyzed, and Figure 1: *Cameron County Trajectory Means* shows that 74% of daily trajectories track back towards a southeasterly direction. Figure 2: *Cameron County Cluster Frequency by Month* shows that daily PM_{2.5} values peak during the spring and summer months when the southeasterly trajectories are predominant.

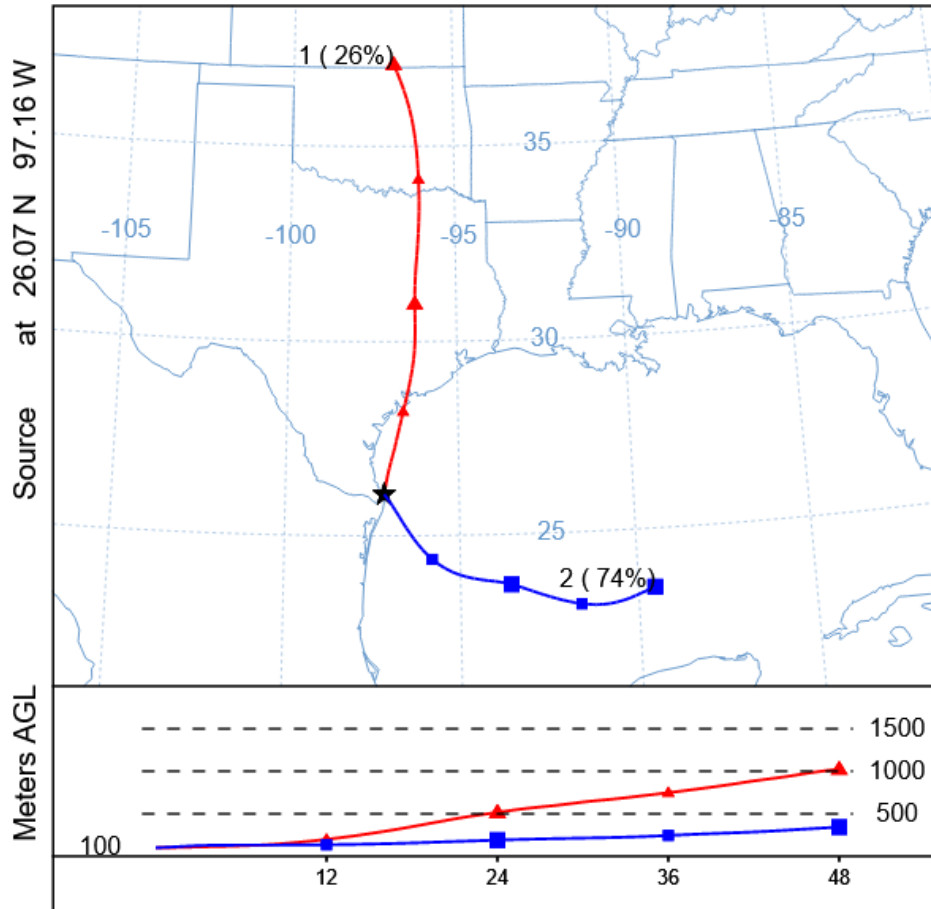


Figure 1: Cameron County Trajectory Means

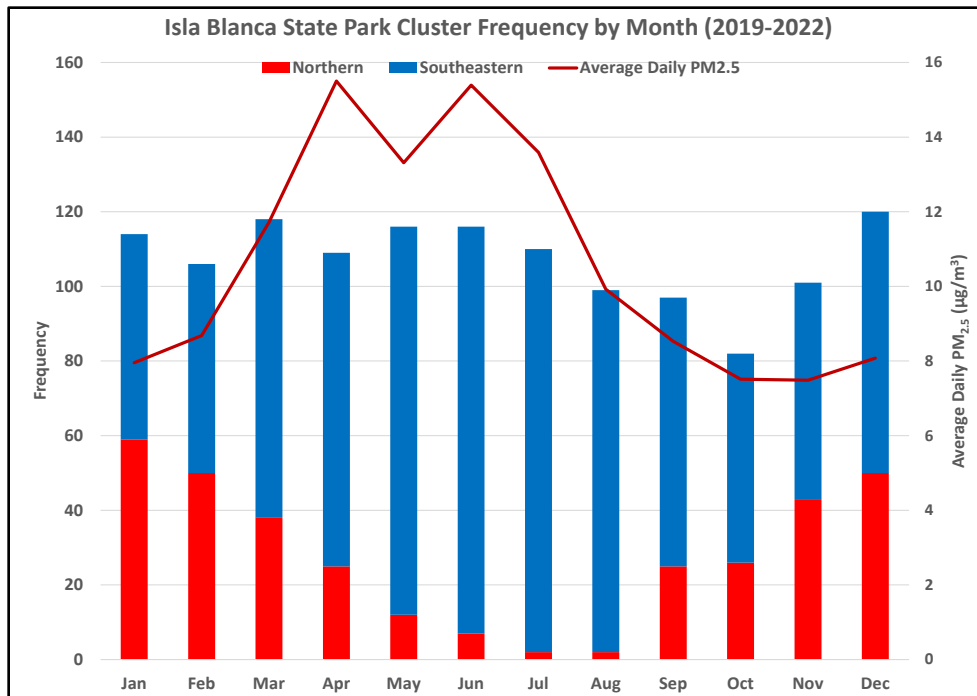


Figure 2: Cameron County Cluster Frequency by Month

In Hidalgo County, the Freddy Gonzalez monitoring site was analyzed. Figure 3: *Hidalgo County Trajectory Means* shows that, similar to Webb County, almost two-thirds (63%) of daily trajectories trace back to a southeasterly mean direction linked with transport from Southern Mexico and Northern Africa. Figure 4: *Hidalgo County Cluster Frequency by Month* shows that daily PM_{2.5} measurements are also higher during the spring and summer months when transport from the southeast predominates.

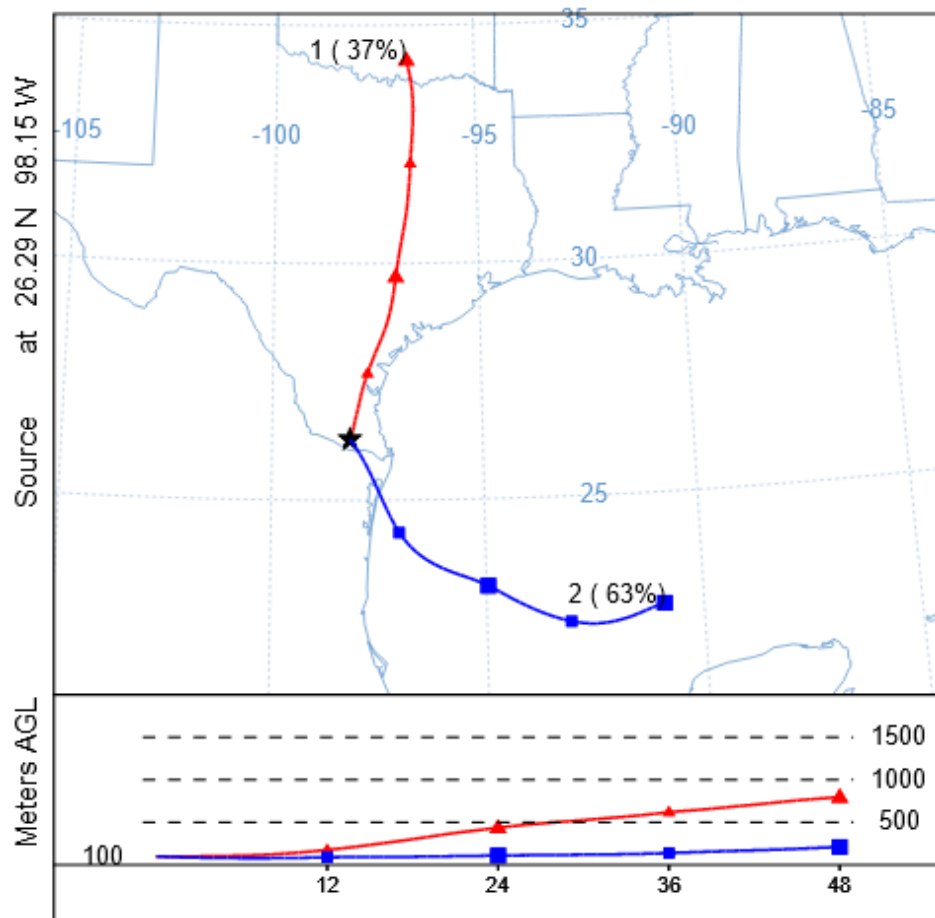


Figure 3: Hidalgo County Trajectory Means

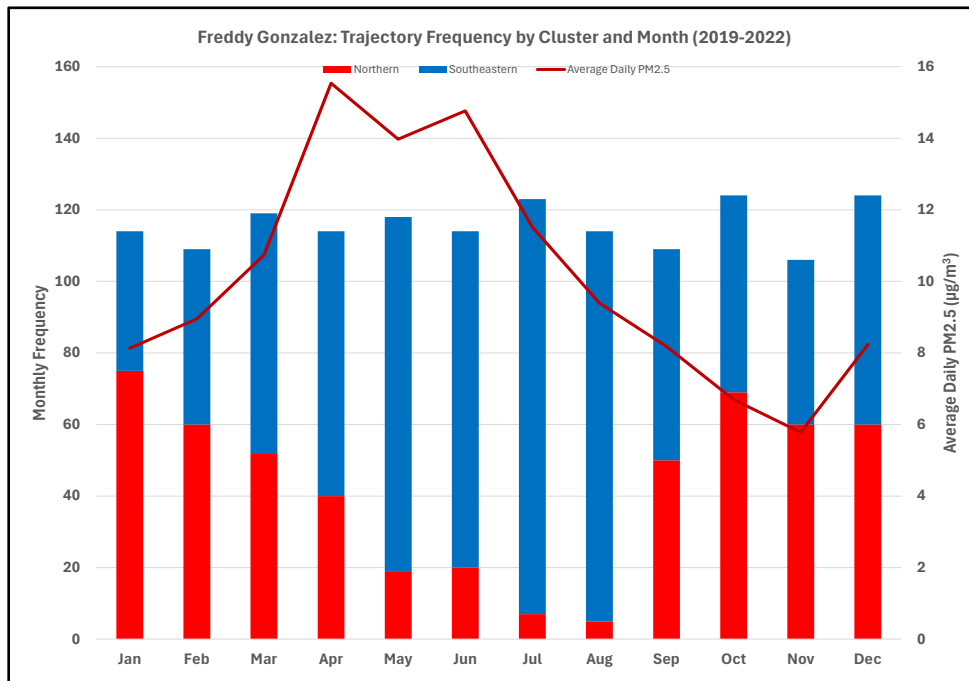


Figure 4: Hidalgo County Cluster Frequency by Month

The next monitoring site analyzed by TCEQ was the National Seashore monitor in Kleberg County. TCEQ deployed a non-NAAQS comparable PM_{2.5} monitor at the National Seashore site in October 2002. Located in Padre Island National Seashore southeast of the Corpus Christi city center, the site is ideally situated to measure the transport of PM_{2.5} levels coming off the Gulf of Mexico from Saharan dust and smoke from agricultural burning from Mexico and Central and South America. The non-NAAQS comparable monitor was upgraded to a PM_{2.5} FEM monitor in March 2018. There are no significant point sources in Kleberg County, with the county's 2020 point-source PM_{2.5} emissions totaling only 38.1 tons per year as opposed to the adjacent Nueces County (with the Corpus Christi city center) totaling 1,362.2 tons per year. It should also be noted that in the Corpus Christi area, all PM_{2.5} monitors have 2023 annual PM_{2.5} design values less than or equal to 9.0 µg/m³. Figure 5: *Location of National Seashore Monitor and Major Highways in Kleberg County* shows the unique location of the National Seashore monitor as well as the lack of major roadways in the county.

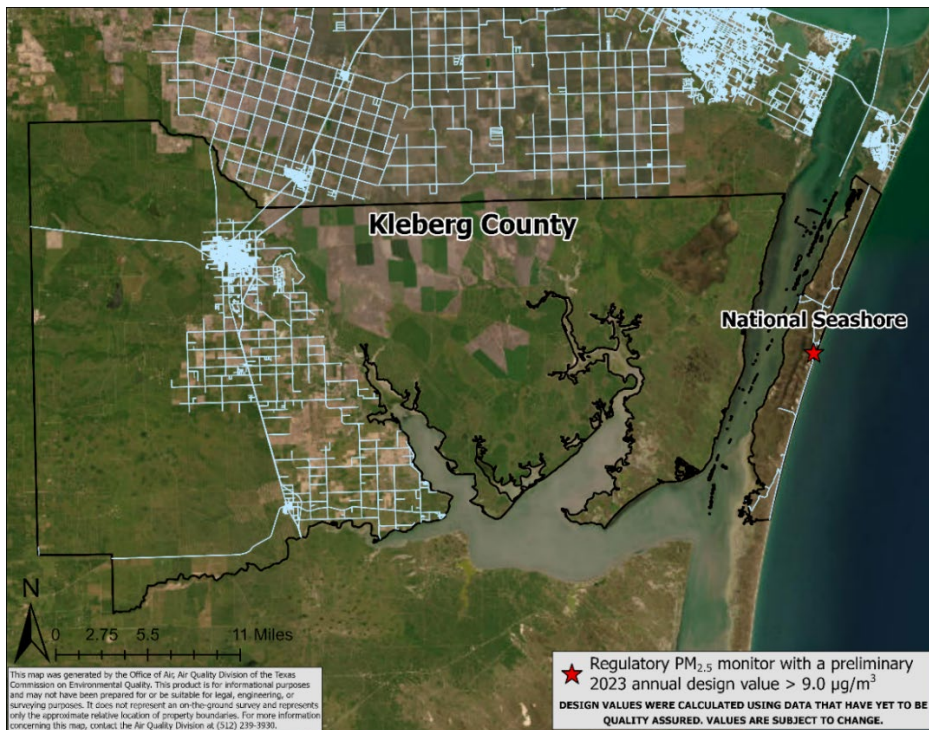


Figure 5: Location of National Seashore Monitor and Major Highways in Kleberg County

Figure 6: *Kleberg County Trajectory Cluster Means*, shows that almost 83% of daily back trajectories come from an easterly or southeasterly direction. Figure 7: *Kleberg County Cluster Frequency by Month* shows that daily PM_{2.5} averages peak during the spring and summer months when trajectories from the southeast and east comprise many trajectories. In addition to impacts from international emissions, it is likely, due to its location, that the National Seashore monitor is impacted by exceptional events. TCEQ is continuing to evaluate if the National Seashore monitor has days in 2021 through 2023 that were impacted by exceptional events and should be excluded from design value calculation.

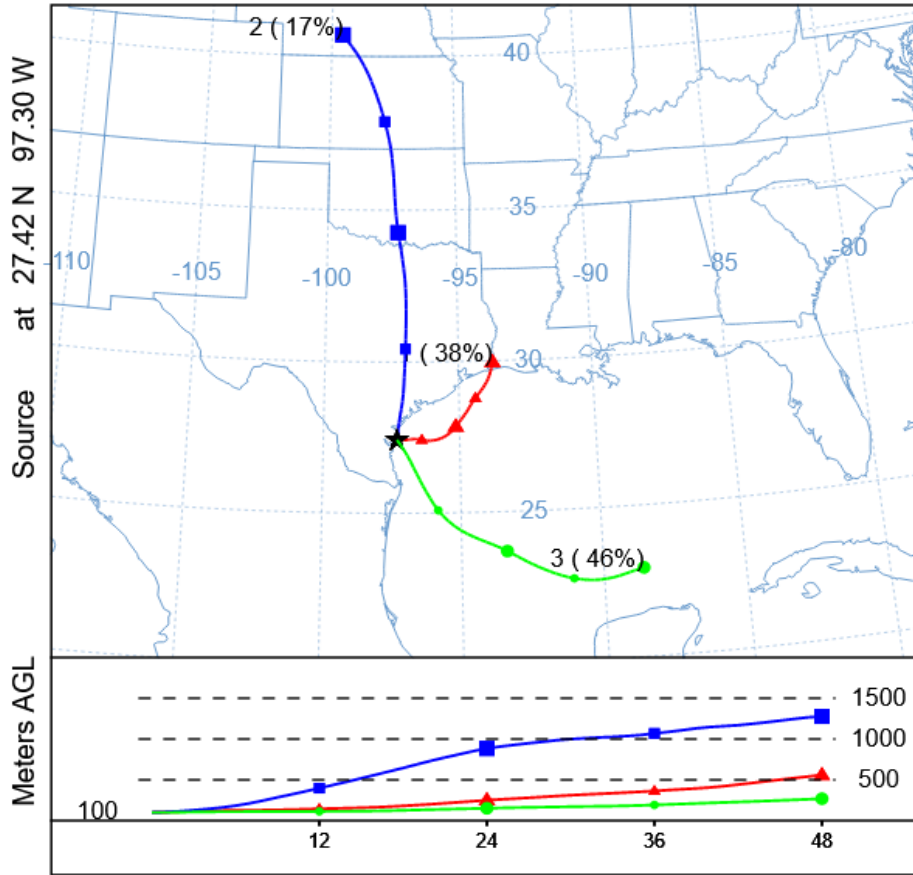


Figure 6: Kleberg County Trajectory Cluster Means

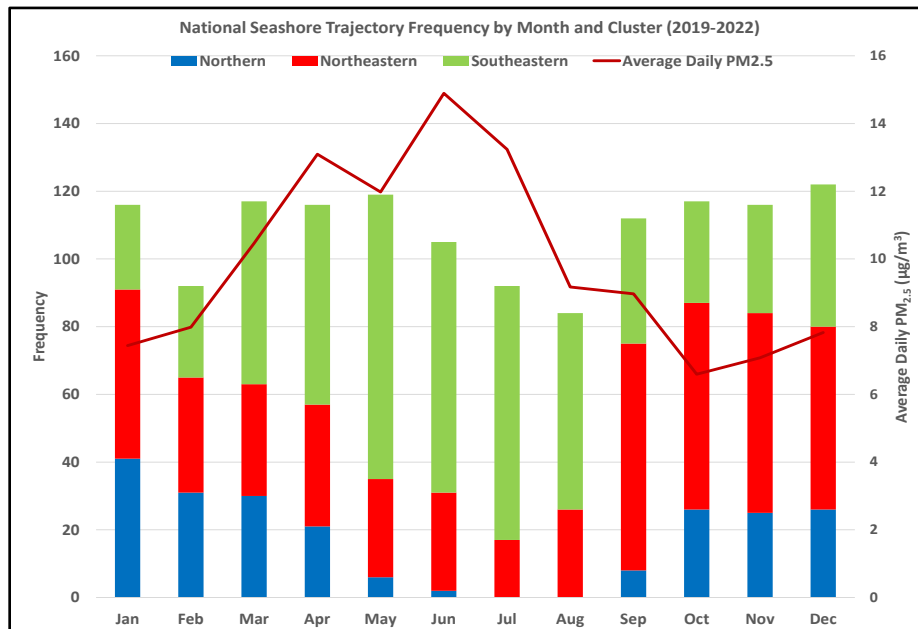


Figure 7: Kleberg County Cluster Frequency by Month

Figure 8: *Webb County Trajectory Means* shows that 78% of the trajectories from 2019 through 2022 are southeasterly trajectories linked to transport from Southern Mexico and Northern

Africa. Figure 9: *Webb County Trajectory Frequency by Month* shows that monthly $PM_{2.5}$ averages are highest in the spring and summer months when these southeasterly trajectories are especially prevalent.

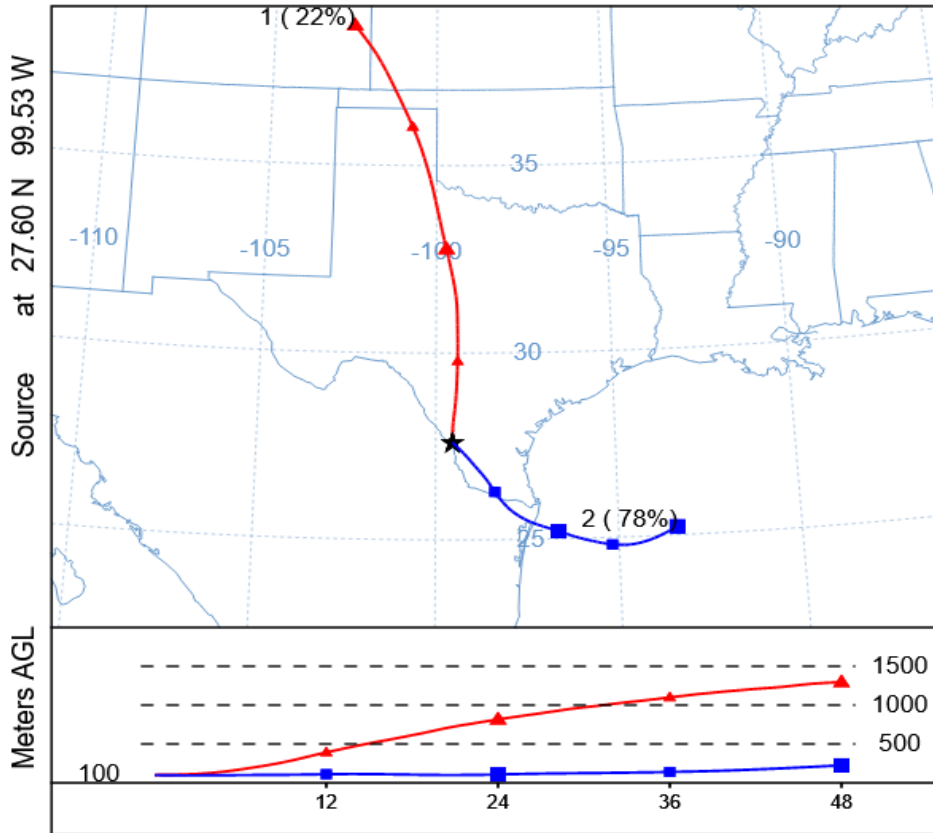


Figure 8: Webb County Trajectory Means

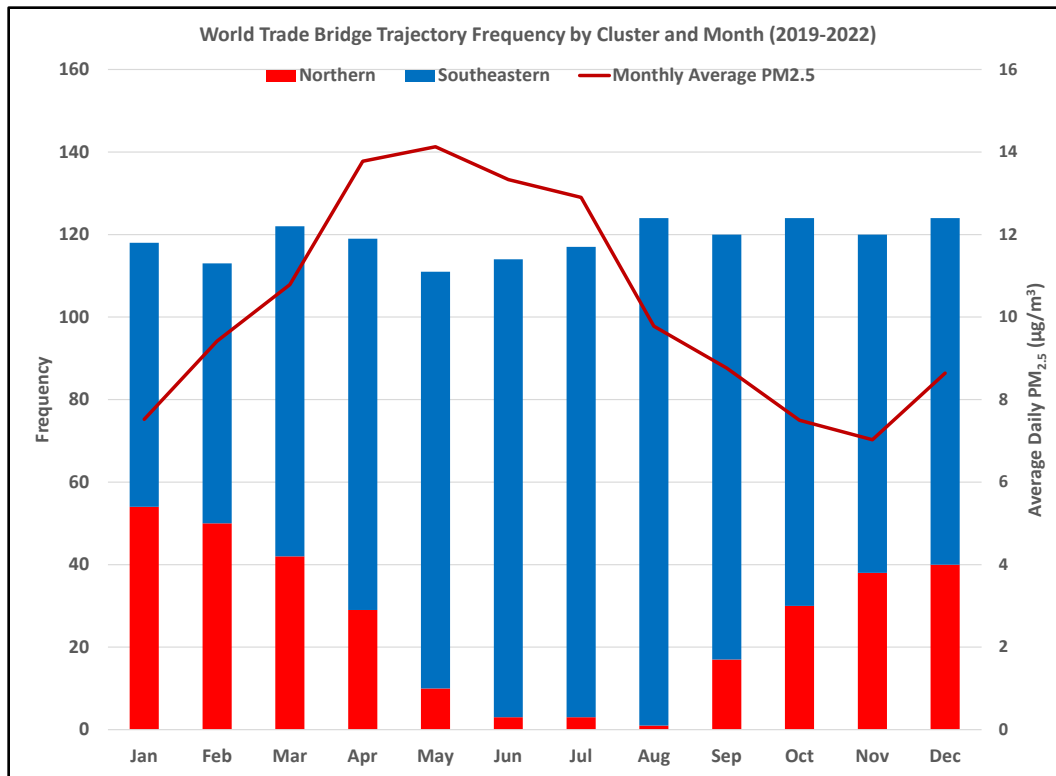


Figure 9: Webb County Trajectory Frequency by Month

The analysis presented above shows that high PM_{2.5} concentrations at the monitors in Cameron, Hidalgo, Kleberg, and Webb Counties are significantly influenced by international emissions and would be in attainment if not for international emissions.

Counties in Attainment if not for Exceptional Events

Two counties, Harrison and Travis, will have 2023 annual PM_{2.5} design values that would meet the 2024 annual PM_{2.5} NAAQS if days in 2021, 2022, and 2023 influenced by exceptional events are excluded from the design value calculation. TCEQ has identified these dates and will submit the required exceptional event demonstration to EPA by the February 7, 2025, deadline. Cluster analysis at these monitors also showed a high percentage of out-of-state transport impacting the PM_{2.5} concentrations. In addition to Harrison and Travis Counties, TCEQ continues to evaluate if the National Seashore monitor in Kleberg County has days in 2021 through 2023 that were impacted by exceptional events.

For the Karnack monitor, based on TCEQ's assessment of exceptional events for 2021, 2022, and 2023, with the exclusion of the days listed in Table 1: *Days in 2021, 2022, and 2023 impacted by Exceptional Events at the Karnack Monitor*, the 2023 annual PM_{2.5} design value will meet the 2024 annual PM_{2.5} NAAQS.

Table 1: Days in 2021, 2022, and 2023 impacted by Exceptional Events at the Karnack Monitor

Date	EPA Site Number	Type of Event	Exceedance Concentration (µg/m ³)
April 4, 2021	482030002	Prescribed Fire	69.7
January 21, 2022	482030002	Prescribed Fire	98.2
January 22, 2022	482030002	Prescribed Fire	47.9

Date	EPA Site Number	Type of Event	Exceedance Concentration ($\mu\text{g}/\text{m}^3$)
January 23, 2022	482030002	Prescribed Fire	33.0
June 13, 2022	482030002	African Dust	39.0
June 14, 2022	482030002	African Dust	33.4
June 15, 2022	482030002	African Dust	27.1
June 16, 2022	482030002	African Dust	27.0
July 17, 2022	482030002	Prescribed Fire, African Dust	26.0
July 18, 2022	482030002	Prescribed Fire, African Dust	29.5
February 27, 2023	482030002	Prescribed Fire, High Winds	26.6
March 15, 2023	482030002	Prescribed Fire	39.7

The Karnack site is located a few miles west of the Texas-Louisiana border in Harrison County. Figure 10: *Harrison County Trajectory Means* shows that international and out-of-state transport is involved in almost 85% of the days in 2019 through 2022. Figure 11: *Harrison County Cluster Frequency by Month* shows that daily $\text{PM}_{2.5}$ measurements are highest in the summer months when transport conditions from the southeast of Texas exist.

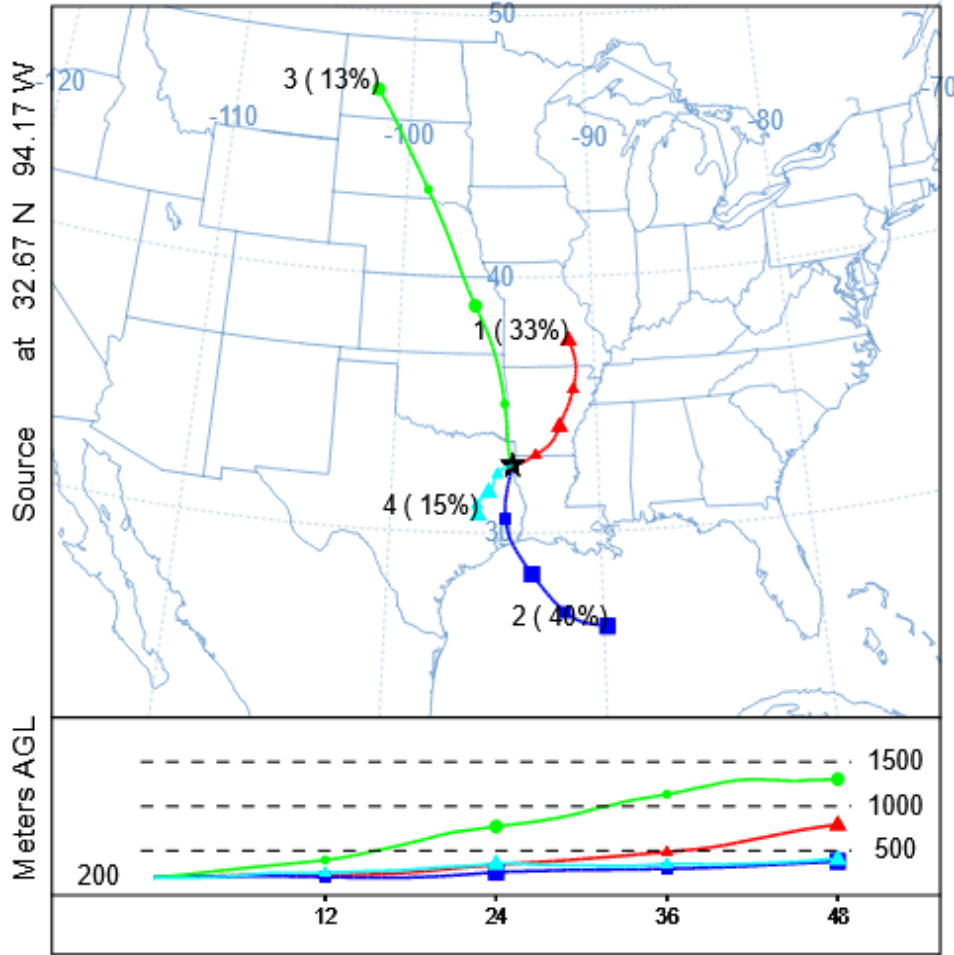


Figure 10: Harrison County Trajectory Means

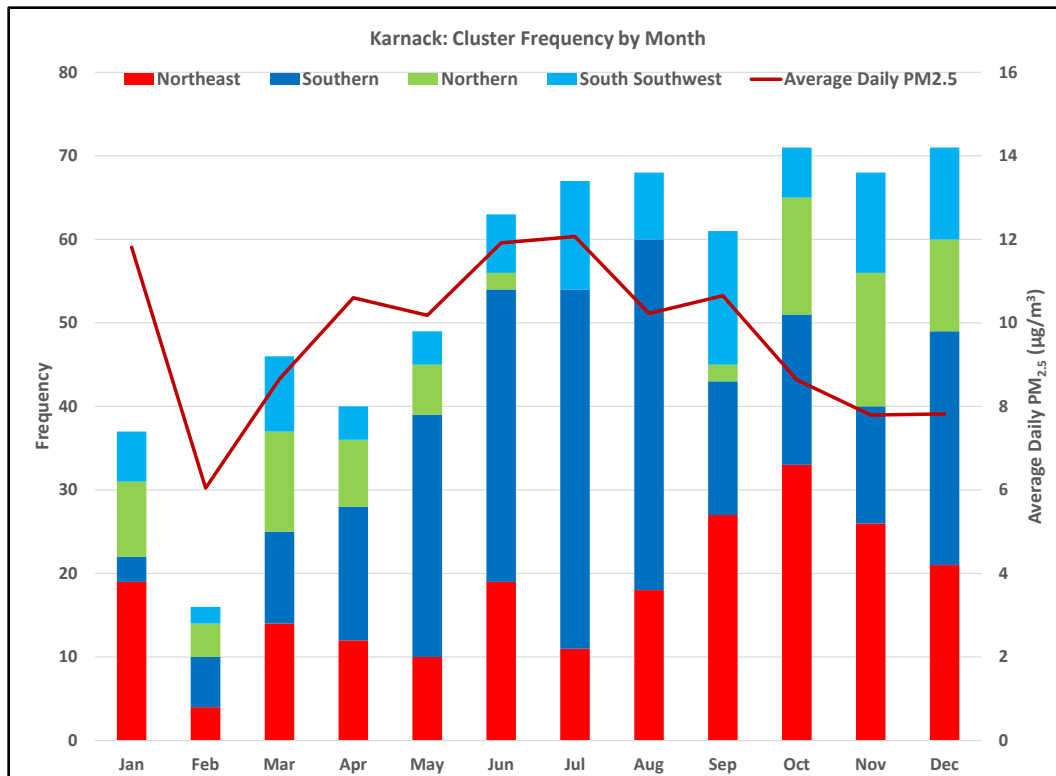


Figure 11: Harrison County Cluster Frequency by Month

In Travis County, though the Austin North Interstate 35 was the design value setting monitor in 2023, TCEQ will identify the Austin North Interstate 35 monitor as not suitable for comparison against the annual PM_{2.5} NAAQS due to the monitor not being representative of area-wide air quality. The identification will be made in the Annual Monitoring Network Plan and must be approved by EPA. Based on TCEQ’s assessment of exceptional events for 2021, 2022, and 2023, with the exclusion of the days listed in Table 2: *Days in 2021, 2022, and 2023 impacted by Exceptional Events at the Austin Webberville Monitor*, the 2023 annual PM_{2.5} design value will meet the 2024 annual PM_{2.5} NAAQS.

Table 2: Days in 2021, 2022, and 2023 impacted by Exceptional Events at the Austin Webberville Monitor

Date	EPA Site Number	Type of Event	Exceedance Concentration (µg/m ³)
March 27, 2021	484530021	Fire - Mexico/Central America	25.0
April 9, 2021	484530021	Fire - Mexico/Central America	29.0
September 4, 2021	484530021	African Dust	26.1
May 20, 2022	484530021	Prescribed Fire, Fire - Mexico/Central America	27.8
June 13, 2022	484530021	African Dust	30.8
June 16, 2022	484530021	African Dust	34.8
June 17, 2022	484530021	African Dust	25.5
July 17, 2022	484530021	African Dust	29.1

Date	EPA Site Number	Type of Event	Exceedance Concentration ($\mu\text{g}/\text{m}^3$)
January 1, 2023	484530021	High Winds, Fireworks	44.1
March 2, 2023	484530021	High Winds, Prescribed Fire, Fire - Mexico/Central America	32.9
June 13, 2023	484530021	Fire - Mexico/Central America	31.5
June 14, 2023	484530021	Fire - Mexico/Central America	27.6
June 15, 2023	484530021	Fire - Mexico/Central America	27.4

TCEQ further analyzed the Webberville monitoring site, and Figure 12: *Travis County Trajectory Means* shows that more than a third of the daily trajectories come from southeasterly directions that are likely to contain wildfire emissions or Saharan dust. Figure 13: *Travis County Cluster Frequency by Month* shows that daily $\text{PM}_{2.5}$ levels at the Webberville monitoring site reach a maximum during the summer months when the southeasterly trajectories are more frequent.

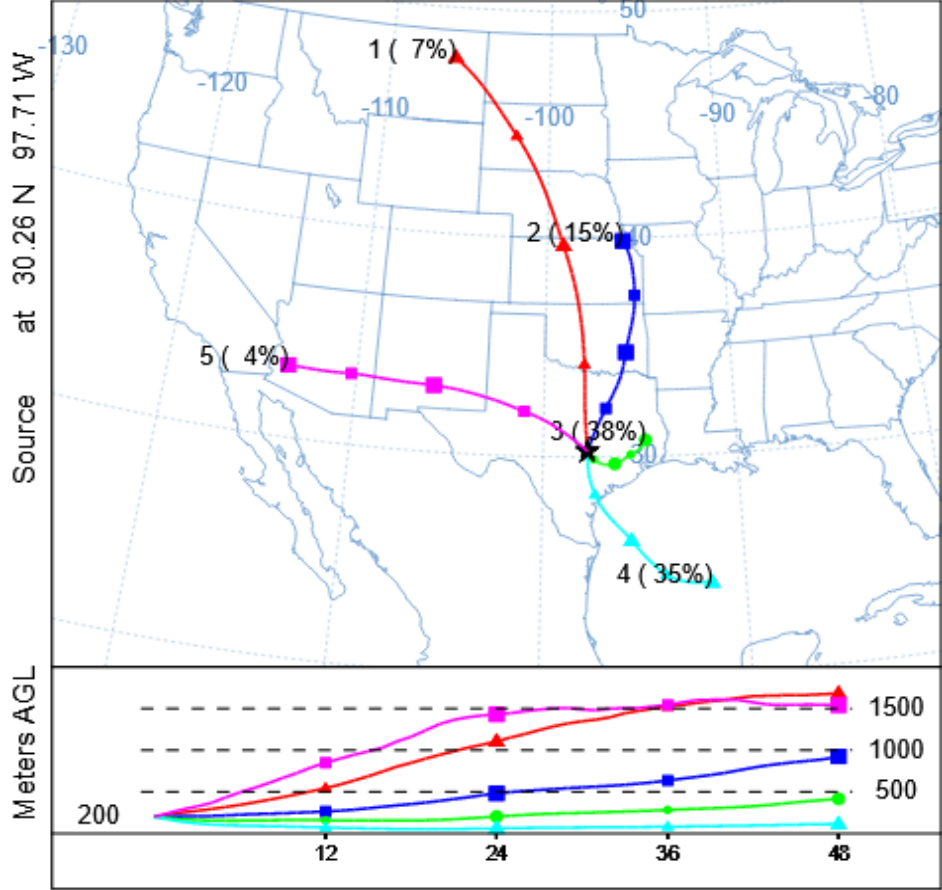


Figure 12: Travis County Trajectory Means

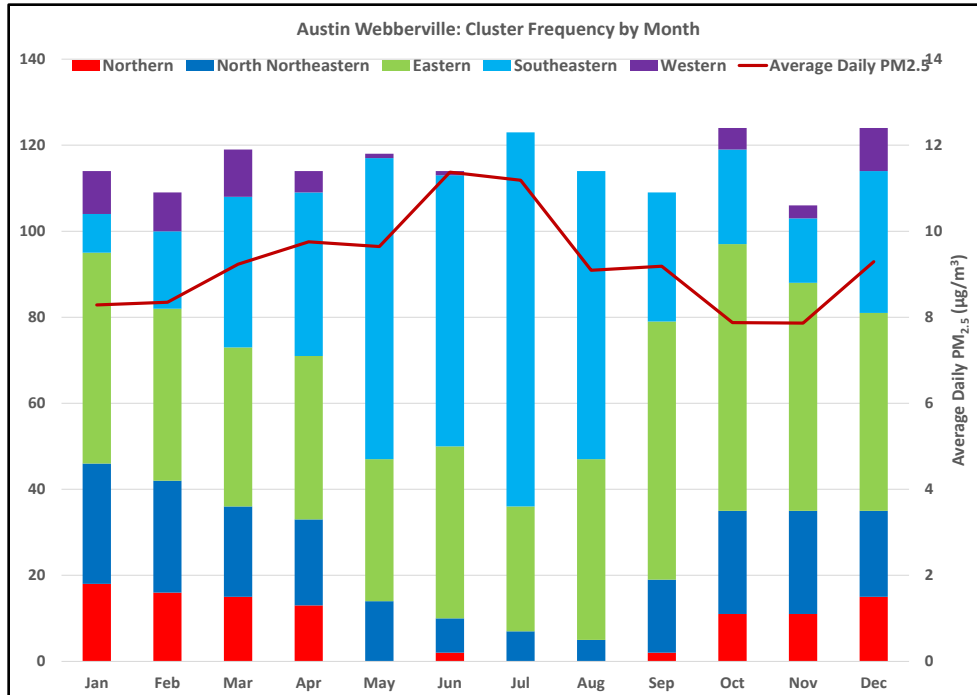


Figure 13: Travis County Cluster Frequency by Month

Long-range Transport Impact on Other Texas Counties

In Harris County, TCEQ analyzed the Houston North Wayside site, which is the design value setting monitor for the county in 2023. Figure 14: *Harris County Trajectory Means* also shows that nearly two-thirds of daily back trajectories come from southerly or southeasterly directions. Figure 15: *Harris County Cluster Frequency by Month* shows that daily PM_{2.5} measurements are highest when southeasterly or southerly trajectories are most frequent.

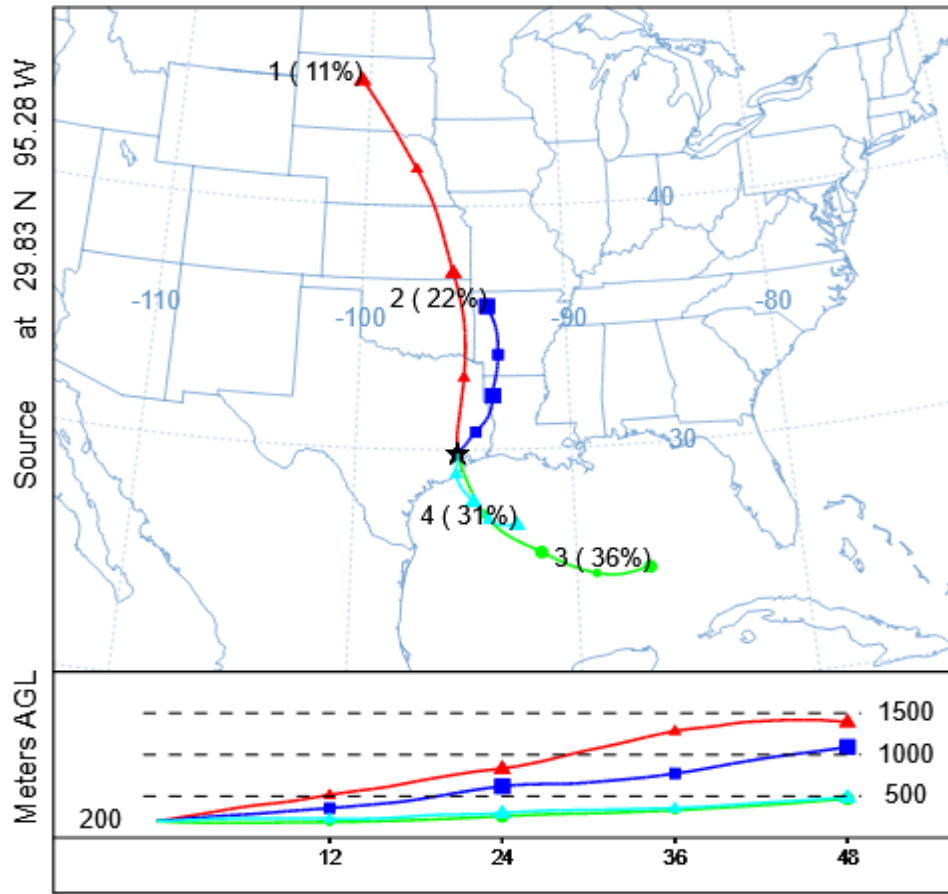


Figure 14: Harris County Trajectory Means

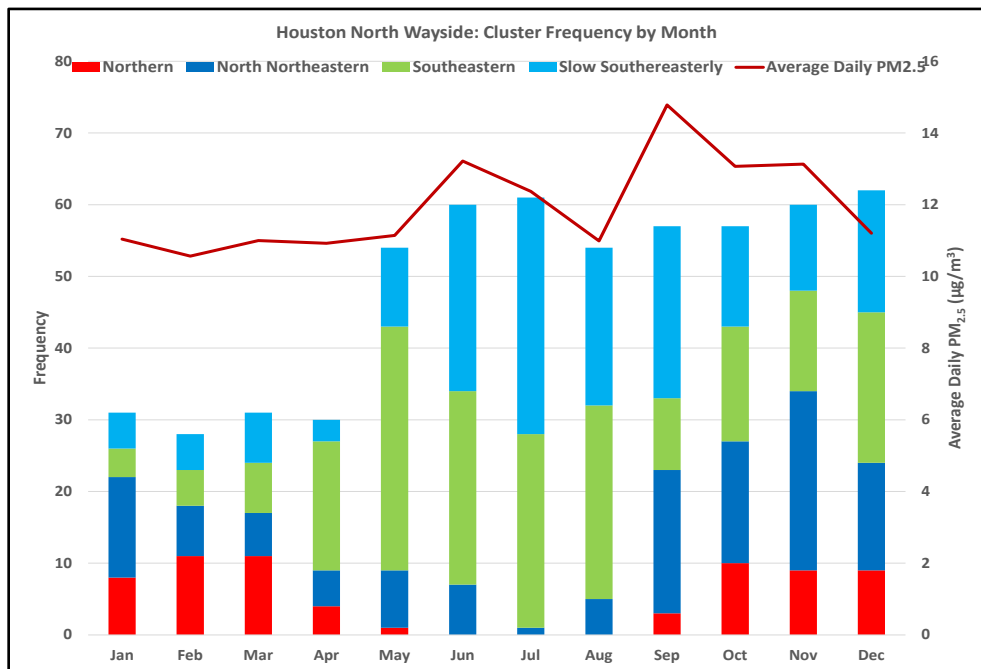


Figure 15: Harris County Cluster Frequency by Month

TCEQ also analyzed the Dallas Convention Center monitoring site in Dallas County. Figure 16: *Dallas County Trajectory Means* shows that Dallas County is impacted nearly 33% of the time by out-of-state transport. The figure also shows that another 28% of the days show evidence of international transport from the south. Figure 17: *Dallas County Cluster Frequency by Month* shows that daily PM_{2.5} concentrations are highest when the southeastern trajectory directions are the most frequent.

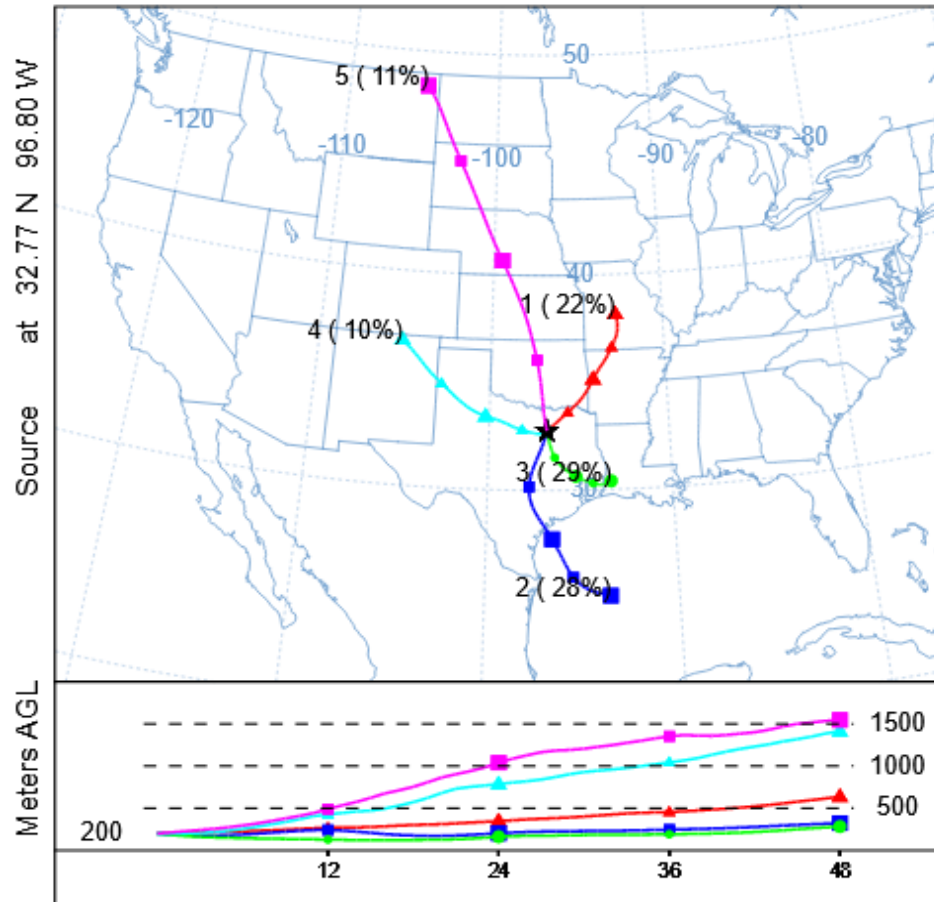


Figure 16: Dallas County Trajectory Means

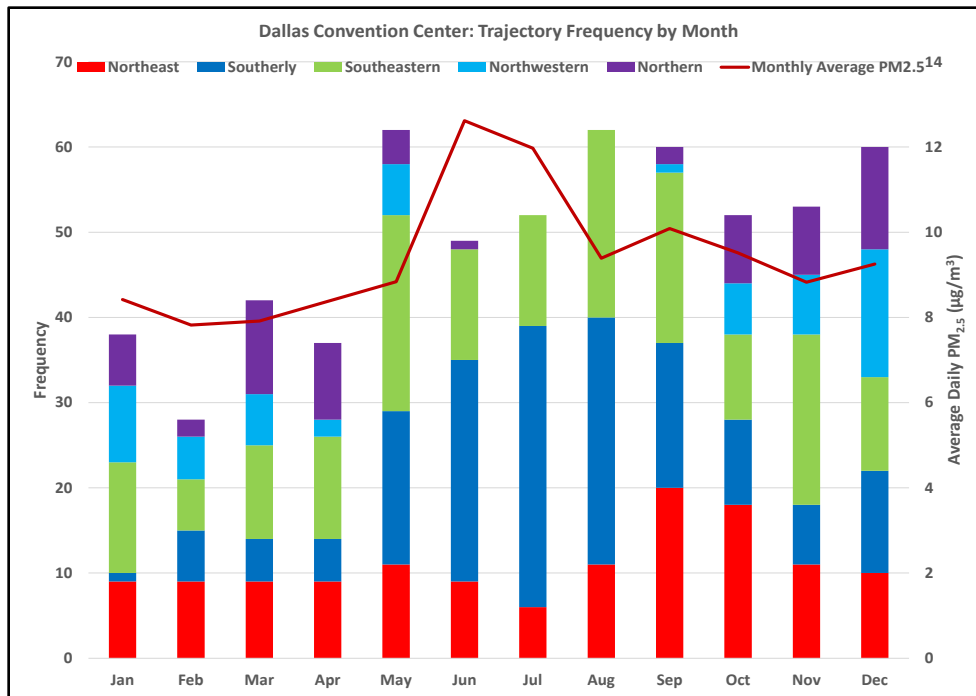


Figure 17: Dallas County Cluster Frequency by Month

For the Fort Worth Northwest monitoring site in Tarrant County, Figure 18: *Tarrant County Trajectory Means* shows that nearly 42% of the daily trajectories show a likelihood of out-of-state transport. Another 30% of the daily trajectories from the southeasterly direction show the potential for international dust transport. Figure 19: *Tarrant County Cluster Frequency by Month* shows that daily PM_{2.5} levels are highest during the potential Saharan dust months of May through August.

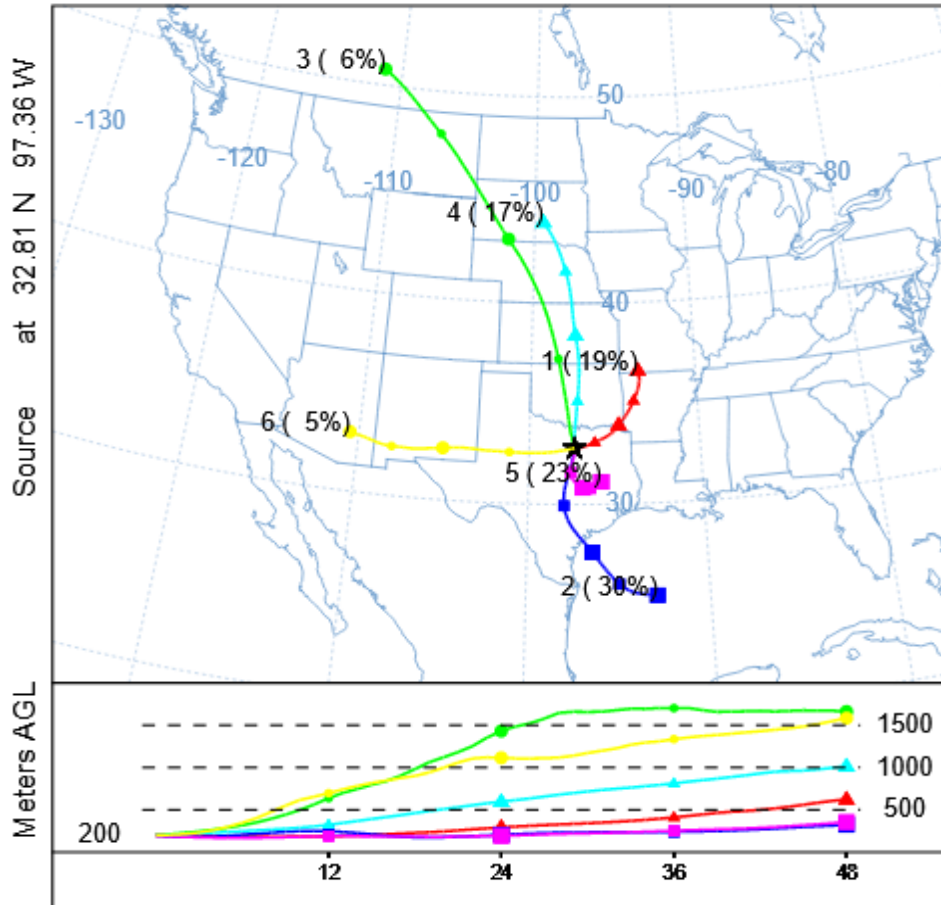


Figure 18: Tarrant County Trajectory Means

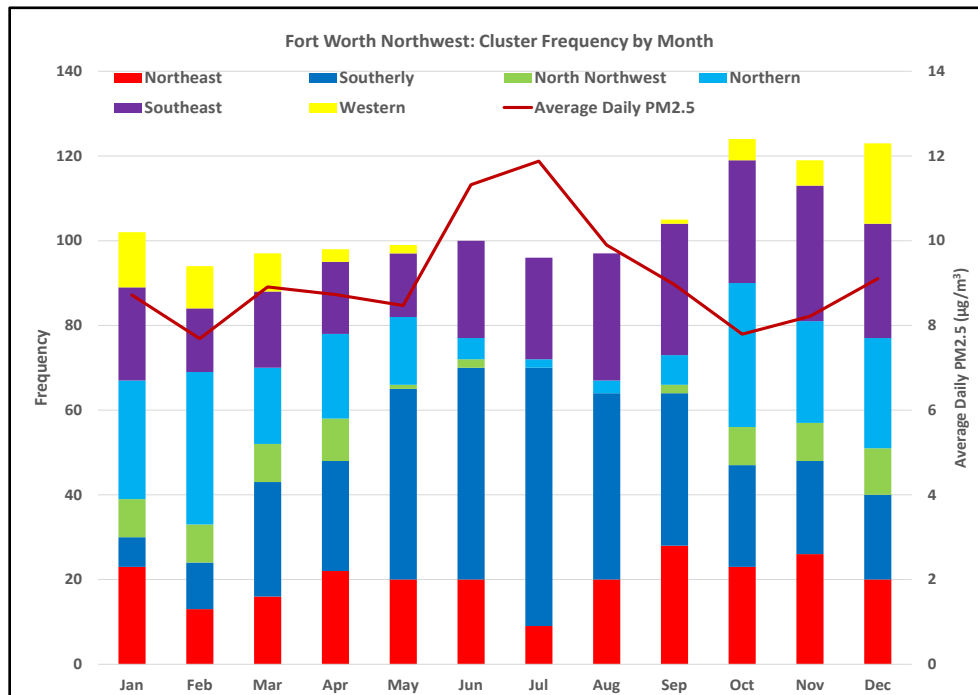


Figure 19: Tarrant County Cluster Frequency by Month

The last monitoring site analyzed by TCEQ was the New Boston monitoring site in Bowie County. Located in the far northeast corner of Texas, the Bowie County site shows a high potential for out-of-state transport. Figure 20: *Bowie County Trajectory Means* shows that 57% of daily trajectories have the potential for out-of-state transport. Another 40% of the trajectories show southerly direction with the potential for international transport in the form of Saharan dust. Figure 21: *Bowie County Cluster Frequency by Month* shows that daily PM_{2.5} levels are at their highest during summer months when transport of Saharan dust is at its maximum.

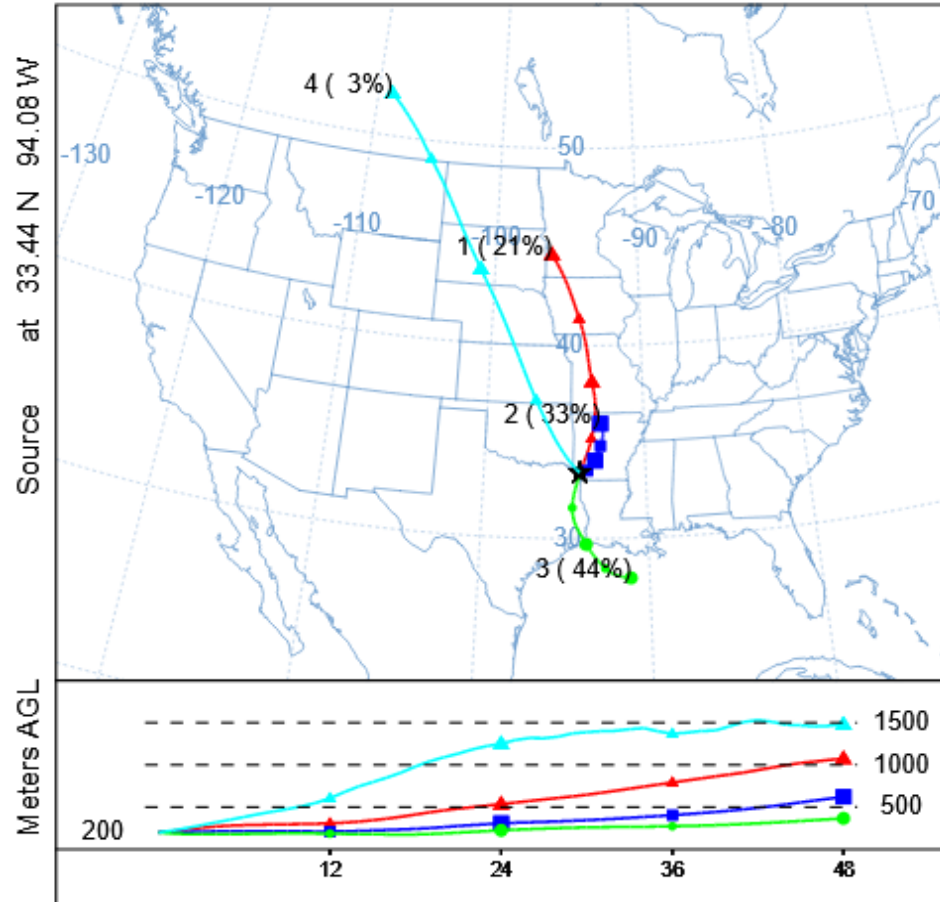


Figure 20: Bowie County Trajectory Means

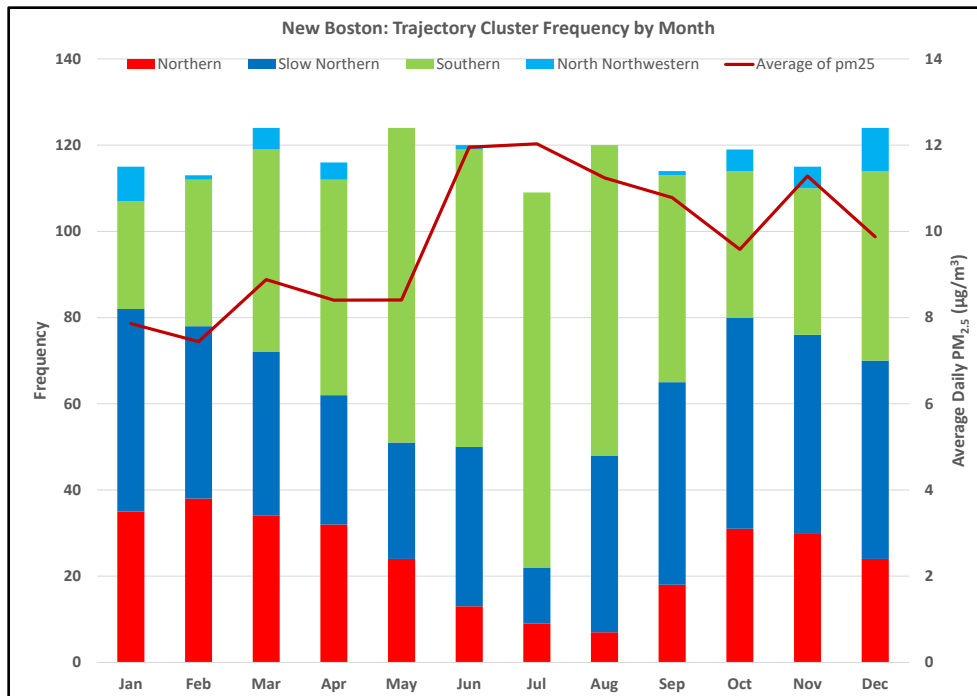


Figure 21: Bowie County Cluster Frequency by Month

Jon Niermann, *Chairman*
Bobby Janecka, *Commissioner*
Catarina R. Gonzales, *Commissioner*
Kelly Keel, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December XX, 2024

The Honorable Greg Abbott
Governor of Texas
State Capitol
P. O. Box 12428
Austin, TX 78711-2428

RE: State Designations for the 2024 Primary Annual Fine Particulate (PM_{2.5}) National Ambient Air Quality Standard (NAAQS)

Dear Governor Abbott:

The U.S. Environmental Protection Agency (EPA) revised the primary annual NAAQS for PM_{2.5} from 12.0 to 9.0 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), on February 7, 2024. Section 107(d) of the federal Clean Air Act requires the governor of each state to submit to EPA a list of designations of attainment, nonattainment, or unclassifiable for all areas within one year of promulgation of a new or revised NAAQS.

The Texas Commission on Environmental Quality (TCEQ) recommends that all counties in Texas with regulatory monitors measuring valid design values over the 2024 annual PM_{2.5} NAAQs of 9.0 $\mu\text{g}/\text{m}^3$ and not significantly impacted by international emissions and/or exceptional events be designated as nonattainment for the 2024 annual PM_{2.5} NAAQS. TCEQ recommends that all counties in Texas that have regulatory monitors that would meet the 2024 annual PM_{2.5} NAAQS if not for international emissions and/or exceptional events be designated attainment and that all counties in Texas that have regulatory monitors with complete data meeting the 2024 annual PM_{2.5} NAAQS be designated attainment. Additionally, TCEQ recommends that all counties in Texas that have regulatory monitors but are unable to generate valid 2023 design values based on available data be designated unclassifiable. Finally, TCEQ recommends that all other counties in the state be designated attainment/unclassifiable consistent with historical EPA designation practices. These recommendations are based on the three most recent years of quality-assured air data from the current regulatory monitoring network for the years 2021 through 2023 (see Attachments A and B).

Enclosed are a resolution and attachments containing TCEQ's recommendation for your consideration as you make your state designations, which are due to EPA by the February 7, 2025.

Sincerely,

Jon Niermann
Chairman

Enclosures

The Honorable Greg Abbott
Page 2

cc: Ben Haguewood, Office of the Governor
Kelly Keel, Executive Director, TCEQ