

1. Reason for the Transportation Conformity Regional Emissions Analysis (§93.104) Beginning September 1, 2023

This plan is being submitted to the interagency consultation partners for soliciting consensus before commencement of a full-scale regional transportation conformity analysis. The plan and procedures may be revised as the North Central Texas Council of Governments (NCTCOG) staff proceeds with the analysis. Notification of such changes will be made to the interagency consultation partners.

Per TxDOT’s direction regarding Regional Toll Analysis, no new analysis is required unless significant changes to the proposed tolling facilities occur that would void the results of previous analyses. As a part of the transportation conformity analysis, no changes are being proposed to the tolling facilities. Staff will continue to monitor any changes to recommendations to tolling facilities for future plan amendments or updates and reassess at that time the need for an updated Regional Toll Analysis.

Table 1: Explanation

| | |
|----------------------|---|
| X_a | State Implementation Plan Requirement (New Motor Vehicle Emissions Budgets) |
| | Other |

- a. Based on monitoring data from 2015, 2016, and 2017, the DFW area did not attain the 2008 eight-hour ozone NAAQS in 2017, and neither qualified for a one-year attainment date extension per federal Clean Air Act (FCAA), §181(a)(5). On August 23, 2019, the United States Environmental Protection Agency (EPA) published the final notice reclassifying the DFW nonattainment area from moderate to serious for the 2008 eight-hour ozone NAAQS, effective on September 23, 2019. The DFW area then became subject to the serious nonattainment area requirements in FCAA, §182(c), and as required, the TCEQ submitted serious classification AD and RFP SIP revisions to the EPA. On April 24, 2023, the Environmental Protection Agency (EPA) published a Notice of Adequacy for the 2020 MVEBs for the purpose of transportation conformity, with an effective date of May 24, 2023. This adequacy determination requires a transportation conformity to be performed within two years of the effective date. As a result, these approved budgets will be used for this transportation conformity determination.

Here is a link to the [federal transportation conformity rule](#)

2. Planning Detail (§93.110)

Table 2: Metropolitan Transportation Plan/Transportation Improvement Program

| Plan or Programs | Years Covered |
|---|---------------|
| <u>Mobility 2045: The Metropolitan Transportation Plan for North Central Texas, 2022 Update</u> | 2023-2045 |
| <u>2023–2026 Transportation Improvement Program (TIP) for North Central Texas</u> | 2023-2026 |

Table 3: Projects

| Project Element | Description |
|--|---|
| Regionally Significant Definition | Regionally Significant Roadways document can be shared upon request. |
| Capacity Changes | No changes are expected in all analysis years. |
| Congestion Mitigation and Air Quality Projects | Projects funded with CMAQ funds are included in the TIP. |
| Non-Federal Projects | NCTCOG identified regionally significant projects in the MTP and TIP that do not receive federal funding (local initiatives, private ventures, etc.). |
| Exempt Projects | NCTCOG identified exempt projects in the TIP according to the specifications outlined in the Conformity Regulations (§93.126, §93.127, and §93.128). |
| Other | N/A |

Table 4: State Implementation Plan

| SIP Element | Description |
|---------------------------------|---|
| Title of Applicable SIP(s) | <i>Dallas-Fort Worth (DFW) Serious Classification Reasonable Further Progress (RFP) (TCEQ Adopted: 03/04/2020; EPA Adequacy Determination for MVEBs Effective: 05/24/2023)¹</i> |
| Motor Vehicle Emissions Budgets | MVEBs for 2020 (2008 Ozone NAAQS Serious - Attainment Year RFP SIP) NO _x : 107.25 tons/day VOC: 62.41 tons/day |
| Transportation Control Measures | <p><i>Dallas-Fort Worth 1997 8-Hour Ozone Moderate Nonattainment Area Attainment Demonstration State Implementation Plan Revision (TCEQ Adopted 05/23/07)</i></p> <p><i>Dallas-Fort Worth Environmental Speed Limit Control Strategy Conversion to a Transportation Control Measure² (TCEQ Adopted 08/25/2010)</i></p> <p><i>Approval and Promulgation of Air Quality Implementation Plans; Texas; Environmental Speed Limit Revision for the Dallas-Fort Worth 8-Hour Ozone Nonattainment Area Approval of Substitution for Transportation Control Measures (EPA Approved in 79 FR 1596³ on 1/09/2014)</i></p> <p><i>HOV Lane TCM Replaced with Traffic Signalization Projects (Adopted 5/31/2016; Approved 11/09/2016) and Transportation Control Measure Substitution in Dallas-Fort Worth Ozone Nonattainment Area⁴ (TCEQ Adopted 2/18/2020, EPA Approved 6/17/2020)</i></p> |

¹ <https://www.govinfo.gov/content/pkg/FR-2023-04-24/pdf/2023-08436.pdf>

² http://www.tceq.texas.gov/assets/public/implementation/air/sip/dfw/080610/SIP_WEB_06AUG10.pdf

³ <https://www.federalregister.gov/d/2014-00047>

⁴ <https://www.federalregister.gov/documents/2020/06/17/2020-10835/air-plan-approval-texas-approval-of-substitution-for-dallas-fort-worth-area-transportation-control>

Table 5: Conformity Analysis Years

| Requirement | Year |
|---|---|
| Conformity Base Year | N/A |
| Reclassification and Attainment Dates | <p>The existing 10 DFW nonattainment counties were reclassified as a severe nonattainment area for the 2008 8-hour Ozone NAAQS with an attainment date of July 20, 2027 (attainment year of 2026)</p> <p>9 of those 10 DFW nonattainment counties (excluding Rockwall County) were reclassified as a moderate nonattainment area for the 2015 8-hour Ozone NAAQS with an attainment date of August 03, 2024 (attainment year of 2023)</p> |
| Last Year of Maintenance Plan | N/A |
| First Analysis Year ⁵ | 2023 |
| Intermediate Analysis Year ⁶ | 2026 |
| Intermediate Analysis Year ⁷ | 2036 |
| Last Year of Transportation Plan (MTP) | 2045 |
| Interpolation Years | N/A |
| Other | N/A |

⁵ Per *Code of Federal Regulations* §93.106(a)(1)(ii), the first analysis year cannot be more than 10 years from the base year used to validate the transportation demand planning model. Per *Code of Federal Regulations* §93.118(d)(2) The attainment year, if within the timeframe of the plan, is a required analysis year for conformity. 2023 will be the potential attainment year when the area is reclassified under the 2015 8-hour Ozone NAAQS.

⁶ Per *Code of Federal Regulations* §93.106(a)(1)(i), analysis years cannot be more than 10 years apart. Per *Code of Federal Regulations* §93.118(d)(2) The attainment year, if within the timeframe of the plan, is a required analysis year for conformity. 2026 will be the potential attainment year when the area is reclassified under the 2008 8-hour Ozone NAAQS.

⁷ Per *Code of Federal Regulations* §93.106(a)(1)(i), analysis years cannot be more than 10 years apart.

3. Demographics

Table 6: Demographics Used in Conformity Analysis

| Data Element | 2023 and 2026 Analysis Years Detail and Source of Data | 2036 and 2045 Analysis Years Detail and Source of Data |
|--------------|--|---|
| Population | <p>Population estimates for years between 2020 and 2030 were an interpolation between 2020 and the long-term forecast of 2030.</p> <p>The 2020 population comes from Census 2020.</p> <p>The long-term forecast was built upon 2005, 2010, and 2015 observed data. County Control totals are based on various independent estimates. Small geographic distribution within counties was based on land use/demographic model, comprehensive plans, and input from local governments.</p> | <p>The long-term forecast was used for 2036 and 2045.</p> |
| Employment | <p>Employment estimates for years between 2020 and 2030 were an interpolation between 2020 and the long-term forecast for 2030.</p> <p>The 2020 employment used county control totals from Bureau of Economic Analysis. Small geographic distribution within counties is based on Census Transportation Planning Products, Longitudinal Employer-Household Dynamics, and external sources.</p> <p>The long-term forecast was built upon 2005, 2010, and 2015 observed data. County Control totals are based on various independent estimates. Small geographic distribution within counties was based on land use/demographic model, comprehensive plans, and input from local government.</p> | <p>The long-term forecast was used for 2036 and 2045.</p> |
| Other | N/A | N/A |

4. Activity Detail

Table 7: Travel Demand Model

| Model Factor | Detail and Methodology |
|--|---|
| Model Validation Year | 2014 |
| Software | TransCAD, Transportation Analytical Forecasting Tool (TAFT) |
| Vehicle Miles Travel (VMT) Adjustments (Highway Performance Monitoring System (HPMS) Factor) | 0.9889 |
| Seasonal Correction Factor | Represents summer weekday from non-summer weekday activities; based on an average from 2015-2019 TxDOT Automatic Traffic Recorder (ATR) factors. |
| Hourly Distribution Factors | Regionally specific hourly VMT distributions reflected in the hourly link-VMT estimates; based on 2015-2019 TxDOT ATR factors. |
| Counties Covered by Model | Collin, Dallas, Denton, Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, Tarrant, Wise, and Hill (Hill employed for modeling purposes only and will not be reported). All nonattainment counties are contained within modeled area. |
| Other | N/A |

5. Emissions Detail (Motor Vehicle Emission Simulator (MOVES) Emission Factor Model Information)

Development of Emission Factors: NCTCOG will use the MOVES3 model to determine emission factors for this conformity analysis. Detailed MOVES input parameter data and sources will be forwarded for review by consultation partners.

| | |
|---------------------------------------|---|
| Emission Model Version: | MOVES3 |
| Analysis Year Runs: | 2023, 2026, 2036, and 2045 |
| Time Periods: | Hourly |
| Pollutants Reported: | Oxides of Nitrogen (NO _x) & Volatile Organic Compounds (VOC) |
| Functional Class: | Urban Restricted, Rural Restricted, Urban Unrestricted, and Rural Unrestricted |
| VMT Mix: | EPA's 24-vehicle class; applied post-process |
| Speed: | 1-75 miles per hour (mph) at 5 mph increments; in between speeds are interpolated |
| Vehicle Age Distribution Data: | End-of-year 2018 |

MOVES3 inputs:

Table 8: MOVES3 Modeled Pollutants

| Command | Function/Description | Input Parameter Source/Value |
|------------------|--|------------------------------|
| Pollutant | Defines the basic set of pollutants to report. | NO _x and VOC |

Table 9: MOVES3 External Conditions

| Command | Function/Description | Input Parameter Values | Description |
|-------------------------|--|---------------------------|--|
| MOVES Model | Identifies the model version to be utilized for the analysis. | MOVES3 | MOVES3, released in November 2020 |
| Calendar Year(s) | Identifies calendar year for which emissions factors are to be calculated (required to run model). | 2023, 2026, 2036 and 2045 | Potential attainment demonstration years and plan forecast years (as mentioned above in Table 5) |
| Evaluation Month | Provides option of calculating emissions factors for each month of the calendar year | 7 | Representing summer ozone season |

Table 10: MOVES3 Input Parameters and Source

| Input Parameter Name | Description | Source |
|--|---|--|
| Source Type Population | Input the number of vehicles in the geographic area, which is to be modeled for each vehicle, and apply the appropriate growth factors for each analysis year. A methodology similar to Texas A&M Transportation Institute's TTI's MOVESpopulationBuild module is used to convert TxDMV registration data for each county into the MOVES SUT. | End-of-year 2018 TxDMV registration data |
| Source Type Age Distribution | Input that provides the distribution of vehicle counts by age for each calendar year and vehicle type. TxDMV registration data is used to estimate the age distribution of vehicle types up to 30 years. The distribution of Age fractions should sum up to 1.0 for all vehicle types for each analysis year. | End-of-year 2018 TxDMV registration data; MOVES default used for buses |
| Vehicle Type VMT | County specific VMT is distributed to HPMS Vehicle types. | Travel Model Output |
| Average Speed Distribution | Input average speed data specific to vehicle type, road type, and time of day/type of day into 16 speed bins. The sum of speed distribution to all speed bins for each road type, vehicle type, and time/day type is 1.0. | Travel Model Output |
| Road Type Distribution (VMT Fractions) | Input County specific VMT by road type. VMT fraction is distributed between the road type and must sum to 1.0 for each source type. | Travel Model Output |
| Fuel Supply | Input to assign existing fuels to counties, months, and years, and to assign the associated market share for each fuel. | TCEQ, EPA Fuel Surveys and default MOVES input where local data unavailable (See table 11a) |
| Fuel Formulation | Input county specific fuel properties in the MOVES database. | TCEQ, EPA Fuel Surveys and default MOVES input where local data unavailable (See Table 11b) |
| Meteorology | County specific data on temperature, relative humidity and barometric pressure. | Regional data from TCEQ (See Tables 12a, 12b, and 12c showing data) ⁸ |
| Inspection and Maintenance (I/M) Coverage | Input I/M coverage record for each combination of pollutants, process, county, fuel type, regulatory class, and model year are specified using this input. | TCEQ (See Table 13) |
| Fuel Engine Fraction/Diesel Fraction | Input fuel engine fractions (i.e. Gasoline vs. Diesel Engines types in the vehicle population) for all vehicle types. | End-of-year 2018 TxDMV registration data; MOVES default used for light-duty vehicles and buses |

⁸ Data provided by the TCEQ based on combined data from Leading Environmental Analysis and Display System, NWS, and U.S. Air Force

Table 11a: MOVES3 Fuel Supply

| Fuel Formulation ID | Market Share | Market Share CV ⁹ |
|---------------------|--------------|------------------------------|
| 14714/14702 | 1 | 0 |
| 30600 | 1 | 0 |

Table 11b: MOVES3 Future Year Fuel Properties¹⁰

| Fuel Type | Gasoline | | Diesel |
|-----------------------|----------|-----------|--------------|
| | Core | Perimeter | All Counties |
| County Group | | | |
| Fuel Formulation ID | 14714 | 14702 | 30600 |
| Fuel Subtype ID | 12 | 12 | 21 |
| RVP | 7.09 | 7.80 | - |
| Sulfur Level | 10.00 | 10.00 | 6 |
| ETOH Volume | 9.56 | 9.56 | - |
| MTBE Volume | 0 | 0 | - |
| ETBE Volume | 0 | 0 | - |
| TAME Volume | 0 | 0 | - |
| Aromatic Content | 16.96 | 22.22 | - |
| Olefin Content | 10.13 | 8.69 | - |
| Benzene Content | 0.37 | 0.99 | - |
| e200 | 47.00 | 49.64 | - |
| e300 | 84.95 | 84.60 | - |
| Vol to Wt Percent Oxy | 0.3653 | 0.3653 | - |
| BioDieselEster Volume | - | - | 4.86 |
| Cetane Index | - | - | - |
| PAH Content | - | - | - |
| T50 | 210.35 | 202.53 | - |
| T90 | 325.30 | 319.75 | - |

⁹ Market Share CV – the coefficient variation of the market share

¹⁰ Fuel subtype ID 12 is E10 gasoline, either conventional (CG) or RFG, with a nominal 10 percent by volume ethanol content. Fuel subtype ID 21 is biodiesel (BD), currently in Texas, ULSD estimated with a near 5% biodiesel ester volume content.

Gasoline: Texas latest available (2020) summer survey data were the basis of both the CG and RFG input estimates, updated with MOVES defaults as needed, for particular expected future year properties. For RFG TTI estimated the average fuel properties by fuel grade combined into overall averages using EIA latest available (2019) Texas RFG relative sales volumes by grade. EPA summer 2020 RFG survey data were used (with hundreds of RFG samples) for Dallas and Houston RFG areas, separately. For CG, TTI used the TCEQ summer 2020 CG survey-based regional estimates produced by ERG for TCEQ's fuel study. TTI updated CG and RFG summer 2020 fuel formulations for use in future years by replacing particular fuel property values with the expected future year values (MOVES3 defaults). These include sulfur level for RFG, and RVP, sulfur level, and benzene content for CG.

Diesel: Diesel sulfur for future years is set to the MOVES3 default expected value, which is close to the actual, relatively stable, statewide averages observed in the last four TCEQ fuel surveys (2011, 2014, 2017, 2020). TTI based the estimated biodiesel ester volume content on EIA 2018 (latest available), Texas, transportation sector biodiesel and diesel consumption data.

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Table 12a: 2011 Hourly Temperature Data¹¹

| | Collin | Dallas | Denton | Ellis | Johnson | Kaufman | Parker | Rockwall | Tarrant | Wise |
|----------|--------|--------|--------|-------|---------|---------|--------|----------|---------|--------|
| 12:00 AM | 85.18 | 85.18 | 85.18 | 85.18 | 85.55 | 85.18 | 85.55 | 85.18 | 85.55 | 85.55 |
| 1:00 AM | 84.01 | 84.01 | 84.01 | 84.01 | 84.40 | 84.01 | 84.40 | 84.01 | 84.40 | 84.40 |
| 2:00 AM | 82.97 | 82.97 | 82.97 | 82.97 | 83.06 | 82.97 | 83.06 | 82.97 | 83.06 | 83.06 |
| 3:00 AM | 81.91 | 81.91 | 81.91 | 81.91 | 81.82 | 81.91 | 81.82 | 81.91 | 81.82 | 81.82 |
| 4:00 AM | 80.79 | 80.79 | 80.79 | 80.79 | 80.87 | 80.79 | 80.87 | 80.79 | 80.87 | 80.87 |
| 5:00 AM | 79.73 | 79.73 | 79.73 | 79.73 | 79.56 | 79.73 | 79.56 | 79.73 | 79.56 | 79.56 |
| 6:00 AM | 78.85 | 78.85 | 78.85 | 78.85 | 78.64 | 78.85 | 78.64 | 78.85 | 78.64 | 78.64 |
| 7:00 AM | 80.01 | 80.01 | 80.01 | 80.01 | 79.29 | 80.01 | 79.29 | 80.01 | 79.29 | 79.29 |
| 8:00 AM | 82.83 | 82.83 | 82.83 | 82.83 | 82.76 | 82.83 | 82.76 | 82.83 | 82.76 | 82.76 |
| 9:00 AM | 86.30 | 86.30 | 86.30 | 86.30 | 86.59 | 86.30 | 86.59 | 86.30 | 86.59 | 86.59 |
| 10:00 AM | 89.61 | 89.61 | 89.61 | 89.61 | 89.88 | 89.61 | 89.88 | 89.61 | 89.88 | 89.88 |
| 11:00 AM | 92.62 | 92.62 | 92.62 | 92.62 | 93.30 | 92.62 | 93.30 | 92.62 | 93.30 | 93.30 |
| 12:00 PM | 95.10 | 95.10 | 95.10 | 95.10 | 95.90 | 95.10 | 95.90 | 95.10 | 95.90 | 95.90 |
| 1:00 PM | 97.02 | 97.02 | 97.02 | 97.02 | 97.72 | 97.02 | 97.72 | 97.02 | 97.72 | 97.72 |
| 2:00 PM | 98.43 | 98.43 | 98.43 | 98.43 | 99.34 | 98.43 | 99.34 | 98.43 | 99.34 | 99.34 |
| 3:00 PM | 99.36 | 99.36 | 99.36 | 99.36 | 100.26 | 99.36 | 100.26 | 99.36 | 100.26 | 100.26 |
| 4:00 PM | 99.83 | 99.83 | 99.83 | 99.83 | 100.72 | 99.83 | 100.72 | 99.83 | 100.72 | 100.72 |
| 5:00 PM | 99.57 | 99.57 | 99.57 | 99.57 | 100.42 | 99.57 | 100.42 | 99.57 | 100.42 | 100.42 |
| 6:00 PM | 98.38 | 98.38 | 98.38 | 98.38 | 99.30 | 98.38 | 99.30 | 98.38 | 99.30 | 99.30 |
| 7:00 PM | 96.03 | 96.03 | 96.03 | 96.03 | 97.18 | 96.03 | 97.18 | 96.03 | 97.18 | 97.18 |
| 8:00 PM | 92.57 | 92.57 | 92.57 | 92.57 | 93.54 | 92.57 | 93.54 | 92.57 | 93.54 | 93.54 |
| 9:00 PM | 89.93 | 89.93 | 89.93 | 89.93 | 90.73 | 89.93 | 90.73 | 89.93 | 90.73 | 90.73 |
| 10:00 PM | 88.10 | 88.10 | 88.10 | 88.10 | 88.71 | 88.10 | 88.71 | 88.10 | 88.71 | 88.71 |
| 11:00 PM | 86.49 | 86.49 | 86.49 | 86.49 | 86.90 | 86.49 | 86.90 | 86.49 | 86.90 | 86.90 |

¹¹ Data provided by the TCEQ based on combined data from LEADS, NWS, and U.S. Air Force.

Table 12b: 2011 Hourly Relative Humidity Data¹²

| | Collin | Dallas | Denton | Ellis | Johnson | Kaufman | Parker | Rockwall | Tarrant | Wise |
|----------|--------|--------|--------|-------|---------|---------|--------|----------|---------|-------|
| 12:00 AM | 50.15 | 50.15 | 50.15 | 50.15 | 46.12 | 50.15 | 46.12 | 50.15 | 46.12 | 46.12 |
| 1:00 AM | 52.90 | 52.90 | 52.90 | 52.90 | 49.02 | 52.90 | 49.02 | 52.90 | 49.02 | 49.02 |
| 2:00 AM | 55.75 | 55.75 | 55.75 | 55.75 | 52.67 | 55.75 | 52.67 | 55.75 | 52.67 | 52.67 |
| 3:00 AM | 58.76 | 58.76 | 58.76 | 58.76 | 56.13 | 58.76 | 56.13 | 58.76 | 56.13 | 56.13 |
| 4:00 AM | 61.87 | 61.87 | 61.87 | 61.87 | 58.63 | 61.87 | 58.63 | 61.87 | 58.63 | 58.63 |
| 5:00 AM | 64.62 | 64.62 | 64.62 | 64.62 | 61.78 | 64.62 | 61.78 | 64.62 | 61.78 | 61.78 |
| 6:00 AM | 67.70 | 67.70 | 67.70 | 67.70 | 64.12 | 67.70 | 64.12 | 67.70 | 64.12 | 64.12 |
| 7:00 AM | 66.62 | 66.62 | 66.62 | 66.62 | 63.75 | 66.62 | 63.75 | 66.62 | 63.75 | 63.75 |
| 8:00 AM | 61.31 | 61.31 | 61.31 | 61.31 | 57.63 | 61.31 | 57.63 | 61.31 | 57.63 | 57.63 |
| 9:00 AM | 54.11 | 54.11 | 54.11 | 54.11 | 50.25 | 54.11 | 50.25 | 54.11 | 50.25 | 50.25 |
| 10:00 AM | 47.49 | 47.49 | 47.49 | 47.49 | 43.90 | 47.49 | 43.90 | 47.49 | 43.90 | 43.90 |
| 11:00 AM | 41.71 | 41.71 | 41.71 | 41.71 | 37.73 | 41.71 | 37.73 | 41.71 | 37.73 | 37.73 |
| 12:00 PM | 37.19 | 37.19 | 37.19 | 37.19 | 33.36 | 37.19 | 33.36 | 37.19 | 33.36 | 33.36 |
| 1:00 PM | 33.77 | 33.77 | 33.77 | 33.77 | 30.55 | 33.77 | 30.55 | 33.77 | 30.55 | 30.55 |
| 2:00 PM | 31.20 | 31.20 | 31.20 | 31.20 | 27.84 | 31.20 | 27.84 | 31.20 | 27.84 | 27.84 |
| 3:00 PM | 29.42 | 29.42 | 29.42 | 29.42 | 26.27 | 29.42 | 26.27 | 29.42 | 26.27 | 26.27 |
| 4:00 PM | 28.42 | 28.42 | 28.42 | 28.42 | 25.32 | 28.42 | 25.32 | 28.42 | 25.32 | 25.32 |
| 5:00 PM | 28.30 | 28.30 | 28.30 | 28.30 | 25.17 | 28.30 | 25.17 | 28.30 | 25.17 | 25.17 |
| 6:00 PM | 29.47 | 29.47 | 29.47 | 29.47 | 26.04 | 29.47 | 26.04 | 29.47 | 26.04 | 26.04 |
| 7:00 PM | 32.42 | 32.42 | 32.42 | 32.42 | 28.45 | 32.42 | 28.45 | 32.42 | 28.45 | 28.45 |
| 8:00 PM | 37.26 | 37.26 | 37.26 | 37.26 | 32.77 | 37.26 | 32.77 | 37.26 | 32.77 | 32.77 |
| 9:00 PM | 41.36 | 41.36 | 41.36 | 41.36 | 36.64 | 41.36 | 36.64 | 41.36 | 36.64 | 36.64 |
| 10:00 PM | 44.22 | 44.22 | 44.22 | 44.22 | 39.91 | 44.22 | 39.91 | 44.22 | 39.91 | 39.91 |
| 11:00 PM | 47.42 | 47.42 | 47.42 | 47.42 | 43.27 | 47.42 | 43.27 | 47.42 | 43.27 | 43.27 |

¹² Data provided by the TCEQ based on combined data from LEADS, NWS, and U.S. Air Force.

Table 12c: 2011 Barometric Pressure Data¹³

| County | Barometric Pressure |
|-----------------|----------------------------|
| Collin | 29.87 |
| Dallas | 29.87 |
| Denton | 29.87 |
| Ellis | 29.87 |
| Johnson | 29.85 |
| Kaufman | 29.87 |
| Parker | 29.85 |
| Rockwall | 29.87 |
| Tarrant | 29.85 |
| Wise | 29.85 |

¹³ Data provided by the TCEQ based on combined data from LEADS, NWS, and U.S. Air Force.

Table 13: MOVES3 I/M Descriptive Inputs for Subject Counties

| 2023 | | | |
|---|--|---|---|
| Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant I/M Data ¹⁴ | | | |
| I/M Program ID | 20 | 24 | MOVES3 |
| Pollutant Process ID | 101, 102, 201, 202, 301, 302 | 112 | MOVES3 |
| Source Use Type | 21, 31, 32 | 21, 31, 32 | MOVES3 |
| Begin Model Year | 1999 | 1999 | Annual testing; program specifications |
| End Model Year | 2021 | 2021 | Annual testing; program specifications |
| Inspection Frequency | 1 | 1 | Annual testing; program specifications |
| Test Standards Description | Exhaust OBD Check | Evaporative Gas Cap and OBD Check | Annual testing; program specifications |
| Test Standards ID | 51 | 45 | MOVES3 |
| I/M Compliance | 94.00% for source type 21, 90.35% for source type 31 and 70.74% for source type 32 | | Expected compliance (%) - MOVES3 Default |

Note: Begin Model Year and End Model Year define the range of vehicle model years covered by I/M program.

¹⁴ Wise County does not have I/M program.

Table 13-continued

| 2026 | | | |
|---|--|--------------------------------------|---|
| Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant I/M Data | | | |
| I/M Program ID | 20 | 24 | MOVES3 |
| Pollutant Process ID | 101, 102, 201, 202, 301, 302 | 112 | MOVES3 |
| Source Use Type | 21, 31, 32 | 21, 31, 32 | MOVES3 |
| Begin Model Year | 2002 | 2002 | Annual testing; program specifications |
| End Model Year | 2024 | 2024 | Annual testing; program specifications |
| Inspection Frequency | 1 | 1 | Annual testing; program specifications |
| Test Standards Description | Exhaust OBD Check | Evaporative Gas Cap and OBD Check | Annual testing; program specifications |
| Test Standards ID | 51 | 45 | MOVES3 |
| I/M Compliance | 94.00% for source type 21, 90.35% for source type 31 and 70.74% for source type 32 | | Expected compliance (%) - MOVES3 Default |

Note: Begin Model Year and End Model Year define the range of vehicle model years covered by I/M program.

Table 13-continued

| 2036 | | | |
|---|--|-----------------------------------|---|
| Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant I/M Data | | | |
| I/M Program ID | 20 | 24 | Differentiates I/M programs |
| Pollutant Process ID | 101, 102, 201, 202, 301,302 | 112 | Identifies the pollutant and vehicle process |
| Source Use Type | 21, 31, 32 | 21, 31, 32 | Identifies the vehicle type |
| Begin Model Year | 2012 | 2012 | Model year I/M Program begins |
| End Model Year | 2034 | 2034 | Model year I/M Program ends |
| Inspection Frequency | 1 | 1 | Annual testing; program specifications |
| Test Standards Description | Exhaust OBD Check | Evaporative Gas Cap and OBD Check | Identifies test type |
| Test Standards ID | 51 | 45 | Identifies test with MOVES3 database test standards IDs |
| I/M Compliance | 94.00% for source type 21, 90.35% for source type 31 and 70.74% for source type 32 | | Expected compliance (%) - MOVES3 Default |

Note: Begin Model Year and End Model Year define the range of vehicle model years covered by I/M program.

Table 13-continued

| 2045 | | | |
|---|--|-----------------------------------|---|
| Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant I/M Data | | | |
| I/M Program ID | 20 | 24 | Differentiates I/M programs |
| Pollutant Process ID | 101, 102, 201, 202, 301, 302 | 112 | Identifies the pollutant and vehicle process |
| Source Use Type | 21, 31, 32 | 21, 31, 32 | Identifies the vehicle type |
| Begin Model Year | 2021 | 2021 | Model year I/M Program begins |
| End Model Year | 2043 | 2043 | Model year I/M Program ends |
| Inspection Frequency | 1 | 1 | Annual testing; program specifications |
| Test Standards Description | Exhaust OBD Check | Evaporative Gas Cap and OBD Check | Identifies test type |
| Test Standards ID | 51 | 45 | Identifies test with MOVES3 database test standards IDs |
| I/M Compliance | 94.00% for source type 21, 90.35% for source type 31 and 70.74% for source type 32 | | Expected compliance (%) - MOVES3 Default |

Note: Begin Model Year and End Model Year define the range of vehicle model years covered by I/M program.

Table 14: MOVES3 Emissions Factor Post-Processing to be Performed by County and Year

| Strategy and Post-Processing Result | Analysis Year | Counties |
|--|-------------------------|---------------------------------|
| Texas Low Emission Diesel Fuel (TxLED) | 2023, 2026, 2036 & 2045 | Applied to all modeled counties |

Table 15: Emissions Controls Used for Conformity Credit

| Emission Reduction Strategy and Years Covered | Modeling or Post-Processing Approach | Analysis Year |
|---|--------------------------------------|---------------|
| Intersection Improvements | Post Processed | 2023 |
| Transit Service | TAFT | All |
| High Occupancy Vehicle/Managed Lanes | TAFT | All |
| Park-n-Ride Lots | TAFT/Post Processed | All |
| Vanpools | Post Processed | 2023 |
| Grade Separations | TAFT/Post Processed | All |
| Traffic Signal Improvements | Post Processed | 2023 |
| Intelligent Transportation Systems | Post Processed | 2023 |
| Clean Vehicle Commitments | Post Processed | 2023 |
| Bicycle/Pedestrian Facilities | Post Processed | 2023 |
| Employer Trip Reduction Programs | TAFT | All |
| Sustainable Development | Post Processed | 2023 |
| Public Education/Ozone Season Fare Reduction | Post Processed | 2023 |

Figure 1: 2023 Transportation Conformity Timeline

