1. **Reason for the Transportation Conformity Regional Emissions Analysis**

**(§93.104) Beginning January 18, 2022**

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 this Metropolitan Transportation Plan Update, no significant changes are being proposed to the tolling facilities’ recommendations from Mobility 2045; these tolling facilities’ recommendations are being carried over to the updated plan. As such, there are no plans to update the Regional Toll Analysis for this plan update. However, 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

|  |  |
| --- | --- |
| **Xa** | New Metropolitan Transportation Plan (demographics, horizon year, etc.)  Modify Existing Metropolitan Transportation Plan (interim year adjustments) |
| **Xb** | New or Amended Transportation Improvement Program |
|  | Other |

* 1. Mobility 2045-2022 Update is the update to Mobility 2045 . The horizon year remains 2045. New demographic inputs will be developed for the four analysis years, growing the region to 11.4 million people by 2045. Mobility 2045 2022 Update is expected to include ultimate recommendations from transportation projects identified in Mobility 2045 and will refine those project recommendations for implementation across all modes of transportation. The funding element of this financially constrained plan will incorporate new revenue sources and will seek to strike a balance between tax‐ and toll‐funded infrastructure. Public meetings will be held in February 2022, April 2022, and May 2022. Additional public meetings will be scheduled, if needed, as Mobility 2045‐2022 Update is finalized. The Regional Transportation Council (RTC) is scheduled to take action on the approval of Mobility 2045‐2022 Update in June 2022.
  2. The RTC, is planning to take final action on the 2023-2026 TIP by May 2022. It will then be submitted for inclusion in the STIP in June 2022. The 2023-2026 STIP is anticipated to be approved by the Texas Department of Transportation (TxDOT) in August 2022 and by the Federal Highway Administration in October or November 2022.

Here is a link to the [*federal transportation conformity rule*](https://www.epa.gov/sites/default/files/2016-03/documents/58fr62188.pdf)

1. **Planning Detail (§93.110)**

Table 2: Metropolitan Transportation Plan/Transportation Improvement Program

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

Table 3: Projects

|  |  |
| --- | --- |
| **Project Element** | **Description** |
| Regionally Significant Definition | See definition of Regionally Significant  Roadways document attached. |
| Capacity Changes | Changes are expected in all analysis years due to the addition and modification of project recommendations. |
| Congestion Mitigation and Air Quality Projects | Projects funded with CMAQ funds are included in the TIP. |
| Non-Federal Projects | NCTCOG will identify regionally significant projects in the MTP and TIP that do not receive federal funding (local initiatives, private ventures, etc.). |
| Exempt Projects | NCTCOG will identify 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) | *Dallas-Fort Worth (DFW) 2008 8-Hour Ozone Nonattainment Area Attainment Demonstration (AD) State Implementation Plan (SIP) Revision for the 2017 Attainment Year* (TCEQ Adopted: 07/06/2016; EPA Adequacy Determination for MVEBs Effective: 11/23/2016)[[1]](#footnote-1) |
| Motor Vehicle Emissions Budgets | MVEBs for 2017  (2008 Ozone NAAQS Moderate - Attainment Year AD SIP)  NOX: 130.77 tons/day  VOC: 64.91 tons/day |
| Transportation Control Measures | *Dallas-Fort Worth 1997 8-Hour Ozone Moderate Nonattainment Area Attainment Demonstration State Implementation Plan Revision* (TCEQ Adopted 05/23/07)  *Dallas-Fort Worth Environmental Speed Limit Control Strategy Conversion to a Transportation Control Measure[[2]](#footnote-2)* (TCEQ Adopted 08/25/2010)  *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 1596[[3]](#footnote-3) on 1/09/2014)  *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 Area[[4]](#footnote-4)* (TCEQ Adopted 2/18/2020, EPA Approved 6/17/2020) |

Table 5: Conformity Analysis Years

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

1. **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 | Population estimates for years between 2020 and 2030 are an interpolation between 2020 and the long-term forecast of 2030.  The 2020 population comes from Census 2020.  The long-term forecast is built upon 2005, 2010, and 2015 observed data. County Control totals are based on various independent estimates. Small geographic distribution within counties is based on land use/demographic model, comprehensive plans, and input from local governments. | The long-term forecast is used for 2036 and 2045. | |
| Employment | Employment estimates for years between 2020 and 2030 are an interpolation between 2020 and the long-term forecast for 2030.  The 2020 employment uses 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.  The long-term forecast is built upon 2005, 2010, and 2015 observed data. County Control totals are based on various independent estimates. Small geographic distribution within counties is based on land use/demographic model, comprehensive plans, and input from local government. | The long-term forecast is used for 2036 and 2045. | |
| Other | | N/A | N/A |

1. **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 |

1. **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 (NOX) & 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. | NOX 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]](#footnote-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 |

|  |  |  |
| --- | --- | --- |
| **Fuel Formulation ID** | **Market Share** | **Market Share CV[[9]](#footnote-9)** |
| **14714/14702** | 1 | 0 |
| **30600** | 1 | 0 |

Table 11a: MOVES3 Fuel Supply

Table 11b: MOVES3 Future Year Fuel Properties[[10]](#footnote-10)

|  |  |  |  |
| --- | --- | --- | --- |
| **Fuel Type** | **Gasoline** | | **Diesel** |
| **County Group** | **Core** | **Perimeter** | **All Counties** |
| **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 | - |

Table 12a: 2012 Hourly Temperature Data[[11]](#footnote-11)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Collin** | **Dallas** | **Denton** | **Ellis** | **Johnson** | **Kaufman** | **Parker** | **Rockwall** | **Tarrant** | **Wise** |
| **12:00 AM** | 80.61 | 81.36 | 80.23 | 78.98 | 79.2 | 78.9 | 80.53 | 79.99 | 81.15 | 79.22 |
| **1:00 AM** | 79.47 | 80.19 | 78.93 | 77.86 | 78.07 | 77.84 | 79.14 | 78.77 | 80.07 | 77.97 |
| **2:00 AM** | 78.54 | 79.19 | 77.92 | 76.92 | 77.11 | 76.91 | 77.93 | 77.72 | 78.94 | 77.12 |
| **3:00 AM** | 77.66 | 78.25 | 77.05 | 76.05 | 76.19 | 75.95 | 76.84 | 76.88 | 78.02 | 76.17 |
| **4:00 AM** | 76.86 | 77.42 | 76.21 | 75.19 | 75.28 | 75.18 | 75.83 | 76.03 | 77.17 | 75.07 |
| **5:00 AM** | 76.19 | 76.63 | 75.34 | 74.47 | 74.43 | 74.44 | 75.05 | 75.42 | 76.18 | 74.37 |
| **6:00 AM** | 75.65 | 76.02 | 74.71 | 73.78 | 73.67 | 73.98 | 74.43 | 74.91 | 75.61 | 73.52 |
| **7:00 AM** | 77.00 | 76.88 | 75.85 | 74.48 | 74.35 | 75.93 | 75.03 | 75.34 | 76.55 | 73.68 |
| **8:00 AM** | 79.93 | 79.45 | 78.90 | 77.67 | 77.46 | 79.68 | 77.34 | 77.28 | 79.69 | 76.36 |
| **9:00 AM** | 83.21 | 82.45 | 82.20 | 81.31 | 81.07 | 83.16 | 80.44 | 79.88 | 82.88 | 79.72 |
| **10:00 AM** | 86.03 | 85.51 | 85.09 | 84.61 | 84.46 | 86.38 | 83.39 | 82.62 | 85.66 | 83.04 |
| **11:00 AM** | 88.54 | 88.15 | 87.76 | 87.61 | 87.43 | 89.06 | 86.23 | 85.36 | 88.56 | 85.95 |
| **12:00 PM** | 90.83 | 90.44 | 90.11 | 89.85 | 89.77 | 91.29 | 88.5 | 87.61 | 90.77 | 88.47 |
| **1:00 PM** | 92.48 | 92.24 | 91.82 | 91.57 | 91.6 | 92.89 | 90.13 | 89.58 | 92.32 | 90.44 |
| **2:00 PM** | 93.47 | 93.57 | 92.95 | 92.73 | 92.64 | 93.7 | 91.04 | 90.78 | 93.58 | 91.58 |
| **3:00 PM** | 94.36 | 94.45 | 93.50 | 93.58 | 93.32 | 94.38 | 92.01 | 91.5 | 94.22 | 92.15 |
| **4:00 PM** | 93.99 | 94.37 | 93.58 | 93.92 | 93.55 | 94.3 | 92.52 | 91.93 | 94.34 | 92.64 |
| **5:00 PM** | 93.33 | 93.82 | 93.28 | 93.44 | 93.41 | 93.46 | 92.24 | 91.68 | 93.9 | 92.36 |
| **6:00 PM** | 92.27 | 92.77 | 92.42 | 92.44 | 92.29 | 91.82 | 91.03 | 91.14 | 92.8 | 91.27 |
| **7:00 PM** | 89.96 | 90.80 | 90.16 | 90.22 | 90.39 | 89.13 | 89.25 | 89.51 | 90.84 | 89.38 |
| **8:00 PM** | 86.85 | 88.04 | 87.08 | 86.55 | 87.17 | 85.37 | 86.51 | 86.81 | 87.52 | 86.44 |
| **9:00 PM** | 84.77 | 85.60 | 84.80 | 83.38 | 84.04 | 82.98 | 84.27 | 84.32 | 85.44 | 83.46 |
| **10:00 PM** | 83.21 | 84.04 | 83.17 | 81.53 | 82.05 | 81.44 | 82.85 | 82.67 | 83.94 | 81.64 |
| **11:00 PM** | 81.81 | 82.70 | 81.52 | 80.22 | 80.63 | 79.93 | 81.74 | 81.03 | 82.42 | 80.4 |

Table 12b: 2012 Hourly Relative Humidity Data[[12]](#footnote-12)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Collin** | **Dallas** | **Denton** | **Ellis** | **Johnson** | **Kaufman** | **Parker** | **Rockwall** | **Tarrant** | **Wise** |
| **12:00 AM** | 69.54 | 60.69 | 63.74 | 68.35 | 69.26 | 68.74 | 59.71 | 72.06 | 61.06 | 58.01 |
| **1:00 AM** | 71.95 | 63.47 | 66.61 | 71.14 | 72.59 | 71.22 | 62.70 | 73.33 | 63.28 | 60.89 |
| **2:00 AM** | 73.90 | 65.88 | 69.07 | 73.61 | 75.47 | 73.47 | 65.26 | 75.89 | 66.62 | 63.15 |
| **3:00 AM** | 75.91 | 68.43 | 71.21 | 75.98 | 77.62 | 75.94 | 67.84 | 76.06 | 69.01 | 65.89 |
| **4:00 AM** | 76.87 | 70.70 | 73.33 | 78.32 | 80.95 | 77.98 | 70.47 | 78.94 | 71.03 | 68.55 |
| **5:00 AM** | 78.33 | 73.05 | 75.80 | 80.53 | 83.07 | 80.09 | 72.76 | 79.29 | 73.78 | 70.55 |
| **6:00 AM** | 79.91 | 75.32 | 77.58 | 81.96 | 85.63 | 81.61 | 74.83 | 82.11 | 75.58 | 72.98 |
| **7:00 AM** | 76.05 | 73.87 | 74.96 | 81.16 | 87.13 | 77.65 | 74.46 | 84.11 | 73.72 | 72.82 |
| **8:00 AM** | 68.86 | 68.53 | 67.64 | 73.49 | 82.53 | 69.49 | 68.33 | 83.33 | 66.39 | 67.33 |
| **9:00 AM** | 60.83 | 61.69 | 60.04 | 64.50 | 74.28 | 61.58 | 60.86 | 77.78 | 59.18 | 59.99 |
| **10:00 AM** | 54.34 | 55.04 | 54.04 | 55.86 | 65.85 | 54.19 | 53.86 | 72.00 | 53.54 | 53.20 |
| **11:00 AM** | 49.62 | 49.33 | 48.75 | 48.96 | 57.82 | 48.52 | 47.73 | 65.11 | 47.36 | 47.48 |
| **12:00 PM** | 45.36 | 44.69 | 44.30 | 44.72 | 51.94 | 44.35 | 42.99 | 60.11 | 43.11 | 42.15 |
| **1:00 PM** | 42.25 | 41.33 | 41.16 | 40.88 | 46.45 | 41.29 | 39.41 | 54.26 | 40.28 | 38.31 |
| **2:00 PM** | 39.90 | 38.77 | 38.63 | 38.27 | 42.85 | 39.36 | 37.23 | 50.42 | 37.83 | 36.36 |
| **3:00 PM** | 39.08 | 36.78 | 37.28 | 36.61 | 40.64 | 38.17 | 36.31 | 50.21 | 36.67 | 35.52 |
| **4:00 PM** | 40.18 | 36.67 | 37.28 | 35.98 | 40.19 | 38.42 | 35.40 | 47.42 | 36.57 | 34.44 |
| **5:00 PM** | 40.77 | 37.55 | 37.94 | 36.65 | 39.11 | 39.64 | 35.66 | 47.89 | 36.83 | 34.53 |
| **6:00 PM** | 42.98 | 38.76 | 38.68 | 38.31 | 41.78 | 42.05 | 37.25 | 46.63 | 38.39 | 36.45 |
| **7:00 PM** | 47.67 | 41.66 | 42.59 | 42.65 | 44.07 | 46.54 | 40.05 | 47.11 | 41.35 | 39.22 |
| **8:00 PM** | 54.89 | 47.06 | 48.33 | 49.93 | 49.10 | 53.77 | 45.02 | 53.89 | 47.37 | 43.93 |
| **9:00 PM** | 59.93 | 51.79 | 52.40 | 56.98 | 55.48 | 58.46 | 50.16 | 59.50 | 51.31 | 48.91 |
| **10:00 PM** | 63.42 | 54.67 | 56.11 | 61.61 | 61.49 | 62.13 | 54.02 | 63.94 | 54.48 | 52.36 |
| **11:00 PM** | 66.75 | 57.52 | 60.57 | 64.86 | 64.66 | 66.05 | 56.94 | 71.39 | 58.01 | 55.10 |

Table 12c: 2012 Barometric Pressure Data[[13]](#footnote-13)

|  |  |
| --- | --- |
| **County** | **Barometric Pressure** |
| **Collin** | 29.92 |
| **Dallas** | 29.90 |
| **Denton** | 29.90 |
| **Ellis** | 29.90 |
| **Johnson** | 29.90 |
| **Kaufman** | 29.92 |
| **Parker** | 29.88 |
| **Rockwall** | 29.92 |
| **Tarrant** | 29.90 |
| **Wise** | 29.88 |

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]](#footnote-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. | | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| 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: Mobility 2045-2022 Update, 2023-2026 TIP, and 2022 Transportation Conformity Timeline[[15]](#footnote-15)

April 22, 2022

STTC – Action (Approval of 2023-2026 TIP and Recommendation for RTC Approval) and Info (Mobility 2045 2022 Update and 2022 Transportation Conformity)

Public Meetings – Mobility 2045-2022 Update, 2023-2026 TIP, and 2022 Transportation Conformity (Start of Comment Period for Mobility 2045-2022 Update)

Public Meetings – 2022 Transportation Conformity (Start of Comment Period for 2022 Transportation Conformity)

May 2022

No Later than

November 2022

RTC – Info (Mobility 2045 2022 Update and 2023-2026 TIP)

STTC – Info (Mobility 2045 2022 Update and 2023-2026 TIP)

STTC – Action (Endorsement of Mobility 2045-2022 Update and 2022 Transportation Conformity and Recommendation for RTC Approval)

2023-2026 STIP Anticipated Federal Approval

Executive Board – Action (Endorsement of Mobility 2045-2022 Update, 2023-2026 TIP and 2022 Transportation Conformity)

2016 Transportation Conformity)

Mobility 2045-2022 Update, 2023-2026 TIP and 2022 Transportation Conformity Documents Sent to Partners

Starts Interagency Consultation Review

RTC – Action (Endorsement of Mobility 2045-2022 Update and 2022 Transportation Conformity)

(End of Public Comment Period)

RTC – Action (Approval of 2023-2026 TIP)

Final Pre-Analysis Consensus Plan

USDOT Conformity Determination

October/November 2022

June 23, 2022

June 2022

June 9, 2022

May 12, 2022

March 10, 2022

April 2022

February/March 2022

February 25, 2022

May 27, 2022

1. <https://www.federalregister.gov/d/2016-26957> [↑](#footnote-ref-1)
2. <http://www.tceq.texas.gov/assets/public/implementation/air/sip/dfw/080610/SIP_WEB_06AUG10.pdf> [↑](#footnote-ref-2)
3. <https://www.federalregister.gov/d/2014-00047> [↑](#footnote-ref-3)
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> [↑](#footnote-ref-4)
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. [↑](#footnote-ref-5)
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. [↑](#footnote-ref-6)
7. Per *Code of Federal Regulations* §93.106(a)(1)(i), analysis years cannot be more than 10 years apart. [↑](#footnote-ref-7)
8. Data provided by the TCEQ based on combined data from Leading Environmental Analysis and Display System, NWS, and U.S. Air Force [↑](#footnote-ref-8)
9. Market Share CV – the coefficient variation of the market share [↑](#footnote-ref-9)
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. [↑](#footnote-ref-10)
11. Data provided by the TCEQ based on combined data from LEADS, NWS, and U.S. Air Force. [↑](#footnote-ref-11)
12. Data provided by the TCEQ based on combined data from LEADS, NWS, and U.S. Air Force. [↑](#footnote-ref-12)
13. Data provided by the TCEQ based on combined data from LEADS, NWS, and U.S. Air Force. [↑](#footnote-ref-13)
14. Wise County does not have I/M program. [↑](#footnote-ref-14)
15. Dates are tentative. [↑](#footnote-ref-15)