2022 Transportation Conformity

Appendix 12.12: Interagency Consultation

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

$\mathbf{X_a}$	New Metropolitan Transportation Plan (demographics, horizon year, etc.) Modify Existing Metropolitan Transportation Plan (interim year adjustments)
$\mathbf{X_b}$	New or Amended Transportation Improvement Program
	Other

a. 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.

b. 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*

2. 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]
Motor Vehicle Emissions Budgets	MVEBs for 2017 (2008 Ozone NAAQS Moderate - Attainment Year AD SIP) NO_X: 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] (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] 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] (TCEQ Adopted 2/18/2020, EPA Approved 6/17/2020)

[1] https://www.federalregister.gov/d/2016-26957
[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	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]	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	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

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 Properties[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	-

[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.

Table 12a: 2012 Hourly Temperature Data[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

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

Table 12b: 2012 Hourly Relative Humidity Data[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

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

Table 12c: 2012 Barometric Pressure Data[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

[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.

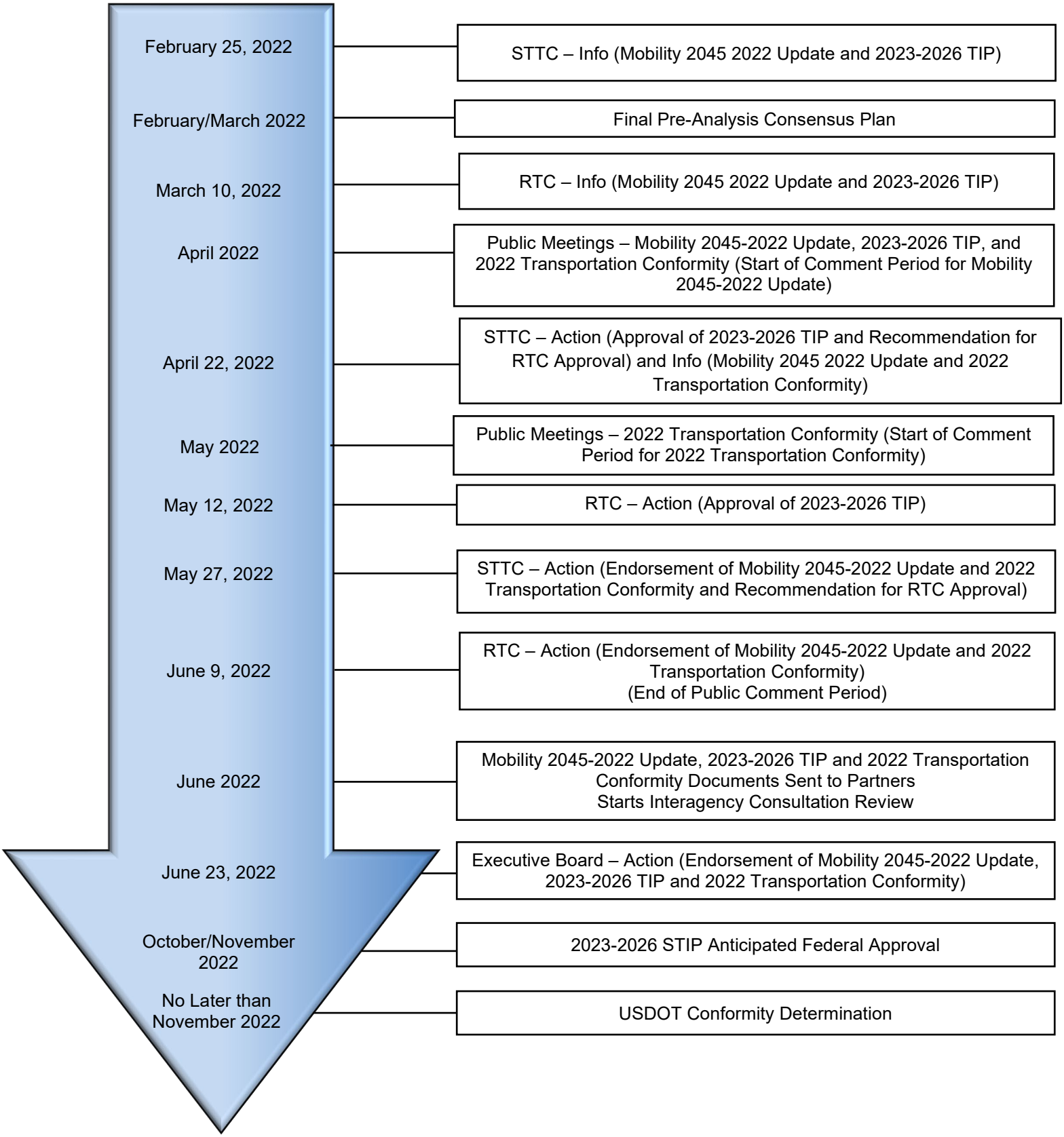
Table 14: MOVES3 Emissions Factor Post-Processing to be Performed by County and Year

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: Mobility 2045-2022 Update, 2023-2026 TIP, and 2022 Transportation Conformity Timeline[15]



[15] Dates are tentative.

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

$\mathbf{X_a}$	New Metropolitan Transportation Plan (demographics, horizon year, etc.) Modify Existing Metropolitan Transportation Plan (interim year adjustments)
$\mathbf{X_b}$	New or Amended Transportation Improvement Program
$\mathbf{X_c}$	State Implementation Plan Requirement (anticipated budgets)
	Other

a. 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.

b. 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.

c. 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 is 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 October 9, 2020, the EPA proposed approval of the RFP MVEBs. The EPA is in the process of deeming the 2020 RFP MVEBs adequate by the summer of 2022. Since this MVEBs

determination falls into the middle of the conformity process, the potential 2020 RFP MVEBs will be used in this conformity.

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
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) Serious Classification Reasonable Further Progress (RFP) (TCEQ Adopted: 03/04/2020; EPA Adequacy Determination for MVEBs Effective: TBD)*
Motor Vehicle Emissions Budgets	Anticipated MVEBs for 2020 (2008 Ozone NAAQS Serious - Attainment Year RFP SIP) NOX: 107.25 tons/day VOC: 62.41 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*[1] (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[2] 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*[3] (TCEQ Adopted 2/18/2020, EPA Approved 6/17/2020)

[1] http://www.tceq.texas.gov/assets/public/implementation/air/sip/dfw/080610/SIP_WEB_06AUG10.pdf
[2] https://www.federalregister.gov/d/2014-00047
[3] 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	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[4]	2023
Intermediate Analysis Year[5]	2026
Intermediate Analysis Year[6]	2036
Last Year of Transportation Plan (MTP)	2045
Interpolation Years	N/A
Other	N/A

[4] 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.

[5] 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.

[6] 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	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

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*)[7]
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

[7] 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[8]
14714/14702	1	0
30600	1	0

Table 11b: MOVES3 Future Year Fuel Properties[9]

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	-

[8] Market Share CV – the coefficient variation of the market share

[9] 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.

Table 12a: 2011 Hourly Temperature Data[10]

	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

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

Table 12b: 2011 Hourly Relative Humidity Data[11]

	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

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

Table 12c: 2011 Barometric Pressure Data[12]

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

[12] 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[13]			
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.

[13] 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.

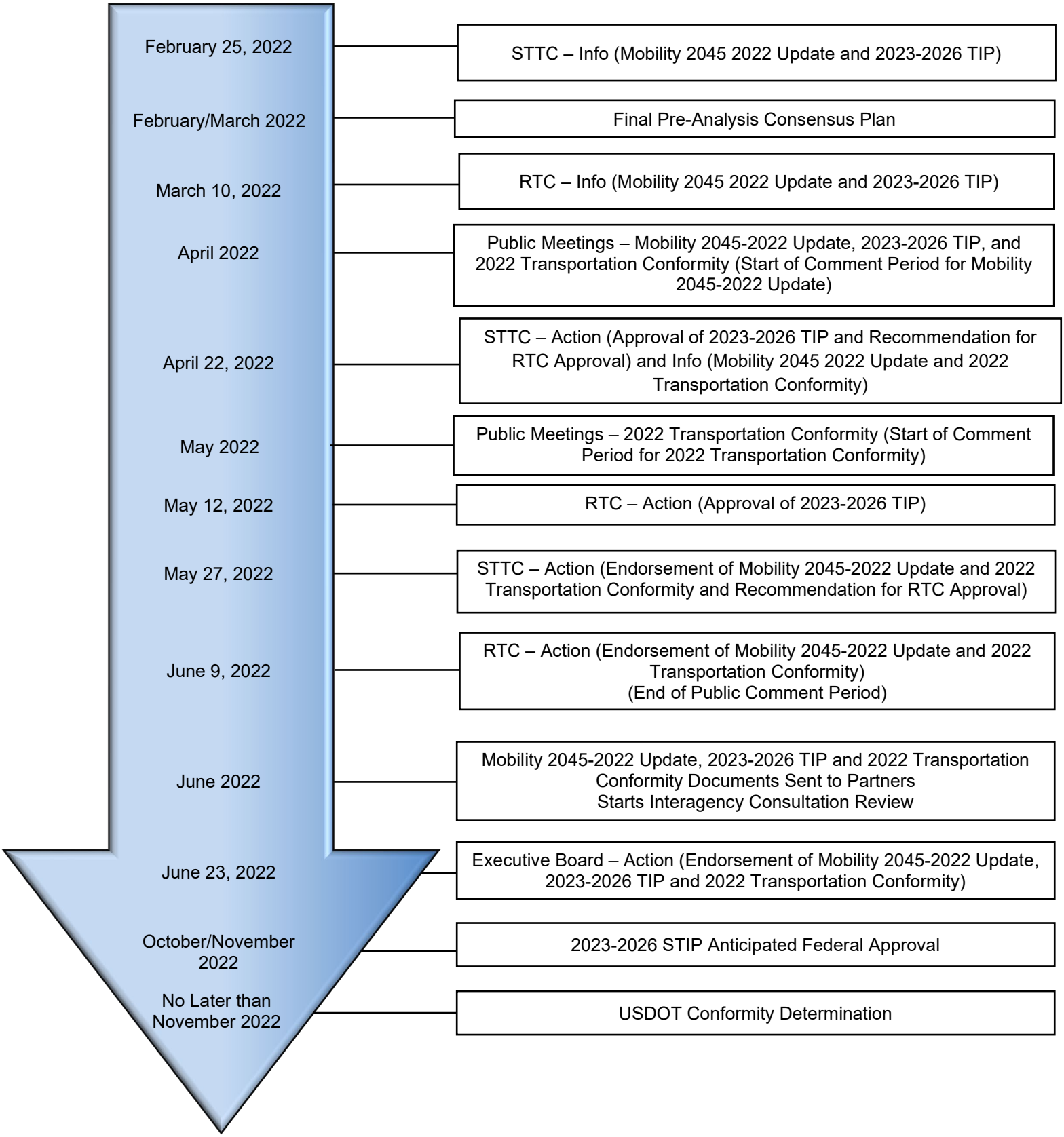
Table 14: MOVES3 Emissions Factor Post-Processing to be Performed by County and Year

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: Mobility 2045-2022 Update, 2023-2026 TIP, and 2022 Transportation Conformity Timeline[14]



[14] Dates are tentative.