2018 Transportation Conformity

Appendix 12.12: Interagency Consultation

1. Reason for the Transportation Conformity Regional Emissions Analysis (§93.104) Beginning May 18, 2017

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

Any Metropolitan Planning Organizations (MPO) required to prepare a Regional Toll Analysis, and/or initiate a conformity process, should coordinate with their own MPO to determine IF an update to the Regional Toll Analysis may be required due to new or revised projects. No documentation as to the status of a Regional Toll Analysis is required as part of the conformity documentation.

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
$\mathbf{X_d}$	Newly Designated Nonattainment Area
	Other

a. Mobility 2045: The Metropolitan Transportation Plan for North Central Texas (Mobility 2045) is the new metropolitan transportation plan (MTP) currently under development for the North Central Texas region. The horizon year will be extended to the year 2045. New demographic inputs will also be developed for the additional five years, growing the region to 11.2 million people by 2045. Mobility 2045 is expected to include ultimate recommendations from transportation projects identified in previous MTPs, and will also identify new projects 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. Additional changes will include results from the 85th Texas Legislative Session, incorporation of House Bill 20 10-year planning effort, consistency with environmental documentation, and possible inclusion of new federal and state performance measures. Three series of public meetings will be held in May 2017, Fall 2017, and Spring 2018. Additional public meetings will be scheduled, if needed, as Mobility 2045 is finalized. The Regional Transportation Council (RTC) is scheduled to take action on the approval of Mobility 2045 in June 2018.

b. The Transportation Improvement Program (TIP) is developed in accordance with the metropolitan planning requirements set forth in the Statewide Metropolitan Planning Final Rule (CFR, Title 23, Part 450; CFR, Title 49, Part 613). The Dallas-Fort Worth (DFW) area's nonattainment designation requires regionally significant surface transportation projects to be inventoried in the TIP. Deadlines for TIP development and submittal are set through the Statewide Transportation Improvement Program (STIP) schedule. The TIP is modified quarterly and a new TIP is developed every two years. Due to this schedule, development or amendments of the TIP may not share the same schedule as the MTP and conformity analysis. However, once the MTP and conformity are approved, projects in the TIP can be amended to conform. Projects in the TIP will be consistent with the Mobility 2045 and the November 2018 conformity. The RTC, serving as the transportation policy board of the Metropolitan Planning Organization for the Dallas-Fort Worth area, is planning to take final action on the 2019-2022 TIP by May 2018. It will then be submitted for

inclusion in the STIP in June 2018. The 2019-2022 STIP is anticipated to be approved by the Texas Department of Transportation (TxDOT) in August 2018 and by the Federal Highway Administration in October or November 2018.

c. On August 5, 2016, the Texas Commission on Environmental Quality (TCEQ) submitted a revision to the Dallas-Fort Worth Attainment Demonstration State Implementation Plan (AD SIP) revision for the 2008 ozone 8-hour National Ambient Air Quality Standards (NAAQS), which contained new 2017 Motor Vehicle Emission Budgets (MVEBs). On November 8, 2016, the Environmental Protection Agency (EPA) published a Notice of Adequacy for the 2017 MVEBs for the purpose of transportation conformity only, with an effective date of November 23, 2016.[1] 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.

d. On October 26, 2015, the EPA published the 2015 ozone NAAQS final rule, lowering the standard to less than or equal to 70 parts per billion. [2] The EPA sent letters notifying states of the agency's intended nonattainment designations under the 2015 ozone NAAQS on December 20, 2017. Since final designations cannot occur earlier than 120 days from the date the EPA sent the letter to each state, the anticipated final designations should be announced in April 2018. On January 5, 2018, the EPA published the list of counties designated attainment/unclassifiable under the 2015 ozone NAAQS[3]. No additional counties were added to the DFW ten-county nonattainment region. On April 30, 2018, EPA took final action on designation under the 2015 ozone standard[4]. Rockwall County is not part of the DFW 2015 ozone nonattainment region.

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	2018-2045
2019–2022 Transportation Improvement Program (TIP) for North Central Texas	2019-2022

[1] 81 FR 78591
[2] 80 FR 65291
[3] 83 FR 651
[4] https://www.epa.gov/ozone-designations/additional-designations-2015-ozone-standards

Table 3: Projects

Project Element	Description
Regionally Significant Definition	See definition of Regionally Significant Roadways document attached.
Capacity Changes	Changes are expected in interim and horizon years due to the addition and modification of project recommendations.
Congestion Mitigation and Air Quality (CMAQ) 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 Eight-Hour Ozone Nonattainment Area Attainment Demonstration (AD) State Implementation Plan (SIP) Revision for the 2017 Attainment Year* (Adopted 07/06/2016; Adequacy Determination for MVEBs Effective 11/23/2016)[5]
Motor Vehicle Emissions Budgets	MVEBs for 2017 Attainment Year AD SIP VOC: 64.91 tons/day NO_X: 130.77 tons/day
Transportation Control Measures	*Dallas-Fort Worth 1997 Eight-Hour Ozone Moderate Nonattainment Area Attainment Demonstration State Implementation Plan Revision* (Adopted 05/23/07) *Dallas-Fort Worth Environmental Speed Limit Control Strategy Conversion to a Transportation Control Measure*[6] (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* (Approved in 79 FR 1596[7] on 1/09/2014) *HOV Lane TCM Replaced with Traffic Signalization Projects* (Adopted 5/31/2016; Approved 11/09/2016)

[5] https://www.federalregister.gov/d/2016-26957
[6] http://www.tceq.texas.gov/assets/public/implementation/air/sip/dfw/080610/SIP_WEB_06AUG10.pdf
[7] https://www.federalregister.gov/d/2014-00047

Table 5: Conformity Analysis Years

Requirement	Year
Conformity Base Year	N/A
Attainment Dates	July 20, 2018, for 10 counties under the 2008 ozone NAAQS July 20, 2021 for the 9 counties under the 2015 ozone NAAQS
Last Year of Maintenance Plan	N/A
Motor Vehicle Emissions Budget Years[8]	2017 (AD SIP MVEBs for 2008 ozone NAAQS)
First Analysis Year[9]	2018
2015 Ozone NAAQS Attainment Year	2020 for 9 counties under the 2015 8-hour standard
Intermediate Analysis Year(s)[10]	2028 & 2037
Last Year of Transportation Plan (MTP)	2045
Interpolation Years	N/A
Other	N/A

[8] MVEBs used for conformity analysis will be based on which set of budgets EPA has found adequate by December 1, 2015.
[9] 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.
[10] 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	2018 Analysis Year Detail and Source of Data	2020, 2028, and 2037 Analysis Years Detail and Source of Data	2045 Analysis Year Detail and Source of Data
Population	Based on 2014–2016 annual estimates of resident population for county household population. 2015 5-year ACS[11] population estimates used for distribution of population at the sub-county geography.	Control totals[12] for the region based on various independent estimates[13]. District level distribution of population based on long-range forecasting model built upon 2000, 2005, and 2010 observed data. Small geographic distribution is based on local comprehensive plans.	County control totals based on various independent estimates. Small geographic distribution is based on holding capacity defined by comprehensive plans and rate of growth after 2040 allocations.
Employment	Based on the 2010 census and the 2014 Bureau of Economic Analysis county level estimates. Distribution of employment based on modified 2010 LEHD[14] data.	Control totals for the region are based on various independent estimates. District level distribution of employment is based on long-range forecasting model built upon 2000, 2005, and 2010 observed data. Small geographic distribution is based on local comprehensive plans.	County control totals based on various independent estimates. Small geographic distribution is based on holding capacity defined by comprehensive plans and rate of growth after 2040 allocations
Other	N/A	N/A	N/A

[11] American Community Survey
[12] Control Totals – total household population and employment for the region
[13] State of Texas Data Center, Water Development Board, independent consultants, and NCTCOG estimates
[14] Longitudinal Employer-Household Dynamics

4. Activity Detail

Table 7: Travel Demand Model

Model Factor	Detail and Methodology
Model Validation Year	2010 roadway/2014 transit
Software	TransCAD, DFX
Vehicle Miles Travel (VMT) Adjustments (Highway Performance Monitoring System (HPMS) Factor)	0.9703
Seasonal Correction Factor	Represents summer weekday from non-summer weekday activities; based on an average from 2012-2016 TxDOT Automatic Traffic Recorder (ATR) factors. (*See Table 8)*
Hourly Distribution Factors	Regionally specific hourly VMT distributions reflected in the hourly link-VMT estimates; based on 2012-2016 TxDOT ATR factors. *(See Table 9)*
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

Table 8: Average Seasonal Correction Factors (2012-2016)

	County Type	Factors (Midweek)
Midweek School to August	Core/Urban (Dallas/Tarrant)	1.014
	Rural (Collin/Denton)	1.009
	Perimeter (Ellis, Johnson, Kaufman, Rockwall, Parker, and Wise)	1.042

Table 9: Average Hourly Distribution Factors (2012-2016)

Hours	County Groups		
	Core/Urban	Rural	Perimeter
12:00 a.m. – 12:59 a.m.	0.94%	0.68%	1.08%
1:00 a.m. – 1:59 a.m.	0.61%	0.44%	0.83%
2:00 a.m. – 2:59 a.m.	0.56%	0.36%	0.76%
3:00 a.m. – 3:59 a.m.	0.62%	0.35%	0.90%
4:00 a.m. – 4:59 a.m.	1.11%	0.61%	1.40%
5:00 a.m. – 5:59 a.m.	2.96%	1.73%	2.81%
6:00 a.m. – 6:29 a.m.	2.90%	2.21%	2.32%
6:30 a.m. – 6:59 a.m.	2.90%	2.21%	2.32%
7:00 a.m. – 7:59 a.m.	7.14%	6.38%	6.08%
8:00 a.m. – 8:59 a.m.	6.31%	6.42%	5.49%
9:00 a.m. – 9:59 a.m.	5.16%	5.32%	5.30%
10:00 a.m. – 10:59 a.m.	4.77%	4.89%	5.47%
11:00 a.m. – 11:59 a.m.	4.95%	5.24%	5.61%
12:00 p.m. – 12:59 p.m.	5.20%	5.65%	5.74%
1:00 p.m. – 1:59 p.m.	5.36%	5.76%	5.94%
2:00 p.m. –2:59 p.m.	5.79%	5.91%	6.27%
3:00 p.m. – 3:59 p.m.	6.55%	6.45%	6.74%
4:00 p.m. – 4:59 p.m.	7.33%	7.38%	7.33%
5:00 p.m. – 5:59 p.m.	7.52%	8.34%	7.53%
6:00 p.m. – 6:29 p.m.	3.15%	3.80%	2.92%
6:30 p.m. – 6:59 p.m.	3.15%	3.80%	2.92%
7:00 p.m. – 7:59 p.m.	4.60%	5.52%	4.35%
8:00 p.m. – 8:59 p.m.	3.55%	4.08%	3.46%
9:00 p.m. – 9:59 p.m.	3.02%	3.16%	2.78%
10:00 p.m. – 10:59 p.m.	2.31%	2.08%	2.10%
11:00 p.m. – 11:59 p.m.	1.55%	1.21%	1.55%

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

- Development of Emission Factors:

  NCTCOG will use the MOVES2014a 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:	MOVES2014a
Analysis Year Runs:	2018, 2020, 2028, 2037, 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 23-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:	July 2014

- MOVES2014a inputs:

Table 10: MOVES2014a Modeled Pollutants

Command	Function/Description	Input Parameter Source/Value
Pollutant	Defines the basic set of pollutants to report.	NO_X and VOC

Table 11: MOVES2014a External Conditions

Command	Function/Description	Input Parameter Values	Description
MOVES Model Version	Identifies the model version to be utilized for the analysis.	MOVES2014a	MOVES2014a, updated December 2017
Calendar Year(s)	Identifies calendar year for which emissions factors are to be calculated. (Required to run model)	2018, 2020, 2028, 2037 and 2045	Attainment demonstration years and plan forecast years
Evaluation Month	Provides option of calculating emissions factors for each month of the calendar year	7	Representing summer ozone season

Table 12: MOVES2014a 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. Texas A&M Transportation Institute's (TTI) MOVESpopulationBuild module is used to convert MOVES2014a based Texas Department of Motor Vehicles (TxDMV) registration data for each county into 13 MOVES SUT population.	2014 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.	2014 TxDMV registration data; MOVES default used for buses
Vehicle Type VMT	County specific VMT is distributed to 6 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
Ramp Fraction	Input county specific fraction of ramp driving time on rural and urban restricted roadway 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 13.a*)
Meteorology	County specific data on temperature and humidity.	Regional data from TCEQ (*See Table 14*)[15]
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 13.b*)
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.	*See Table 15*
Fuel Engine Fraction/Diesel Fraction	Input fuel engine fractions (i.e. Gasoline vs. Diesel Engines types in the vehicle population) for all vehicle types.	2014 TxDMV registration data; MOVES default used for light-duty vehicles and buses; 12-County regional data applied for heavy-duty vehicles

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

Table 13.a: MOVES2014a Fuel Supply

Fuel Formulation ID	Market Share	Market Share CV[16]
18724/18734	1	0
30011	1	0

Table 13.b: MOVES2014a Future Year Fuel Properties

Fuel Type	Gasoline[17]		Diesel[18]
County Group	**Core[19]**	**Perimeter[20]**	**All Counties[21]**
Fuel Formulation ID	18724	18734	30011
Fuel Subtype ID	12	12	20
RVP	7.00	7.80	0.00
Sulfur Level	10.00	10.00	11.00
ETOH Volume	9.67	9.66	0.00
MTBE Volume	0.00	0.00	0.00
ETBE Volume	0.00	0.00	0.00
TAME Volume	0.00	0.00	0.00
Aromatic Content	14.74	25.35	0.00
Olefin Content	10.74	8.33	0.00
Benzene Content	0.46	0.61	0.00
e200	49.21	49.45	0.00
e300	85.13	82.68	0.00
Vol to Wt Percent Oxy	0.3653	0.3653	N/A
BioDieselEster Volume	0.00	0.00	N/A
Cetane Index	0.00	0.00	N/A
PAH Content	0.00	0.00	N/A
T50	202.52	203.73	0.00
T90	325.77	327.68	0.00

[16] Market Share CV – the coefficient variation of the market share
[17] TTI produced these fuel formulation estimates using local summer 2017 fuel survey sample data (TCEQ survey by ERG for non-RFG counties and EPA Texas RFG survey data). The overall average fuel properties for each region were calculated using the standard procedure of aggregating and averaging by fuel grade (regular [RU], mid-grade [MU], and premium [PU]), and combining them into the final overall averages using latest available statewide gasoline relative sales volumes by grade (U.S. Energy Information Administration: RU – 0.88; MU – 0.062; PU – 0.058).
[18] TTI produced diesel average sulfur estimates using the summer 2017 TCEQ fuel survey diesel sample data by aggregating and averaging sulfur content values for Texas Low-Emission Diesel (TxLED) counties.
[19] EPA Texas RFG survey data, sulfur level set to Tire 3 Rule regulated value.
[20] RVP modified to the TCEQ low RVP regulated value of 7.8 for 95 east Texas counties, and no RVP buffer for ethanol applied because the one pound waiver is only for counties with a federally regulated RVP level, sulfur level set to Tire 3 Rule regulated value.
[21] Future year diesel fuel parameters are the MOVES defaults modified to reflect consistency with the federal low sulfur diesel rule, fuel survey data, and diesel fuel properties used in SIP emission inventory development.

Table 14: 2012 Hourly Meteorological Data[22]

Hours	Temperature	Relative Humidity
12:00 a.m.	80.02	65.12
1:00 a.m.	78.83	67.72
2:00 a.m.	77.83	70.23
3:00 a.m.	76.91	72.39
4:00 a.m.	76.02	74.71
5:00 a.m.	75.25	76.73
6:00 a.m.	74.63	78.75
7:00 a.m.	75.51	77.59
8:00 a.m.	78.38	71.59
9:00 a.m.	81.63	64.07
10:00 a.m.	84.68	57.19
11:00 a.m.	87.47	51.07
12:00 p.m.	89.76	46.37
1:00 p.m.	91.51	42.56
2:00 p.m.	92.60	39.96
3:00 p.m.	93.35	38.73
4:00 p.m.	93.51	38.26
5:00 p.m.	93.09	38.66
6:00 p.m.	92.03	40.13
7:00 p.m.	89.96	43.29
8:00 p.m.	86.83	49.33
9:00 p.m.	84.31	54.49
10:00 p.m.	82.65	58.42
11:00 p.m.	81.24	62.19

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

Table 15: MOVES2014a I/M Descriptive Inputs for Subject Counties

2018					
Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant I/M Data[23]					
I/M Program ID	20	21	23	24	Differentiates I/M programs
Pollutant Process ID	101, 102, 201, 202, 301, 302	101, 102, 201, 202, 301, 302	112	112	Identifies the pollutant and vehicle process
Source Use Type	21, 31, 32	21, 31, 32	21, 31, 32	21, 31, 32	Identifies the vehicle type
Begin Model Year[24]	1996	X	X	1996	Model year I/M Program begins
End Model Year[25]	Y	1995	1995	Y	Model year I/M Program ends
Inspection Frequency	1	1	1	1	Annual testing; program specifications
Test Standards Description	Exhaust OBD Check	ASM[26] 2525/5015 Phase-in Cut points	Evaporative Gas Cap Check	Evaporative Gas Cap and OBD Check	Identifies test type
Test Standards ID	51	23	41	45	Identifies test with MOVES2014a database test standards IDs
I/M Compliance	93.12% for source type 21, 91.26% for source type 31 and 85.67% for source type 32[27]				Expected compliance (%)

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

[23] Wise County does not have I/M program.
[24] Begin Model Year, represented by "X" is calculated as "Year ID"-24.
[25] End Model Year, represented by "Y" is calculated as Year ID-2.
[26] ASM – Acceleration Simulation Mode
[27] https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100NN9L.txt

Table 15-continued

2020			
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	1996	1996	Model year I/M Program begins
End Model Year	Y	Y	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 MOVES2014a database test standards IDs
I/M Compliance	93.12% for source type 21, 91.26% for source type 31 and 85.67% for source type 32		Expected compliance (%)

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

Table 15-continued

2028			
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	1996	1996	Model year I/M Program begins
End Model Year	Y	Y	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 MOVES2014a database test standards IDs
I/M Compliance	93.12% for source type 21, 91.26% for source type 31 and 85.67% for source type 32		Expected compliance (%)

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

Table 15-continued

2037			
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	1996	1996	Model year I/M Program begins
End Model Year	Y	Y	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 MOVES2014a database test standards IDs
I/M Compliance	93.12% for source type 21, 91.26% for source type 31 and 85.67% for source type 32		Expected compliance (%)

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

Table 15-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	1996	1996	Model year I/M Program begins
End Model Year	Y	Y	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 MOVES2014a database test standards IDs
I/M Compliance	93.12% for source type 21, 91.26% for source type 31 and 85.67% for source type 32		Expected compliance (%)

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

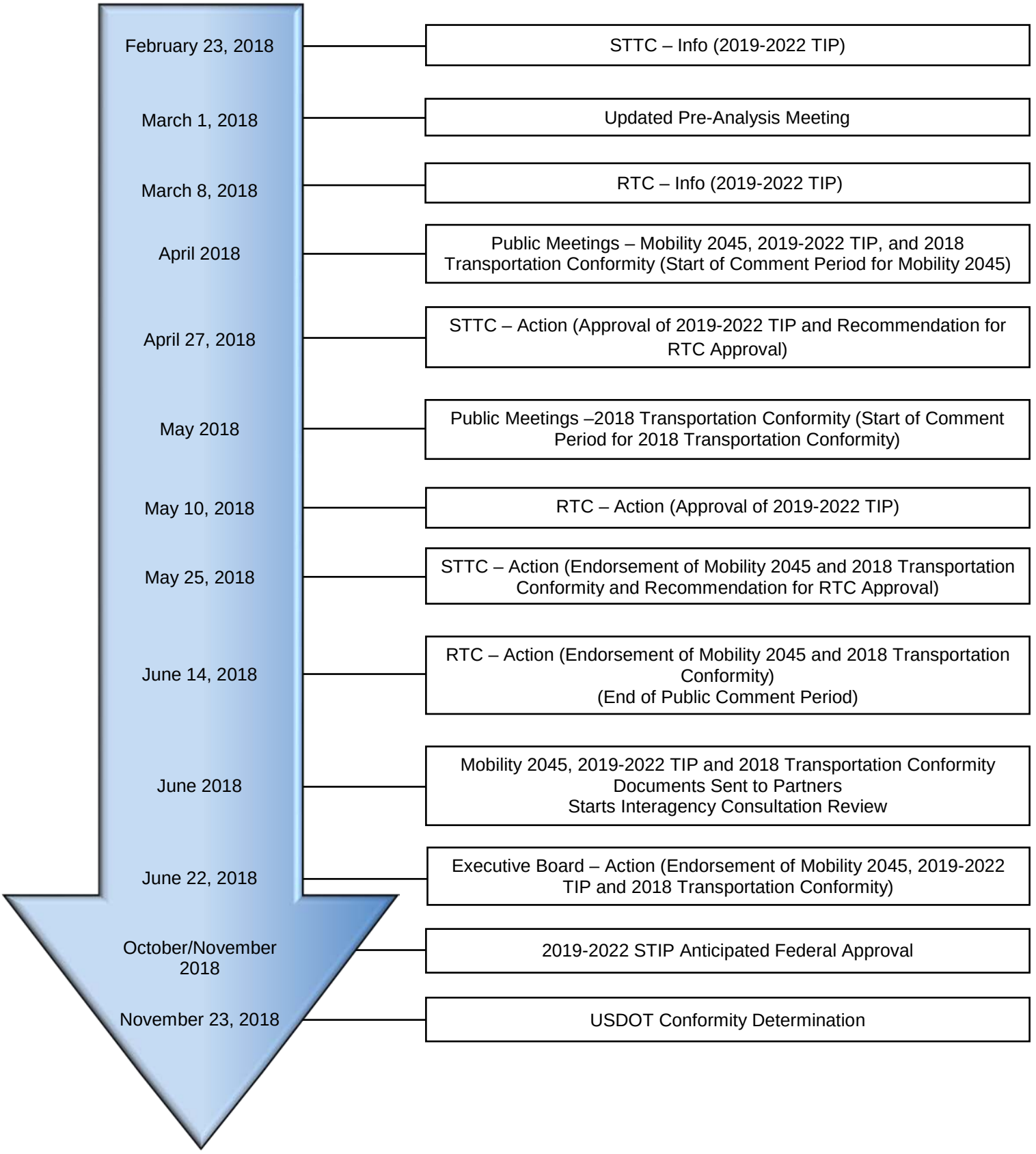
Table 16: MOVES2014a Emissions Factor Post-Processing to be Performed by County and Year

Strategy and Post-Processing Result	Analysis Years	Counties
Texas Low Emission Diesel Fuel (TxLED)	2018, 2020, 2028, 2037, and 2045	Applied to all modeled counties

Table 17: Emissions Controls Used for Conformity Credit

Emission Reduction Strategy and Years Covered	Modeling or Post-Processing Approach	Analysis Year
Intersection Improvements	Post Processed	2018
Transit Service	DFX	All
High Occupancy Vehicle / Managed Lanes	DFX	All
Park-n-Ride Lots	DFX/Post Processed	All
Vanpools	Post Processed	2018
Grade Separations	DFX/Post Processed	All
Traffic Signal Improvements	Post Processed	2018
Intelligent Transportation Systems	Post Processed	2018
Clean Vehicle Commitments	Post Processed	2018
Bicycle/Pedestrian Facilities	Post Processed	2018
Employer Trip Reduction Programs	DFX	All
Vehicle Retirement Program	Post Processed	2018
Sustainable Development	Post Processed	2018
Public Education/ Ozone Season Fare Reduction	Post Processed	2018

Figure 1: Mobility 2045, 2019-2022 TIP Timeline, and 2018 Transportation Conformity [28]



[28] Dates are tentative.