El Paso Metropolitan Planning Organization

TRANSPORTATION CONFORMITY REPORT

Amended RMS2050 Metropolitan Transportation Plan and RMS 2023-2026 Transportation Improvement Program

5/23/2024

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EL PASO METROPOLITAN PLANNING ORGANIZATION
TRANSPORTATION POLICY BOARD
RESOLUTION ADOPTING THE TRANSPORTATION CONFORMITY REPORT FOR THE AMENDED RMS2050 METROPOLITAN TRANSPORTATION PLAN (MTP) AND RMS 2023-2026 TRANSPORTATION IMPROVEMENT PROGRAM (TIP) FOR THE PARTICULATE MATTER NONATTAINMENT AREA, AND THE NONATTAINMENT AREA UNDER THE 2015 OZONE NATIONAL AMBIENT AIR QUALITY STANDARD

A conformity determination has been made that the Amended Metropolitan Transportation Plan (MTP) and Transportation Improvement Program (TIP) have met the requirements for Particulate Matter of 10 Microns or less in size (PM_{10}), and Ozone (O_3) reductions set forth in the U.S. Environmental Protection Agency's (EPA's) final rule on conformity. Therefore, the MTP and TIP have been determined to:

(i) be consistent with the most recent estimates of mobile source emissions;
(ii) provide for expeditious implementation of transportation control measures in the applicable implementation plan;
(iii) meet the requirements of the Transportation Conformity Guidance for 2015 Ozone National Ambient Air Quality Standards (NAAQS) Nonattainment Areas, and
(iv) contribute to annual emissions reductions consistent with sections 182(b)(1) and 187(a)(7) with respect to PM_{10} and O_3.

It is therefore shown that the El Paso Metropolitan Planning Area's Amended RMS 2050 MTP and the RMS 2023-2026 TIP are in conformity under the Federal Clean Air Act Amendments of 1990 (FCAA).

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GLOSSARY OF ABBREVIATIONS

APU	Auxiliary Power Unit
ATOM2	Texas Spatially Disaggregate Trip Distribution Model (Atomistic Model)
ATP	Anti-Tampering Program
ATR	Automatic Traffic Recorder
BBER	Bureau of Business and Economic Research
CD	Compact Disc
CFR	Code of Federal Regulations
CMAQ	Congestion Mitigation & Air Quality Improvement Program
CMP	Congestion Management Process
CNG	Compressed Natural Gas
CO	Carbon Monoxide
CO_2	Carbon Dioxide
DPS	Department of Public Safety
EF	Emissions Factor
EMFAC	Emissions Factor Model
EMSCALC	Emissions Calculation Program
EPA	U.S. Environmental Protection Agency
EPMPO	El Paso Metropolitan Planning Organization
FCAA	Federal Clean Air Act and Federal Clean Air Act Amendments of 1990
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FY	Fiscal Year
GC	Gas Cap
HC	Hydrocarbons
HDV	Heavy-Duty Vehicle
HPMS	Highway Performance Monitoring System
I/M	Inspection/Maintenance Program
LDV	Light Duty Vehicle
LOS	Level of Service
LPG	Liquefied Petroleum Gas
MOBILE	EPA-approved emissions modeling software
MOVES	MOtor Vehicle Emission Simulator
MOSERS	Mobile Source Emission Reduction Strategies
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan
MVEB	Motor Vehicle Emission Budget
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NMDOT	New Mexico Department of Transportation
NMED	New Mexico Environment Department
NOx	Nitrogen Oxides
OBD	On-Board Diagnostics
$PM_{2.5}$	Particulate Matter 2.5 Microns or Less
PM_{10}	Particulate Matter 10 Microns or Less

PPP	Public Participation Program
RVP	Fuel Reid Vapor Pressure
ROW	Right of Way
SED	Socioeconomic and demographic data
SHI	Source-hours-extended-idling
SHO	Source hours operating
SHP	Source-hours-parked
SIP	State Implementation Plan
SUT	Source use types
TAZ	Traffic Analysis Zone
TERM	Transportation Emission Reduction Measures
TCM	Transportation Control Measure
TCEQ	Texas Commission on Environmental Quality
TCR	Transportation Conformity Report
TDM	Travel Demand Model
TIP	Transportation Improvement Program
TMA	Transportation Management Area
TPAC	Transportation Project Advisory Committee
TPB	Transportation Policy Board
TPEPP	Texas Populations Estimates and Projection Programs
TransCAD	Transportation GIS Software
TRANSVMT	Utility post-processing TDM
TRIPCAL5	Trip Generation Program
TSI	Two-Speed Idle
TTI	Texas A&M Transportation Institute
TWC	Texas Workforce Commission
TWG	Technical Working Group
TxDMV	Texas Department of Motor Vehicles
TxDOT	Texas Department of Transportation
TxDOT TP&P	Texas Department of Transportation Planning and Programming Division
UE	User equilibrium
UPWP	Unified Planning Work Program
USC	United States Code
UTP	Unified Transportation Program
VMEP	Voluntary Mobile Emissions Reduction Programs
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

EXECUTIVE SUMMARY

In the fall of 2023, the El Paso MPO identified a need to amend the RMS documents, which would require a new conformity determination. A total of nine (9) projects have been identified to require amendments to their scope and/or limits (Appendix K- TDM Amendment Memorandum). The air quality conformity analysis performed for the Amended RMS 2050 Metropolitan Transportation Plan (MTP) and the RMS 2023-2026 Transportation Improvement Program (TIP) demonstrates that the projected emissions of Particulate Matter 10 Microns or Less (PM_{10}) conform to the Motor Vehicle Emissions Budget (MVEB) enacted by the Texas Commission on Environmental Quality (TCEQ) and approved by the U.S. Environmental Protection Agency (EPA). For the purpose of this conformity determination, and per guidance from the consultative partners, regional emissions analysis for Carbon Monoxide (CO) was not conducted, based upon the EPA approval of the El Paso CO Limited Maintenance Plan (LMP) in September 2017. In accordance with the CO LMP, a regional emissions analysis for analysis years beyond 2020 is not required. In addition, the air quality conformity analysis demonstrates that the projected emissions of Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx) (Ozone) for the non-attainment area meet the requirements approved by the EPA for the 2015 Ozone National Ambient Air Quality Standard (NAAQS). Per guidance from the consultative partners, an interim emissions test no-greater-than baseline-year was developed for the portion of Doña Ana County near Sunland Park, NM non-attainment area and a budget test was developed for El Paso County using one-hour budget. The interagency consultative partners have elected to evaluate El Paso County NOx and VOC emissions as part of this conformity analysis in case EPA issues a nonattainment designation for El Paso County in response to the D.C. Circuit decision before completion of this conformity process. The VOC and NOx budget is based on the 1996 one-hour ozone SUPER SIP.

This transportation conformity analysis was obtained by projecting vehicle miles and hours traveled from the Transportation GIS Software (TransCAD) Travel Demand Model (TDM), calculating emissions of these vehicles using the MOtor Vehicle Emission Simulator (MOVES 3.1.0) (released November 2020) and AP-42 section 13.2.1 models (EPA, January 2011), and comparing the results to the MVEB for the County of El Paso, Texas for the VOC, NOx and PM10 pollutants, and comparing the results of the 2017 baseline year against the analysis years 2022, 2027, 2032, 2040 and 2050 according to the interim emissions test no-greater-than-baseline-year for the portion of Doña Ana County near Sunland Park, NM non-attainment area .

The RMS 2050 MTP is a 28-year plan with approximately $9B of multimodal projects and programs included in fiscal years (FY) 2022-2050. The El Paso Metropolitan Planning Organization (EPMPO) study areas stretches across the state line between Texas and New Mexico, including El Paso County in Texas, Southern Dona Ana County, and a portion of Otero County in New Mexico. Facilitating the movement of people and goods throughout the region over this period of time presents numerous challenges from a financial standpoint. Projects and programs in the Texas portion of the EPMPO study area are approximately $7B. Transit projects come to approximately $1B. New Mexico projects total approximately $416M. See Appendix C, for the financial summary and project list, which demonstrates a thorough comparison of project revenues and associated project costs in the Amended RMS 2050 MTP.

The Amended RMS 2050 MTP, RMS 2023-2026 TIP and Transportation Conformity Report will be presented to the EPMPO Transportation Policy Board (TPB) on Friday, June 21th 2024 for adoption.

Networks

The TDM has a validated 2017 base year and forecast network years of 2022,2027, 2032, 2040 and 2050. The forecast years incorporate projects currently in the MTP and TIP. The model outputs were then sent to the Texas A&M Transportation Institute (TTI) for emissions analysis.

Conformity Requirements

The TCEQ and New Mexico Environmental Department (NMED) prepared State Implementation Plans (SIPs), and TCEQ prepared the SIP required for marginal nonattainment areas for the Ozone nonattainment area as described in the following subsections:

El Paso CO Limited Maintenance Plan

There have been no monitored violations of the CO eight-hour standard since 2001. The maintenance plan approved by EPA in August 2008 (effective on October 3, 2008), demonstrates that El Paso will remain in attainment of the CO standard for at least ten years following EPA approval. This maintenance plan includes a commitment to submit a second 10-year maintenance plan two years before the end of the first 10-year maintenance plan period. This was satisfied by a limited maintenance plan that was adopted by the TCEQ September 7, 2016 and approved by EPA September 8, 2017, effective October 10, 2017. The maintenance plan ensures that the area remains in attainment of the CO standard. The maintenance area boundary is described in the EPA Green Book as follows: "That portion of the City of El Paso bound on the north by Highway 10 from Porfirio Diaz Street to Raynolds Street, Raynolds Street from Highway 10 to the Southern Pacific Railroad lines, the Southern Pacific Railroad lines from Raynolds Street to Highway 62, Highway 62 from the Southern Pacific Railroad lines to Highway 20 and Highway 20 from Highway 62 to Polo Inn Road; bound on the east by Polo Inn Road from Highway 20 to the Texas Mexico border; bound from the south by the Texas-Mexico border from Polo Inn Road to Porfirio Diaz Street; and bound on the west by Porfirio Diaz Street from the Texas-Mexico border to Highway 10."

PM_{10} SIP

The TCEQ submitted "Revisions to the State Implementation Plan (SIP) for Inhalable PM_{10}: 1991 PM_{10} SIP for Moderate Area - El Paso" to the EPA in 1991. The EPA approved the SIP submittal in 1994. The PM_{10} non-attainment area described in the EPA Green Book is the City of El Paso.

New Mexico PM_{10} SIP

Anthony, New Mexico, in Doña Ana County, was designated as non-attainment for the PM_{10} 24-hour NAAQS in 1991. Part of the PM_{10} Moderate Area SIP Guidance requires anthropogenic (man-made) source categories with significant emissions to be analyzed for technical and economic feasibility of implementing control measures. A copy of New Mexico's PM_{10} SIP is included in Appendix A. There is no PM_{10} budget established for Anthony, NM, however, an air quality assessment may be conducted on an individual project basis, in coordination with the New Mexico

consultative partners, to examine the potential effects on PM_{10} within the Anthony, NM PM_{10} non-attainment area.

The non-attainment area is described in the EPA Green Book as the following: "The area bound by Anthony Quadrangle, Anthony, New Mexico - Texas. SE/4 La Mesa 15' Quadrangle, N3200 - W10630/7.5, Township 26S, Range 3E, Sections 35 and 36 as limited by the New Mexico - Texas State line on the south".

New Mexico Ozone SIP

Doña Ana County historically had air quality problems, including particulate matter and ozone pollution. In 1995, the EPA declared a 42 square-mile region in the southeast corner of the County on the border of Texas and Mexico as a marginal nonattainment area for the 1-hour ozone standard. The nonattainment area included the City of Sunland Park, and two census designated places, Santa Teresa, and La Union. Sunland Park was officially designated as nonattainment for ozone in a Federal Register announcement published June 12, 1995 (60 FR 30789).

On April 30, 2004, EPA designated the Sunland Park area as attainment of the 1997 8-hour ozone standard. As part of implementation of the 1997 8-hour ozone standard, EPA revoked the 1-hour ozone standard in 2004. Due to this revocation, New Mexico was required to provide a 10-year maintenance plan for the Sunland Park 1997 8-hour ozone attainment area under section 110(a)(1) of the Clean Air Act. Motor vehicle emissions budgets were not required under the 110(a)(1) maintenance plan, and therefore none were developed or approved.

On October 1, 2015, the EPA revised the 8-hour Ozone NAAQS (73 FR 16436), from 0.075 parts per million (ppm) to 0.070 ppm (80 FR 65292). In 2016, New Mexico Environment Department (NMED) recommended that EPA designate a portion of Doña Ana County near Sunland Park, NM as nonattainment (Appendix A). Based on 2014-2016 ozone monitoring data, EPA designated the area as a marginal nonattainment area on June 4, 2018 (Effective August 3, 2018) (83 FR 25776). The Sunland Park baseline emissions inventory and emissions statement SIP Revision and Certification was submitted to EPA September 10, 2020 and approved October 15, 2021 (86 FR 57388). NMED's nonattainment new source review (NNSR) permitting requirements (20.2.79 NMAC; Permit-Nonattainment Areas) SIP Revision was amended by the Environmental Improvement Board on June 25, 2021 and submitted to EPA July 30, 2021 for approval in meeting the 2015 O3 NAAQS. Please note that adoption of Reasonably Available Control Technologies (RACT) is not required for marginal ozone nonattainment areas and NMED has not included these in our SIP Revisions

El Paso Ozone SIP

As a result of the FCAA amendments of 1990, El Paso County was designated nonattainment for the one-hour ozone NAAQS of 0.12 ppm. El Paso County was classified as a serious nonattainment area with an attainment deadline of November 15, 1999. Plans to reduce emissions of volatile organic compounds by 15% in El Paso County were submitted in 1993 and 1994.

In September 1994, the Texas Natural Resource Conservation Commission (TNRCC), a predecessor to the TCEQ, adopted a §818 demonstration for the El Paso area. Section 818 of the 1990 FCAA amendments included a new FCAA, §179B, containing special provisions for nonattainment areas

affected by emissions from outside the United States. Under §179B, the EPA could approve a SIP revision for the El Paso area if the plan would achieve timely attainment of the NAAQS but for emissions from Mexico. Modeling showed that El Paso could attain the NAAQS with the planned 15% reduction in emissions from the United States side of the border alone. On July 24, 1996, the TNRCC adopted the one-hour ozone SUPER SIP which included changes to the 15% rate of progress demonstration for the El Paso nonattainment area as well as changes to the §818 attainment demonstration.

In 1997, the one-hour ozone standard was replaced by the more protective eight-hour ozone standard. The one-hour standard has been revoked in all areas, although some former one-hour ozone nonattainment areas have continuing obligations to comply with the anti-backsliding requirements described in 40 CFR 51.905(a).

On April 15, 2004, the EPA designated El Paso County attainment (effective June 15, 2004) for the 1997 eight-hour ozone NAAQS of 0.08 ppm. Monitors in El Paso County at that time showed attainment of both the one-hour and eight-hour ozone NAAQS. The EPA's Phase I Implementation Rule for the eight-hour ozone standard directed that areas designated nonattainment for the one-hour ozone standard but attainment for the eight-hour ozone standard submit a federal Clean Air Act (FCAA), §110(a)(1) maintenance plan for the 1997 eight-hour ozone standard by June 15, 2007. The TCEQ submitted this maintenance plan to the EPA on January 20, 2006. On January 15, 2009, the EPA proposed approval of the El Paso ozone maintenance SIP revision (74 FR 2387). The EPA did not receive any adverse comments regarding the maintenance plan approval; the plan became effective on March 16, 2009.

On May 10, 2019, the TCEQ submitted the El Paso One-Hour Ozone Redesignation Request and Maintenance Plan SIP Revision to the EPA that includes a request that the El Paso area be formally redesignated to attainment for the one-hour ozone standard. The EPA has taken the position that it lacks the authority to redesignate areas to attainment under revoked standards. Therefore, on September 25, 2020 the commission approved to withdraw the SIP revision from EPA consideration (Non-Rule Project No. 2020-040-SIP-NR).

On May 21, 2012, the EPA published in the Federal Register final designations for the 2008 eight-hour ozone standard (77 FR 30088). El Paso County was designated attainment/unclassifiable under the 2008 eight-hour ozone NAAQS, effective July 20, 2012.

On February 16, 2018, the United States Court of Appeals for the District of Columbia Circuit issued an opinion in the case South Coast Air Quality Management District vs. EPA, 882 F.3d 1138 (D.C. Cir. 2018). The court vacated portions of EPA's final 2008 eight-hour ozone standard SIP requirements rule, which revoked the 1997 eight-hour ozone NAAQS. In response to the ruling, the commission approved adoption of the El Paso Redesignation Request and Maintenance Plan for the One-Hour Ozone NAAQS SIP Revision on April 24, 2019. The SIP revision was submitted to the EPA on May 10, 2019.

On October 1, 2015, EPA revised the primary and secondary eight-hour ozone standards to 0.070 parts per million (ppm). The 2015 eight-hour ozone NAAQS became effective on December 28,

2015 (80 FR 65291). On June 4, 2018, the EPA designated El Paso County as attainment/unclassifiable, effective August 3, 2018 (83 FR 25776).

In August 2018, the City of Sunland Park, New Mexico and environmental petitioners challenged the EPA's attainment/unclassifiable designation for El Paso County. On July 10, 2020, the D.C. Circuit Court of Appeals issued its opinion to remand (without vacatur) the El Paso County attainment designation to the EPA and require the EPA to issue a revised El Paso County designation for the 2015 eight-hour ozone NAAQS as expeditiously as practicable. On December 21, 2020, the TCEQ submitted supplemental information to the EPA in support of retaining El Paso County's original attainment designation. The EPA sent an application 120-day letter to Texas on May 25, 2021 notifying the governor that the EPA intends to modify the designation for El Paso County to nonattainment as part of the existing Doña Ana partial-county (Sunland Park) ozone nonattainment area. On July 26, 2021, the TCEQ submitted an application response requesting that the EPA not modify El Paso County's existing attainment/unclassifiable designation consistent with all the information submitted by the state.

On November 30,2021 EPA published the final action revising the initial air quality designations for two counties associated with two nonattainment areas. In response to the D.C. Circuit Court of Appeals opinion, the EPA re-evaluated the designations for the remanded counties by applying a uniform, nationwide analytical approach and interpretation of the designation provisions of the Clean Air Act (CAA) in considering the specific facts and circumstances of the areas using only data and information available at the time of the original designations. In the final action, the EPA revised the boundaries of two nonattainment areas, affecting the designation status of two counties in two separate states (Colorado and Texas). A portion of Doña Ana County near Sunland Park, NM and all of El Paso County (El Paso-Las Cruces, Texas-New Mexico) were designated marginal non-attainment for 2015 Ozone NAAQS (Effective on December 30, 2021).

On February 28, 2022, the TCEQ submitted an FCAA, §179 Demonstration to the EPA for the El Paso County portion of the El Paso-Las Cruces, Texas-New Mexico nonattainment area. The demonstration documented that El Paso County would have attained the 2015 eight-hour ozone NAAQS by the August 3, 2021 attainment date "but for" emissions emanating from outside the U.S.

On November 16, 2022, the commission adopted the El Paso County Emissions Inventory SIP Revision for the 2015 Eight-Hour Ozone NAAQS. The SIP revision satisfies FCAA, §172(c)(3) and §182(a)(1) emissions inventory reporting requirements for El Paso County for the 2015 eight-hour ozone NAAQS. The SIP revision also includes a certification statement to confirm that the emissions statements and nonattainment new source review requirements have been met for El Paso County. The SIP revision was submitted to the EPA on December 8, 2022.

On June 30, 2023, the D.C. Circuit Court of Appeals reversed the nonattainment designation for El Paso County, finding that the EPA's action was impermissibly retroactive.

The interagency consultative partners have elected to evaluate El Paso County NOx and VOC emissions as part of this conformity analysis in case EPA issues a nonattainment designation for El Paso County in response to the D.C. Circuit decision before completion of this conformity process.

Regional Emissions Analysis

Regional emissions analyses of transportation plans and improvement programs are developed to ensure that they are consistent with air quality requirements. The analysis for the EPMPO nonattainment areas accounts for emissions resulting from the EPMPO's MTP and TIP, including all regionally significant projects, and the effects of emission control programs.

Motor Vehicle Emissions Budgets

The PM_{10} MVEB applies to El Paso County. In accordance with the CO Limited Maintenance Plan (LMP) in September 2017, a regional emissions analysis for analysis years beyond 2020 is not required, and CO budget was not applied. The one hour Ozone (VOCs and NOx) MVEBs applies to El Paso County.

Table 1
Motor Vehicle Emissions Budgets for Ozone and PM_{10} Non-Attainment Areas

	NOx	VOCs	PM_{10}
Classification	Marginal Non Attainment	Marginal Non Attainment	Moderate Non Attainment
MVEB tons/day	39.76[1]	36.23[1]	12.05[2]

[1] Transportation Conformity: Motor Vehicle Emissions Budgets (MVEB) (Appendix A: El Paso Ozone)
[2]Transportation Conformity: Motor Vehicle Emissions Budgets (MVEB) (Appendix A: El Paso PM-10)

As Dona Ana County does not have an adequate or approved budget, an interim budget test was used. On June 22nd, 2021 the El Paso Metropolitan Planning Organization (MPO) hosted a consultative partners conference call to request guidance as it relates to the 2015 Ozone NAAQS designation for Sunland Park, New Mexico non-attainment area: interim emissions test and demonstration years. For the purpose of this conformity determination per guidance from the consultative partners, a no-greater-than-baseline year test was performed and baseline year 2017 was compared with the analysis years 2022, 2027,2032, 2040 and 2050 for Dona Ana non-attainment area.

On December 14th, 2023 El Paso MPO hosted a consultative partners conference call where was elected to evaluate El Paso County NOx and VOC emissions as part of this conformity analysis in case EPA issues a nonattainment designation for El Paso County in response to the D.C. Circuit decision before completion of this conformity process.

Conformity Tests

MOVES3 is the EPA-approved model for calculating aggregate motor vehicle emission factors (EF) for pollutants such as CO, direct PM_{10}, oxides of nitrogen (NOx) and volatile organic compounds (VOCs), so that they can be compared: to the MVEB for VOC, NO_X and PM_{10}. The official release of MOVES3 (released November 2020) was applied for this analysis based on the consultative partners conference call hold on December 14th, 2023. On past calls were request guidance on the use of MOBILE-based MVEBs with a MOVES-based regional emissions analysis for the

transportation conformity determination as MOVES-based MVEBs do not currently exist in the SIP. For the purposes of this conformity determination, per guidance from the consultative partners on later conference calls and on the approval of the Pre-Analysis Consensus Plan on December 14th, 2023, it was recommended to use the previous PM_{10}, VOC and NOx MOBILE-based MVEBs for the transportation conformity determination for the MTP/TIP conformity for VOC, NOx and PM_{10} pollutants and perform the no-greater-than-baseline year interim emission test, requiring comparison of the 2017 baseline year to the forecast years 2022, 2027, 2032, 2040 and 2050 for VOC and NOx pollutants for the portion of Doña Ana County near Sunland Park, NM non-attainment area, and to evaluate El Paso County NOx and VOC emissions as part of this conformity analysis in case EPA issues a nonattainment designation for El Paso County in response to the D.C. Circuit decision before completion of this conformity process.

The AP-42 model is also used to calculate emission factors for re-suspended road dust. It was designed to calculate a daily (average seasonal day) emissions factor for each of the four basic road types (Freeway, Arterial, Collector and Local) and to apply these rates to the appropriate Vehicle Miles Traveled (VMT) estimates by TDM functional classification. The MOVES3 program is executed using summer and winter temperature and conditions to simulate emissions for PM_{10}, VOC and NOx.

Modeling

TransCAD software was used to create the EPMPO's regional TDM. Inputs to the TDM include projected demographics for the analysis years to test the effects of proposed transportation projects (2017, 2022, 2027, 2032, 2040 and 2050). Roadway networks were prepared for these years showing the number of lanes and roadway types (functional class) that would be constructed according to current MTP and TIP project descriptions, as well as roadways that already exist; for the current Amended RMS 2050 MTP network.

Table 2
El Paso Conformity Analysis Summary
(Emissions expressed in Tons per Day)

Pollutant	Budget	2022	2027	2032	2040	2050
VOC[1]	**36.23[4]**	5.51	3.99	3.27	2.69	2.59
NOx[1]	**39.76[4]**	11.66	8.18	6.75	6.27	6.56
PM10[2]	**12.05[3]**	5.38/5.99	5.72/6.37	6.03/6.71	6.44/7.16	7.03/7.83

[1]Ozone (VOC and NOx) include summer figure. The VOC and NOx budget is based on the 1996 one-hour ozone SUPER SIP. Using 2017 weather station data.
[2]PM_{10} emissions include summer/ winter figures. The PM_{10} budget is based on the 1994 PM_{10} Mobile Emissions Inventory. Using 2017 weather station data.
[3]Transportation Conformity: Motor Vehicle Emissions Budgets (MVEB) (Appendix A: El Paso PM-10).
[4]Transportation Conformity: Motor Vehicle Emissions Budgets (MVEB) (Appendix A: El Paso Ozone).

Table 3
Sunland Park Ozone Nonattainment Area Analysis Summary[1]
(Emissions expressed in Tons per Day)

YEAR	Pollutant (tons/day)	
	VOC	NO_X
2017 Baseline year	**0.04**	**0.08**
2022	0.04	0.06
2027	0.02	0.04
2032	0.02	0.03
2040	0.02	0.03
2050	0.02	0.03

[1] This conformity determination demonstrates that the total emissions calculated from the modeled roadway network for future years will be at levels below the baseline year (2017) as required for the interim emissions test no-greater-than baseline year. Table 3 provides the conformity results for the VOC and NOx no greater-than-baseline year emissions tests.

SECTION 1.0

INTRODUCTION

1.1 MPO Organization and Role

In the El Paso Transportation Management Area (TMA), the City of El Paso is designated as the fiscal agent for the Metropolitan Planning Organization (MPO), established pursuant to Section 134 of Chapter 1 of Title 23 of the United States Code (23 USC). The TPB is the transportation policy setting authority for the EPMPO. The TPB meetings are the forum for cooperative decision making by elected officials of local governments for the EPMPO Study Area. The EPMPO Study Area consists of El Paso County, and the southern portions of Doña Ana and Otero Counties in New Mexico. Appendix B provides a map of the EPMPO Study Area Boundary.

The MPO coordinates regional multimodal transportation plans involving the study of present transportation patterns in relation to existing and projected regional development. The TPB and its subcommittees carry out this coordination function. The MPO is responsible for the preparation of the MTP, the TIP, Transportation Conformity Report (TCR), the Unified Planning Work Program (UPWP), the Congestion Management Process (CMP), and other documents as required by 23 USC §134; the Federal Clean Air Act and Federal Clean Air Act Amendments of 1990 (FCAA); and respective SIPs.

1.2 Purpose

The purpose of this conformity analysis is to determine if the Amended RMS 2050 MTP and RMS 2023-2026 TIP are consistent with projected PM_{10}, VOC and NOx (Ozone) emission requirements.

1.3 Conformity Criteria

The FCAA requires transportation plans, programs, and projects in non-attainment and maintenance areas that receive approval and/or funding from the Federal Highway Administration (FHWA) or Federal Transit Administration (FTA), to demonstrate conformity. The main objective is to prevent future transportation development from causing new air quality violations, worsening existing violations, and/or delaying a region's attainment of the NAAQS.

The following is a summary of the key criteria used in this conformity determination:

- Use of interagency consultation (see Section 7.0)
- Incorporation of the latest planning assumptions in the planning documents and modeling
- Use of approved models and methodology
- Development of an MTP and TIP that conform to the MVEBs established in the SIP for the PM_{10} non-attainment area and ozone non-attainment area.

1.4 Document Format

This conformity determination report follows the Model Conformity Documentation outline adopted by the Technical Working Group (TWG) for Mobile Source Emissions.

1.5 Electronic Data Submittal

The MTP, TIP, conformity documents for all non-attainment areas within the EPMPO, attachments, and related technical documents are available on the EPMPO Web Site located at http://www.elpasompo.org/ under the conformity section (click link and scroll down to "Conformity") and electronically on a compact disc (CD) from the EPMPO. Please call (915) 212-0258 for a copy. The conformity determination is in Adobe (pdf) format.

1.6 Pre-Analysis Consensus Template

The Pre-Analysis Consensus Template originates from the efforts of the TWG to develop a process for reaching early consensus on the parameters to be used for a conformity determination. A Pre-Analysis Consensus Plan was utilized for this conformity determination. The development of the networks and the emissions modeling are a two-step process and therefore some of the information in the Pre-Analysis Consensus template populated initially could be modified. The Pre-Analysis Consensus plan received consensus on March 28th ,2024 with the understanding that this was the current state of knowledge at that time. The consultation partners agreed to move forward and include the analysis notes, containing the remaining details in the conformity document.

SECTION 2.0

MTP AND TIP

CONFORMITY TO THE SIP

2.1 Overview

2.2 Submittal Frequency

The MPO, under rules that govern nonattainment metropolitan areas, must approve a long-range plan every four years and a short-range program every four years, with all plans passing an analysis for conformity determination. If amendments are proposed to the MTP or TIP that would affect air quality and estimated emissions, an additional analysis must be made. One year after the effective date of designation of a new non-attainment area, FHWA/FTA conformity determination for the MTP and TIP must be completed. The EPMPO is proposing an amendment to the long range plan (RMS 2050 MTP) and the TIP (RMS 2023-2026 TIP). The TPB followed the procedure of hearing and considering all public comments starting from April 15th ,2024 and ending May 14th, 2024 before adopting the respective MTP and TIP.

2.3 Transportation Control Measures

There are no Transportation Control Measure (TCM) requirements identified in the PM_{10} SIP.

2.4 Regionally Significant Control Programs

Regionally significant control programs are intended to mitigate air pollution and assist an area in attaining the NAAQS. A mix of programs are selected by the state and are based on which programs are needed to attain the NAAQS. The selected control programs are incorporated into the appropriate SIP. Section 2.4.1, below, is one provision written in the SIP's for the nonattainment pollutants dealing with transportation-related measures.

2.4.1 Inspection and Maintenance Program

The El Paso County Inspection and Maintenance (I/M) program, originating in 1987, employed the Two-Speed Idle (TSI) and the on-board diagnostics (OBD) tests. All 1995 and older model year vehicles were required to pass the TSI test. The TSI test measures tailpipe exhaust emissions of Carbon Monoxide (CO), Carbon dioxide (CO_2), and other hydrocarbons (HC) while the vehicle idles at both high and low speeds and then includes a gas cap integrity test. The EPA-approved OBD test is required for all 1996 model year and newer vehicles. The OBD is an emission test to check the vehicle's on-board computer that identifies problems with the vehicle's emission control components. Since January 1, 2020, the I/M program consists of only OBD testing.

Details of the I/M program and rules may be found in 30 Texas Administrative Code (TAC) Chapter 114 Subchapter C Division 1: Vehicle Inspection and Maintenance.

New Mexico is not required to have an I/M. The basic and enhanced I/M requirements only apply to urbanized areas with population in excess of 200,000, depending on location.

2.5 Regionally Significant Travel Projects/Programs

The TDM used for conformity determination consists of existing roadways considered to be regionally significant in the base year (2017) and the regionally significant roadways expected to be in place for each of the intermediate and horizon years: 2022, 2027, 2032, 2040 and 2050, regardless of funding source.

The determination of regionally significant projects comes from the "Regionally Significant Project" definition found in 40 CFR Section 93.101. The definition is as follows:

> "*Regionally significant project* means a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network , including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel."

Included in the TDM are the roadways on which conformity is based and thus considered regionally significant. Roadways in the travel demand model are coded with functional class and capacity classifications.

Regionally significant transit projects are represented through the mode share model. The model includes route systems for transit, with changes in speed or other operating conditions affecting the projected ridership. The mode share model has an effect on roadways by removing any projected transit riders before automobile vehicle trips are calculated and assigned to roadways.

2.6 Non-Federal Projects/Programs

The MTP contains population and land use assumptions that project urban growth to the year 2050 into areas that are now vacant or have rural-type development. It has been El Paso's experience in the recent past that urban development involves the transition of totally or primarily vacant land (mainly desert) into subdivisions, with all services being provided in conjunction with the subdivision development, including water, sewer, roadways, and other services such as schools and parks. This has been accomplished through the subdivision ordinances of the City of El Paso and surrounding communities, and the relationship that the cities have with large developers who are able to build large-scale, phased developments. Although this development pattern had previously occurred primarily within the larger cities and their extra-territorial jurisdictions, this pattern of development can now be observed within other municipalities surrounding the City of El Paso.

2.7 Exempt Projects/Programs

Certain types of projects are defined in 40 CFR §93.126 that are exempt from conformity determination requirements. These projects generally do not add capacity to the roadway network and do not increase the transit miles traveled; thus, they add no new emissions to the metropolitan area. The examples listed in 40 CFR §93.126 include:

Safety

- Railroad/highway crossings
-Projects that correct/improve/eliminate a hazardous location or feature
-Safer non-Federal-aid system roads
-Shoulder improvements
-Projects that increase sight distance
-Highway Safety Improvement Program Implementation
-Traffic control devices and operating assistance other than signalization projects
-Railroad/highway crossing warning devices
-Guardrails, median barriers, crash cushions
-Pavement resurfacing and/or rehabilitation
-Pavement marking
-Emergency relief
-Fencing
-Skid treatments
-Safety roadside rest areas
-Adding medians
-Truck climbing lanes outside the urbanized area
-Lighting improvements
-Widening narrow pavements or reconstructing bridges
-Emergency truck pullovers

Mass Transit

-Operating assistance to transit agencies
-Purchase of support vehicles
-Rehabilitation of transit vehicles (In PM_{10} nonattainment or maintenance areas, such projects are exempt only if they are in compliance with control measures in the applicable implementation plan.)
-Purchase of office, shop, and operating equipment for existing facilities
-Purchase of operating equipment for vehicles
-Construction or renovation of power, signal, and communications systems
-Construction of small passenger shelters and information kiosks
-Reconstruction or renovation of transit buildings and structures
-Rehabilitation or reconstruction of track structures, track, and trackbed in existing right of way
-Purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet
-Construction of new bus or rail storage/maintenance facilities categorically excluded in 23 CFR Part 771

Air Quality

-Continuation of ride-sharing and van-pooling promotion activities at current levels
-Bicycle and pedestrian facilities.

Other

-Specific activities which do not involve or lead directly to construction, such as:
Planning and technical studies

Grants for training and research programs
Planning activities conducted pursuant to Titles 23 and 49 U.S.C.
Federal-aid systems revisions

-Engineering to assess social, economic, and environmental effects of the proposed action or alternatives to that action
-Noise attenuation
-Emergency or hardship advance land acquisitions
-Acquisition of scenic easements
-Plantings, landscaping, etc.
-Sign removal
-Directional and informational signs
-Transportation enhancement activities (except rehabilitation and operation of historic transportation buildings, structures, or facilities)
-Repair of damage caused by natural disasters, civil unrest, or terrorist acts, except projects involving substantial functional, locational or capacity changes

2.8 Financial Planning for the RMS 2050 MTP

The Amended RMS 2050 MTP is a 28-year plan with approximately $9B of multimodal projects and programs included in fiscal years (FY) 2022-2050. The El Paso Metropolitan Planning Organization (EPMPO) study areas stretches across the state line between Texas and New Mexico, including El Paso County in Texas, Southern Dona Ana County, and a portion of Otero County in New Mexico. Facilitating the movement of people and goods throughout the region over this period of time presents numerous challenges from a financial standpoint. Projects and programs in the Texas portion of the EPMPO study area are approximately $7B. Transit projects come to approximately $1B. New Mexico projects total approximately $416M. See Appendix C, for the financial summary and project list, which demonstrates a thorough comparison of project revenues and associated project costs in the Amended RMS 2050 MTP.

There is a mix of FHWA, FTA, state (Texas and New Mexico) and local revenues used to cover associated project costs in the Amended RMS 2050 MTP. It should be noted that all federal funds herein have been calculated to include the required local match, usually 20% for Texas and 14.56% for New Mexico. The Amended RMS 2050 MTP includes total project cost, comprised of Construction, Right-of-Way (ROW), and Preliminary Engineering (PE) costs. The first ten years of the Amended RMS 2050, FY 2022-2031, are fiscally constrained by funding category, followed by fiscal constraint in FY 2032. Banding together multiple years was applied for financial constraint in the outer years of the plan from 2033-2040 and 2041-2050. The EPMPO coordinated with TxDOT and NMDOT to determine acceptable inflation rates for projects within in their respective states. This resulted in compounded inflation rates of 4% in Texas, and 1.5% in New Mexico.

The EPMPO administers three federal funding categories, Congestion Mitigation and Air Quality (CMAQ), Surface Transportation Program in urbanized areas for metropolitan mobility projects and the Transportation Alternative Program (TAP), which incorporates safe routes to schools and the recreation trails program. Texas CMAQ and STP-MM funds were accounted for through the Texas 2022 Unified Transportation Program (UTP) for year 2022 and the Texas 2023 UTP for years 2023-

2032 of the Amended RMS 2050 MTP. The 2022 UTP trend grows the CMAQ and STP-MM programs at 1.0%. This growth is in line with the historical average, and the EPMPO continued this growth rate throughout the remaining years of the RMS 2050 MTP with total Texas CMAQ revenue of $302M, and total STP-MM revenue of $820M. New Mexico CMAQ and STP-Large Urban revenue expectations were coordinated with NMDOT, and at the direction of NMDOT there was no growth rate applied to these programs in the Amended RMS 2050 MTP. The total New Mexico CMAQ revenue is $57M and total STP-Large Urban revenue is $29M. The total Texas TAP program is $88M, and NMDOT provides available TAP funds as they become available for planning and programming purposes. Federal funding administered by the EPMPO in the Amended RMS 2050 MTP is in line with historical trends and no reduction of these funds are expected in the future. The EPMPO is also the designated recipient for the FTA 5310 program to meet the transportation needs of elderly persons and persons with disabilities where public mass transportation services are otherwise unavailable, insufficient, or unequipped to handle their needs. FTA funding apportionments for FY 2020-2023 have been programmed in FY 2022-2024and based on historical trends the EPMPO has estimated $650,000 each year starting in FY 2025 for a total of $20,254,168 in the Amended RMS 2050 MTP.

From 2023-2025 approximately $5M of CMAQ funds are programmed to be transferred from FHWA to FTA for Sun Metro to operate its Montana RTS projects. Sun Metro will continue to receive traditional FTA 5307 formula funds for programs such as capital maintenance, planning and ADA Paratransit for over $524M, and for Transit Enhancement projects covered by FTA 5339 funds for nearly $78M, which includes approximately $45M for buses and bus facilities. The FTA 5307 and 5339 funds are expected to grow at a rate of 1% through 2050. This growth rate is expected to be different for 5307 funds to be used for Security Equipment and 5339 funds for Bus and Bus facilities expenses which are calculated with a 2.5% growth rate. One Sun Metro projects is programmed with the expectation of receiving FTA 5309 Very Small Starts funding. Historically, Sun Metro has received Very Small Starts funding when leveraged by local funding. Federal transit funding is programmed for the Streetcar Phase II in FY 2041 which assumes funding split between 50% Certificates of Obligation and 50% FTA 5309 Very Small Starts funding.

TxDOT's 2023 UTP was used to account for financial constraint of Texas highway projects and programs, within the Amended RMS 2050 MTP from 2023-2032, through traditional federal revenues from Categories 1-12. Unless otherwise noted, most of these funding categories continue throughout the Amended RMS 2050 MTP, but no additional growth rate (other than the inflation rate) beyond 2032 was applied. Some of these categories are not used for specific projects but are a demonstration of programs, such as Category 1- Preventative Maintenance and Rehabilitation, Category 6-Structure Replacement and Rehabilitation, and Category 8-Safety Projects. Local contributions (which is beyond required local match to federal funds) is captured under Category 3 for projects in the Texas portion of the EPMPO study area. TxDOT proposed additional revenues assumptions in the Amended RMS 2050 MTP: $138M bonding revenue for Borderland Expressway project in 2027 and 2029. $180M of El Paso-District allocation of Rider 11B Border Funding between 2023-2031. $911M of Category 2 (Transportation Management Area Corridors) from 2032-2050. $900M of Clear Lanes Initiative Version 2 funds was distributed throughout the plan between 2028 and 2050. NMDOT proposed federal and state revenues at approximately $354M through a combination of STP Large Urban, STPLE, STP-Flex, National Highway Performance Program (NHPP), National Highway Performance-Freight (NHPP-F) New Mexico State Funds and Border State Infrastructure (SBSI) funds.

On September 1, 2021 the Transportation Project Advisory Committee (TPAC) recommended the RMS 2050 MTP Project List to the Transportation Policy Board (TPB) for approval on September 17, 2021. The 30-day Public involvement/comment period for the RMS 2050 MTP, RMS 2023-2026 TIP and Transportation Conformity Report was conducted from January 24, 2022 to February 22, 2022. The TPB adopted the final documents on March 25, 2022.

2.9 Financial Planning for the RMS 2023-2026 TIP

The RMS 2023-2026 TIP covers a program horizon of four fiscally constrained years. The RMS 2023-2026 TIP is consistent with the Amended RMS 2050 MTP and contains regionally significant projects to be funded with federal and non-federal funds. Inclusion of a project in the RMS 2023-2026 TIP reflects a consensus of priority needs among residents living in the MPO study area, locally and state-elected officials, local transportation agency representatives, and representatives of TxDOT and NMDOT. The RMS 2023-2026 TIP is, in effect, a listing of transportation priority needs that will be implemented that contain total estimated costs and implementation dates. The RMS 2023-2026 TIP may be amended as transportation needs and/or funding levels change.

The RMS 2023-2026 TIP is fiscally constrained for transit projects and highway projects in the New Mexico and Texas portion of the El Paso MPO study area. This area is comprised of El Paso County, southern Dona Ana County, NM, and a small portion of Otero County, NM. The majority of projects are in the highway section for Texas, but all federal, state and locally funded projects of regional significance in the El Paso MPO study area are included.

Traditional federal funding categories that flow through TxDOT into the TIP are based on revenue forecasts in TxDOT's associated Unified Transportation Program (UTP). The UTP reflects the projects and programs that may be delivered from available forecasted funding in Texas over a 10-year period. Close coordination is ongoing with NMDOT on available funds to be used in New Mexico. Transit projects are funded with FTA funds, and local funds. Most of the transit funding is for Sun Metro projects, the mass transit provider in the region.

Meetings of the Transportation Project Advisory Committee (TPAC), which recommends projects for approval, and the TPB, which approves projects in the TIP were used as open forum for the MPO public involvement process. The required 30-day public involvement/comment period was met for the RMS 2023-2026 TIP. These meetings were advertised in local newspapers. At the time of the approval of the RMS 2050 MTP the corresponding RMS 2023-2026 TIP was also approved by the TPB, on March 25, 2022.

SECTION 3.0

VEHICLE ACTIVITY

Section 3.0 describes the basic TDM inputs and approach used to develop the modeled volumes that are a necessary part of the air quality conformity process. Two of the primary travel model inputs - networks (e.g., an electronic representation of the current and future transportation system made up of links and nodes) and demographics - are briefly described below.

3.1 Demographic Specification for the RMS 2050 MTP

To develop the 2017 base year demographic estimates, as well as the 2022, 2027, 2032, 2040, and 2050 demographic forecasts for the RMS 2050 TDM, several reliable data sources were used.

Sources for formulation of the 2017 population, household, and employment control totals included both government sources and proprietary sources:

- 2017 U.S. Census Bureau Population Estimates;
- 2017 American Community Survey (ACS) 5-year data and 1-year data;
- 2017 Texas Demographic Center (TDC) Population Estimates;
- 2017 Geospatial & Population Studies, University of New Mexico (UNMGPS) Population Estimates;
- Woods & Poole Complete Economic and Demographic Data Source (CEDDS).
- 2012 and 2017 U.S. Census Bureau County Business Pattern (CBP) data;
- 2012 and 2017 U.S. Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW) data;
- 2012 and 2017 Bureau of Economic Analysis (BEA) county level employment data;
- Woods & Poole Complete Economic and Demographic Data Source (CEDDS);
- 2017 Annual Survey of Public Employment & Payroll (ASPEP);
- 2017 Integrated Postsecondary Education Data System (IPEDS) data; and
- 2017 Texas Education Agency (TEA) data;
- 2017 National Center for Education Statistics (NCES) data; and
- 2017 Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES) data.

Estimation of forecast year demographic control totals was based on recommendations from the TDC, and the allocation of such data by TAZ was established through a Delphi process.

The final socioeconomic data estimates were reviewed by TxDOT El Paso District and TxDOT TP&P. Revisions were made based on feedback from the review combined with additional follow up analysis. Further information on the development of the demographic data for the base and forecast years associated with each TAZ can be found in Appendix G – El Paso Travel Demand Model Demographic Development.

The final TAZ geography contains 869 TAZs, including 21 external stations and several border crossings.

Table 4
Summary of Demographic Data for the EPMPO area

	2017	2022	2027	2032	2040	2050
Population	879,325	932,764	966,176	993,504	1034,460	1,103,789
Employment	263,910	295,215	322,792	358,197	411,079	478,657
Households (HH)	282,823	308,094	327,885	346,036	373,780	412,242

Source: EPMPO, 2024

Table 5
Summary of Demographic Data for the 2015 Ozone NAAQS nonattainment area

	2017	2022	2027	2032	2040	2050
Population	13,041	13,804	14,187	14,533	15,010	16,070
Employment	2,229	2,423	2,619	2,810	3,121	3,508
Households (HH)	3,338	3,624	3,801	3,991	4,326	4,799

Source: EPMPO, 2018/TAZs: 781,783,782,780,779,778 & 775

3.2 Travel Demand Model

For the development of the 2050 RMS Travel Demand Model, the EPMPO sought a vendor to develop a model interface along with the validation of the 2017 base year (refer to Appendix J) and development of the forecast years. The model factors, Highway Performance Monitoring System (HPMS), and the seasonal adjustment utilized for this conformity determination, are indicated in Table 6. This section provides a brief description of the RMS TDM. For the purpose of this conformity analysis TTI analyzed 2017,2022,2027,2032,2040 and 2050, with 2017 as the baseline year for ozone interim no-greater-than-baseline year test.

Table 6
Travel Model Demand factors

Model Factor	Detail
HPMS[1]	1.037120
Seasonal Adjustment	For all analysis years, ANSWT conversion factors to seasonal weekday, based on latest available TxDOT 2013 through 2021 El Paso County ATR data: Summer (June through August) weekday (M-F): -- 0.96285[1] --0.99254[2] Winter (Dec., Jan., & Feb.) weekday: -- 1.03184[1]

[1]The adjustment factor converts annual non-summer weekday to seasonal weekday for analysis years 2022, 2027, 2032, 2040 and 2050.
[2]The adjustment factor converts travel demand model (TDM) VMT to seasonal weekday adjusted TxDOT's annual Roadway Inventory Functional Classification Record (RIFCREC) Control totals for analysis years 2017.

3.2.1 Travel Model Description

The study area for the RMS Model includes El Paso County in Texas and the southern portions of Doña Ana and Otero counties in New Mexico. The model base year is 2017, the model forecast years include 2022, 2027, 2032, 2040, and 2050, and the baseline year for the conformity analysis on the ozone nonattainment areas required for the baseline year test (in 40 CFR 93.119 (e) (4)) is 2017. The RMS Model uses a multiyear master line layer from which individual analysis year networks are derived for use in the analysis of travel demand in the El Paso MPO area.

The RMS Model interface is a combination of TxDOT trip generation and standalone set of macros that run within the TransCAD travel demand modeling software platform.

The RMS Model is a trip-based model, typical of most state of the practice models, which is validated to daily traffic flows. The traffic flows are produced through a typical four step process that includes – trip generation, trip distribution, and mode choice and traffic assignment, with a speed feedback loop. These procedures are built in a TxDOT TP&P uniquely developed software, commonly referred to as the "Texas Package".

Within the Texas Package, the Trip Generation Program (TripCAL6) is used to generate person trip ends for the El Paso travel demand model. The RMS TDM uses TransCAD's Gravity Model to distribute the productions and attractions calculated by the trip generation program. The RMS TDM includes as well a Logit-based mode choice procedure which converts person-trips into vehicle-trips (drive alone, share ride 2 and 3+), as well as transit, pedestrian, and bicycle trips. All of these trips are provided for four time-of-day periods: AM Peak, PM Peak, mid-day and night-time.

Finally, the RMS TDM uses the TransCAD User Equilibrium (UE) Assignment for vehicle trips. The assignment procedure in the RMS TDM includes toll road modeling capabilities as well.

SECTION 4.0

EMISSIONS BUDGET AND MOVES MODEL

4.1 Overview

The TDM has a validated 2017 base year, and forecast network years of 2022,2027, 2032, 2040, and 2050 (Appendix I- Emissions Analysis Notes include the network years). The forecast years incorporate projects proposed in the MTP and TIP. The model outputs were then sent to TTI for emissions analysis.

4.1.1 Assumptions

This document summarizes the MOVES3 inputs and other inventory elements TTI used for developing the 2017, 2022, 2027, 2032, 2040, and 2050 on-road mobile source emissions inventories for the conformity analysis.

4.1.2 Methodology

TTI produced summer season weekday VOC and NOx emissions (2017 and forecast years) and both summer and winter weekday PM_{10} (forecast years) emissions estimates for evaluation years. The procedure and data applied to develop the emissions estimates follows the same general methodology (i.e., hourly, TDM link-based) as applied in the most recent El Paso MTP conformity analysis. However, the procedure applied the latest planning assumptions to include data that are more recently available (e.g., new traffic assignments, latest available registrations data for development of vehicle fleet characteristics, MOVES3 model, as allowed by the timeframe of this analysis).

4.1.3 Data Sources and Development

The EPMPO provided the requisite 24-hour travel model traffic assignments and intrazonal trips. TTI provided the various seasonal weekday VMT adjustment factors (for total VMT and for hourly VMT distributions) based on the latest multi-year TxDOT El Paso Automatic Traffic Recorder (ATR) data, and the HPMS consistency factor (from travel model validation year). TTI also provided travel model traffic assignments and intrazonal trips by time period (AM Peak, Midday, PM Peak, and Overnight), as well as VMT mix by roadway functional classification group for the 24-hour period, based on recent multi-year classification counts.

The MOVES3 speed-sensitive Freeway and Arterial drive cycle emissions factors were applied to the freeway and non-freeway functional classifications.

TTI provided emissions estimates for 13 vehicle types in the typical summary form of hourly totals by county and road type as well as 24-hour totals. The MOVES3 commands/inputs are located in Appendix I.

4.2 MOVES3 Inputs

TTI developed the MOVES3 model inputs according to the guidance provided *in*

MOVES3 Technical Guidance: Using MOVES to Prepare Emission Inventories for State Implementation Plans and Transportation Conformity (EPA, November 2020). Please see Appendix I for more detailed information on the MOVES Inputs.

4.2.1 Summary of Control Programs Modeled

This section summarizes the MOVES3 commands and data parameter values used in MOVES3 to model the El Paso I/M Program and the Fuel Reid Vapor Pressure (RVP) Gasoline Program.

4.2.2 I/M Program

The El Paso I/M program consists of exhaust (start year 1987) and evaporative (start year 1997) component tests conducted on an annual basis. As of January 1, 2007, 1996 and newer I/M-subject vehicles equipped with OBD systems are tested under OBD and gas cap integrity (GC) tests, while pre-1996 and non-OBD equipped vehicles are tested under the TSI and GC tests. But since January 1, 2020, the I/M program consists of only OBD testing.

4.2.3 Fuel Reid Vapor Pressure, and Diesel Sulfur Content

The conventional gasoline (CG) formulations were based on TCEQ's summer 2017 and summer 2023 (latest available) fuel survey samples from El Paso County. The 2017 CG properties are actual 2017 averages (fuel grade averages weighted by relative sales volumes). The 2022 CG properties are the latest available actual 2023 averages. Future Years (2024+) CG properties are the latest available actual 2023 averages except with RVP, average sulfur level, and average benzene content set to the "expected" values (MOVES3 defaults, consistent with the pertinent regulatory standards). Winter CG – MOVES defaults. The 2017 diesel sulfur level is the statewide average from TCEQ's 2017 survey. The 2022 diesel sulfur level is the statewide average for TCEQ's 2023 survey. Future years (2024+) diesel sulfur was set to the current expected future year value (6 ppm), which is conservative and consistent with the statewide diesel sulfur average from TCEQ's latest (2023) survey. Please see Appendix I for more detailed information on the Reid Vapor Pressure, and Diesel Sulfur Content.

4.2.4 Temperatures by Time Period

The ambient temperature input values (shown in Table 7 below) consist of the seasonal daily average hourly temperatures. These values were input to MOVES3 by season. Table 7 includes the meteorological data 2017 used for PM_{10} and Ozone (VOC and NOx) inventories.

Table 7
Meteorological Inputs to MOVES: Temperature (T) - Fahrenheit, Relative Humidity (RH) – Percent. (Meteorological Data 2017 used for PM and Ozone inventories)[1]

Hour	Summer		Winter	
	T	RH	T	RH
12:00 am	79.77	42.73	48.57	45.01
1:00 a.m.	78.51	45.05	47.44	46.81
2:00 a.m.	77.31	47.11	46.44	48.65
3:00 a.m.	76.27	49.05	45.46	50.32
4:00 a.m.	75.38	50.63	44.62	51.63
5:00 a.m.	74.47	52.45	43.71	53.29
6:00 a.m.	73.96	53.51	43.08	54.26
7:00 a.m.	75.19	51.26	43.39	52.85
8:00 a.m.	77.54	46.95	45.76	48.11
9:00 a.m.	80.13	42.42	48.91	43.16
10:00 a.m.	82.81	37.98	52.31	38.25
11:00 a.m.	85.38	33.88	55.29	34.22
12:00 p.m.	87.54	30.66	57.39	31.80
1:00 p.m.	89.27	28.03	59.07	29.61
2:00 p.m.	90.68	25.90	60.29	27.94
3:00 p.m.	91.85	24.01	60.83	27.40
4:00 p.m.	92.09	24.18	60.37	28.06
5:00 p.m.	91.62	24.77	58.77	30.20
6:00 p.m.	90.74	25.75	56.88	32.70
7:00 p.m.	89.02	28.24	55.16	35.17
8:00 p.m.	86.68	32.05	53.66	37.07
9:00 p.m.	84.78	34.61	52.16	39.26
10:00 p.m.	82.97	37.00	50.77	41.34
11:00 p.m.	81.28	40.04	49.58	42.97

[1] Average hourly from weather stations within El Paso County—June through August 2017 for summer and January, February, and December for winter (provided by TCEQ). Temperatures in °F and percent for relative humidity.

4.2.5 Vehicle Registration Distributions and Alternative Fuel Vehicle Technology (AVFT)

Vehicle registration (age) distributions and AVFT hereafter referred to as fuel fractions inputs to MOVES3 were developed using the latest available Texas Department of Motor Vehicles (TxDMV) analysis year-specific county vehicle registration data. 2018 data was used for the 2017 base year. The latest available data (2021) was used for the future analysis years; 2022, 2027, 2032, 2040, and 2050. The vehicle age distribution input data set are county level, except for the combination long-haul truck category, which is state level. MOVES3 defaults were used where the required information was not available in the TxDMV data. The application of local registration distributions and fuel fractions follows guidance *MOVES3 Technical Guidance: Using MOVES to Prepare Emission Inventories for State Implementation Plans and Transportation Conformity* (EPA, November 2020). Please see Appendix I for more detailed information on the vehicle age distributions and diesel fractions.

4.2.6 Vehicle Registration Distributions

The user-supplied vehicle registration distributions input to MOVES3 are by vehicle age for any of the 13 composite (combined gasoline and diesel) vehicle types. MOVES3 internal default distributions are applied for vehicle classes for which the analyst does not provide alternate values. The input values for each vehicle class are 30 age fractions representing the fraction of vehicles by age for that particular vehicle class of the evaluation year. These age fractions start with the evaluation year as the 1st age fraction and work back in annual increments to end with the 30th fraction, which represents the fraction of vehicles of age 30 years and older. The fractions are calculated as the model-year-specific registrations in a class divided by the total vehicles registered in that class.

4.2.7 AVFT

MOVES3 allows the modeler to specify fuel fractions for 13 composite (gasoline, diesel, and flex-fuel engine types) vehicle categories by vehicle age. TTI developed the evaluation year-specific local diesel fractions for the MOVES single unit and combination truck source use types using the latest TxDMV data, for all analysis years, aggregated to the statewide level. For all source types, CNG and electricity fractions were set to zero and the gasoline/diesel/flex-fuel fractions were normalized (sum to 1.0) for each source type and model year. Fuel usage for flex-fuel vehicles was set to 100% gasoline (in the fuel usage fraction input table).

4.2.8 VMT Mix

Using latest available vehicle classification counts (2013-2021) and MOVES3 defaults, TTI estimated the El Paso County time-of-day (AM Peak, Mid-Day, PM Peak, Overnight) VMT mixes by the four MOVES road types. No seasonal adjustments are made for VMT mix. The core methodology of using TxDOT classification count averages over a district, road type, and TOD stays the same, with changes to mapping data used for converting TxDOT classification categories to the MOVES SUTs then to MOVES SUT and fuel type categories. Figure 1 shows the overview of the SUT VMT mix development. After obtaining the SUT VMT mix, the MOVES default fuel distribution is used to split the SUT distribution further into SUT and fuel type distribution.

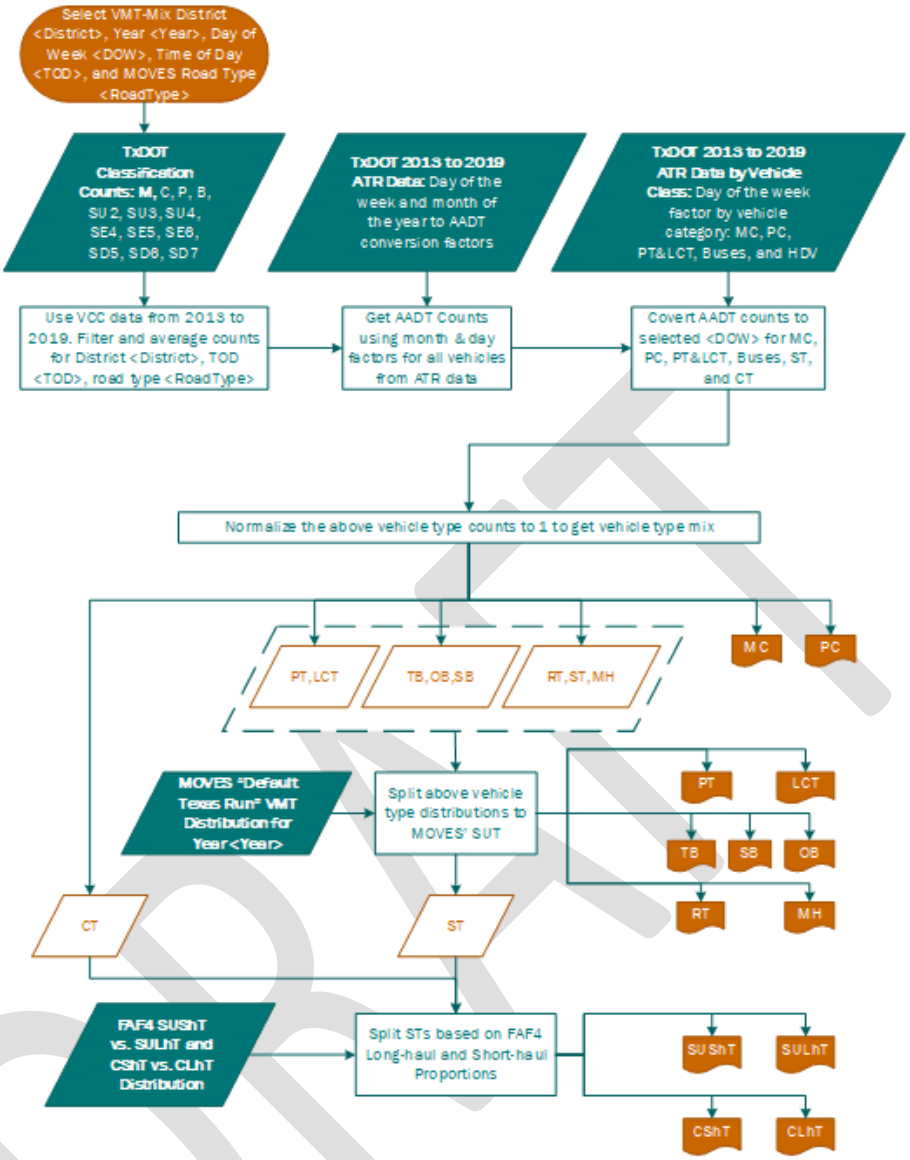

Figure 1. Overview of SUT (without Fuel-Type) VMT Mix Development

4.2.9 TRANSVMT Inputs

The utility post-processing TDM (TRANSVMT) produce hourly, seasonal and day-of-week specific, on-road vehicle, directional link VMT and speed estimates. The TRANSVMT utility processes a TDM traffic assignment by multiplying the link volumes by the appropriate HPMS, seasonal, or other VMT factors. Hourly factors are then used to distribute the link VMT to each hour in the day.

A speed model involving both the link estimated free flow speed and estimated directional delay (as a function of volume and capacity) is used to estimate the operational time-of-day link speeds for each direction.

Since intrazonal links are not included in the TDM, special intrazonal links are created and the VMT and speeds for these special links are estimated using the intrazonal trips from the trip matrix and the zonal radii. The link VMT and speeds produced by TRANSVMT are subsequently input to the emissions calculation utility, Emissions Calculation Program (EmsCalc), for applying the MOVES-based emissions factors.

4.2.10 Time-of-Day Factors

TTI used the multi-year TxDOT El Paso ATR data to develop one set of average weekday VMT factors for each seasonal period for all analysis years. These factors were applied to allocate the time period TDM assignment-based VMT by hour-of-day to determine emissions. Please see Appendix I for more detailed information on the time-of-day factors.

4.2.11 Area Type Specifications

The EPMPO planning area is divided into five area types designated by a code or label and defined as shown in Table 8.

Table 8
The metropolitan Planning Area Types

Label	
1	Business District
2	Urban Intense
3	Urban Central
4	Suburban
5	Rural

4.2.12 Time-of-Day Directional Split Factors

The 24-hour link assignment volumes, adjusted for season and HPMS consistency and allocated by time-of-day, are non-directional volumes (i.e., the sum of the volumes in the two directions on a link). Directional splits were applied to estimate the portion of the travel that occurred in each direction. These directional volume estimates were used to estimate the directional speeds. Application of the directional split factors resulted in two link records for each network link: one record containing the estimated VMT and speed in the peak (or dominant) direction, and the second record containing the estimated VMT and speed in the opposite direction. This allowed the application of MOVES emissions factors directionally by speed. Please see Appendix I for more detailed information on the time-of day directional split factors.

4.2.13 Time-of-Day Capacity Factors

Time-of-day (i.e., hourly) capacity factors were applied to non-directional capacity (or service volume) for each hour. In computing the directional volume/capacity (v/c) ratio for estimating the directional speeds, the directional split for capacity is assumed to be 50-50. Please see Appendix

I for more detailed information on the time-of-day capacity factors.

4.2.14 Free Flow Speed Factors

The estimated free flow speed is used in conjunction with the estimated directional delay (in minutes/mile) to compute the directional congested speed. Unless free flow speeds are included in the TDM, free flow speed factors are used to convert TDM speeds (which are by definition level of Service (LOS) C to LOS A speeds (free flow)).
Details of this procedure are provided in the discussion of the speed model in Section 4.2.16. Please see Appendix I for more detailed information on the free flow speed factors.

4.2.15 Speed Model Formulation

The TDM speed model uses hourly volume and capacity to estimate delay. The link volume was also allocated by hour and direction using the VMT factors (HPMS and seasonal adjustments), hourly factors, and directional split factors. The development of hourly volume and capacity by direction is discussed previously in this document. The directional delay (in minutes per mile) due to congestion was calculated using the following volume/delay equation:

$$Delay = Min\left[A\, e^{B\left(\frac{V}{C}\right)}, M\right]$$

Where:

Delay = congestion delay (in minutes/mile);
A & B = volume/delay equation coefficients;
M = maximum minutes of delay per mile; and
V/C = time-of-day directional V/C ratio.

The delay model parameters (A, B, and M) were developed for the Dallas/Fort Worth area and verified by application in other Texas urban areas. Table 9 shows these parameters.

Table 9
Volume/Delay Equation Parameters

Facility Category	A	B	M
High-Capacity Facilities	0.015	3.5	5.0
Low-Capacity Facilities	0.050	3.0	10.0

Given the estimated directional delay (in minutes/mile) and the estimated free flow speed, the directional congested speed is computed as follows:

$$Congested\ speed = \frac{60}{\frac{60}{Freeflow\ speed} + Delay}$$

This model was applied at the link level by area type and functional class combination for each time period and each direction. Directional, hourly operational link speeds were estimated using the speed model, which estimates delay on each link as a function of volume-to-capacity, and applies it to the link's estimated free-flow speed. Local streets category link average operational speeds were estimated, represented by the centroid connector and added intrazonal links, as centroid connector TDM input speeds and the zone's average centroid connector input speed, respectively. Please see Appendix I for more detailed information on the speed model.

4.3 Post Processed Adjustments

No emissions rate adjustments were required and therefore no emissions rate adjustments via post-processing were performed.

SECTION 5.0

MOBILE SOURCE EMISSION REDUCTIONS STRATEGIES (MOSERS)

5.1 Transportation Control Measures

As defined by the EPA in the Transportation Conformity Regulations, a TCM "is any measure that is specifically identified and committed to in the applicable implementation plan, including a substitute or additional TCM that is incorporated into the applicable SIPs through the process established in FCAA section 176(c)(8), that is either one of the types listed in FCAA section 108, or any other measure for the purpose of reducing emissions or concentrations of air pollutants from transportation sources by reducing vehicle use or changing traffic flow or congestion conditions. Notwithstanding the first sentence of this definition, vehicle technology-based, fuel-based, and maintenance-based measures which control the emissions from vehicles under fixed traffic conditions are not TCMs for the purposes of this subpart."

The approved El Paso and Anthony, NM, PM10 SIP, does not contain any TCMs.

The Sunland Park baseline emissions inventory and emissions statement SIP Revision and Certification was submitted to EPA September 10, 2020 and approved October 15, 2021 (86 FR 57388). NMED's nonattainment new source review (NNSR) permitting requirements (20.2.79 NMAC; Permit-Nonattainment Areas) SIP Revision was amended by the Environmental Improvement Board on June 25, 2021 and submitted to EPA July 30, 2021 for approval in meeting the 2015 O3 NAAQS. Please note that adoption of Reasonably Available Control Technologies (RACT) as indicated below is not required for marginal ozone nonattainment areas and NMED has not included these in our SIP Revisions."

No applicable SIP or TCMs exist.

5.2 VMEP

Under the El Paso Metropolitan Area no applicable SIP and/or Voluntary Mobile Emissions Reduction Programs (VMEP) exist.

5.3 Transportation Emission Reduction Measures (TERM)

For this Transportation conformity determination, no TERMs are being utilized.

5.4 CMAQ

Part of the strategy to reduce emissions has been to use CMAQ funds leveraged with local and other federal funds to develop projects that positively affect air quality. The El Paso Metropolitan Area has made use of these funds since their inception in the Intermodal Surface Transportation Efficiency Act of 1991.

Before any project is approved and funded an evaluation is made of the costs and air quality benefits resulting from project implementation.

The TPAC of the MPO is charged with comparing the results of these evaluations and making recommendations to the TPB for allocation of CMAQ funding in each fiscal year of the TIP.

The MPO Project List includes CMAQ projects that will be funded through the RMS 2023-2026 TIP (see Appendix C).

SECTION 6.0
DETERMINATION OF REGIONAL TRANSPORTATION EMISSIONS

This section describes the modeling procedures used to determine conformity for the Amended RMS 2050 MTP and RMS 2023-2026 TIP. It describes the TDM, mobile source emission estimation methodology, and AP-42 Model, Section 13.2.1.

6.1 Procedure
6.1.1 Mobile Source Emissions Estimate

6.1.1.1 MOVES

The EPA highway vehicle emissions factor model provides average in-use fleet emissions factors for a variety of pollutants. For this case, the model was used to produce emissions factors for three pollutants: NOx, VOC and PM_{10} (direct vehicle PM_{10} emissions, excluding re-suspended dust from paved roads, which is discussed later in this document). MOVES3 is the EPA-approved model. MOVES was initially released in December 2009 to replace the MOBILE model series. Previously MOBILE6.2.03 was used to generate highway mobile source emissions inventories, motor vehicle emissions budgets, and control strategies for SIPs under the FCAA, as well as for developing environmental impact statements under the National Environmental Policy Act (NEPA).

MOVES3 is a model that estimates volatile organic compounds (VOCs), nitrogen oxides (NOx), $PM_{2.5}$ and PM_{10}, carbon monoxide (CO), and other precursors from cars, trucks, buses, and motorcycles for SIP purposes and conformity determinations outside of California (California uses Emissions Factor Model (EMFAC)). The internal calculation procedures used in MOVES3 are provided in various technical reports posted on EPA's MOVES Internet page located at https://www.epa.gov/moves/moves-technical-reports

MOVES categorizes vehicles into 13 source types and have 6 fuel types (gasoline, ethanol (E-85), diesel, compressed natural gas (CNG), electricity, and liquefied petroleum gas (LPG)). MOVES calculates emissions based on VMT by vehicle type, the number of each type of vehicle in the fleet, vehicle age distribution, fuel information, meteorological data, et cetera. The user can specify many of the variables affecting vehicle emissions. Five different road types are considered in MOVES as well as a 31-year range for vehicle ages.

Table 10 shows the 13 source types, which are subsets of five HPMS vehicle types.

Table 10
MOVES Source Types and HPMS Vehicle Types

Source Type ID	Source Types	HPMS Vehicle Type ID	HPMS Vehicle Type
11	Motorcycle	10	Motorcycles
21	Passenger Car	25	Light Duty Vehicles (LDV) - Short and Long Wheelbase
31	Passenger Truck		
32	Light Commercial Truck		
41	Intercity Bus	40	Buses

42	Transit Bus		
43	School Bus		
51	Refuse Truck	50	Single Unit Trucks
52	Single Unit Short-haul Truck		
53	Single Unit Long-haul Truck		
54	Motor Home		
61	Combination Short-haul Truck	60	Combination Trucks
62	Combination Long-haul Truck		

Table 11 shows the five different road types and their description.

Table 11
Road Types

Road Type	Description
Off-Network (roadtype 1)	all locations where the predominant activity is vehicle starts, parking and idling (parking lots, truck stops, rest areas, freight or bus terminals)
Rural Restricted Access (2)	rural highways that can only be accessed by an on-ramp
Rural Unrestricted Access (3)	all other rural roads (arterials, connectors, and local streets)
Urban Restricted Access (4)	urban highways that can only be accessed by an on-ramp
Urban Unrestricted Access (5)	all other urban roads (arterials, connectors, and local streets)

6.1.2 TTI Emissions Estimation Utilities

The following is a summary of the utility modules developed by TTI (written in the Python programming language) for producing detailed, link-based, hourly and 24-hour emissions estimates for on-road mobile sources using the latest version of EPA's MOVES model (MOVES3). These utility modules produce inputs used with the MOVES model, calculate the necessary activity (VMT and off-network activity), calculate 24-hour emission factors, make special adjustments to the emissions factors (when required), and multiply the emissions factors with travel model link-based of Highway Performance Monitoring System (HPMS)-based (virtual link) activity estimates to produce emissions at user specified temporal and spatial scales.

The new TTI Utilities were redeveloped to ensure new MOVES3 features could be accurately incorporated into Texas' EI methods. To efficiently accommodate these changes, the TTI research team redesigned the code using the Python programming language.

Figure 2 outlines the basic steps required to run the new MOVES3 based TTI utilities.

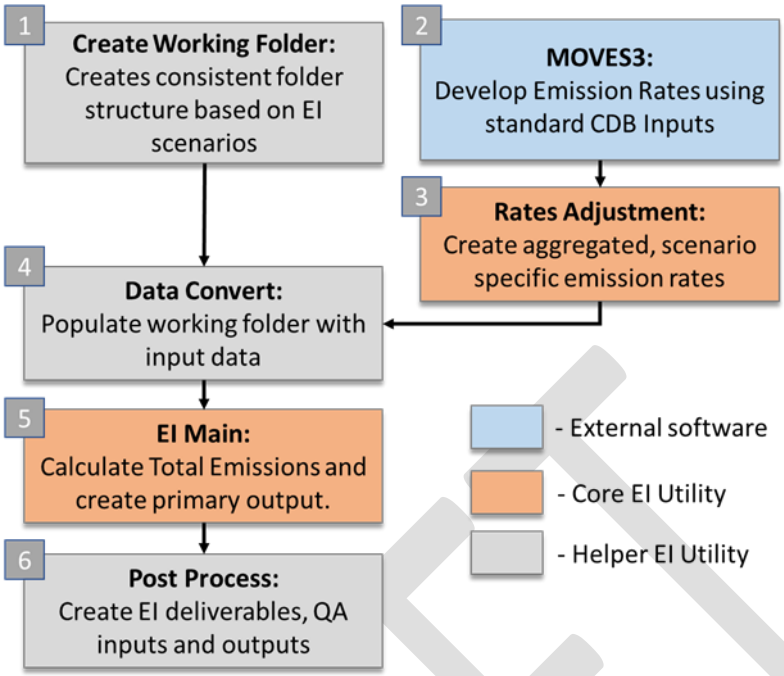

Figure 2. Basic steps required to develop an EI using the new TTI Utilities

The numbered grey boxes indicate sequential steps and are described in the main text.
The following is a description of each step outlined in Figure 2:

1.The user specifies the number of EI scenarios to run. Scenarios are specified by area, analysis year, season, and day type. Analysts are able to calculate emissions for a single multi-county area or create multiple areas based on individual counties (or another relevant jurisdiction). Scenarios are defined through a JSON (JavaScript Object Notation) file that defines the scope of the EI's to be run (this file is also used during Steps 4-6). A "Create Working Folder" utility uses the JSON file to create a project workspace containing empty folders that will subsequently become populated with input data required to run an EI and outputs for each scenario-driven EI (i.e., during Steps 4-6).

2.County Data Base (CDB) files are prepared and run using MOVES3 to obtain MOVES3 output databases for each scenario.

3.The TTI "Rates Adjustment" utility locates the MOVES3 output database for each modeled scenario and performs necessary adjustments to emission rates based on county Low Emission Diesel (LED) factors and inspection maintenance programs. Various other MOVES default and local values (defined in the input CDB) are also extracted from the MOVES database and transferred to the working folder. This is the only time that the new TTI Utilities interact with MOVES3 databases.

4.The "Data Convert" utility is used to assemble all input data relevant to an EI scenario into local working folders created during Step 1. This includes copying data from TTI databases that contain master copies of vehicle population and vehicle mix (VMT mix) data, processed travel models, and emissions rates, and other data mined from MOVES3 (Steps 2 and 3). At the end of Step 4, each

scenario folder within the working project folder (created during Step 1) is populated with all information required to run each EI scenario.

5. The "EI Main" utility is responsible for calculating and aggregating primary emission inventory inputs. Options required for running EI Main are specified in another JSON control file called Utility_Control.json. The EI Main inventory works sequentially through each scenario defined in an EI project. It begins by calculating on-network and off-network activities. The EI Main Utility then works through each pollutant defined in the EI scenario and multiplies on- and off-network activities by the appropriate emission rates derived from Step 3. The EI Main utility produces simple, highly consistent output in the form of tab-delimited text files (depending on runtime specifications, the user can specify whether to output EI results as link-by-link or county scale summary files).

6. After the EI main utility has been run, outputs are organized in a consistent format in each of the specific EI scenario working folders. At this point, the analyst can choose from a variety of post-processing utilities designed to QA EI inputs and outputs and create formatted data files suitable for reporting EI results for various downstream air quality planning purposes.

The main utilities in for calculation hourly and 24-hour aggregate emissions using MOVES are same as what have been used in most recent TCEQ emission inventory projects (AERR, RFP, etc.) including Rates Adjustment, EI Main (including TRANSVMT, HPMS based Link VMT, Vehicle Population Build, Off-network Activity Calculation, Emission Calculation), MOVES Activity Input Build, and Post Processing. TRANSVMT utility module and HPMS based Link VMT utility module prepare the link VMT and speeds activity input. The Vehicle Population Build utility module builds the vehicle population used to calculate the off-network activity. The Off-network Activity Calculation utility module builds the off-network idling activity (ONI), source hours parked activity (SHP), engine starts activity (Starts), extended idling activity (SHEI) and auxiliary power unit activity (APU) hours required to estimate emissions using the rate-per-activity emissions rates produced by the new Rates Adjustment utility module. The MOVES Activity Input Build utility modules build inputs used in MOVES. The Rates Adjustment utility module assembles the emissions rates from the MOVES output in terms of rate-per-activity, including calculating rate-per-SHP for the evaporative emissions processes. It also makes special adjustments to the emissions rate when required. The Emission Calculation utility module calculates emissions by hourly time periods, producing the results for Post Processing utility module to produce a a tab-delimited summary file (including 24-hour totals), hourly link emissions output files (optional), and an optional tab-delimited summary file by MOVES source classification code (SCC). The following sections are describing the details of each module in the utilities.

6.2 Calculated Emissions

6.2.1 Calculated Link-Based Emissions

The main components of the emissions estimates (link VMT, VMT mix, and emissions factors) were combined according to the procedures described to produce the resulting emissions estimates.

The resulting emissions estimates are summarized in Tables 12, 13 and 14. Additional detail in the form of hourly and 24-hour emissions by functional classification and vehicle type are available electronically (Appendix I).

6.2.2 Calculated Emissions for Donut Areas

Emissions for donut areas are not applicable for this analysis since nonattainment area is not outside the metropolitan planning area boundary and is not a donut area (reference: 40 CFR 93.101 Definitions).

6.3 Emissions Estimations Utilities

6.3.1 TRANSVMT

The TRANSVMT utility module post-processes travel demand models (TDMs) to produce hourly, on-road vehicle, seasonal and day-of-week specific, directional link VMT, and speed estimates. The TRANSVMT utility module processes a TDM traffic assignment by multiplying the link volumes by the appropriate HPMS, seasonal, or other VMT factors. Hourly factors are then used to distribute the link VMT to each hour in the day. The TTI speed model is used to estimate the operational time-of-day link speeds for each direction. Since intrazonal links are not included in the TDM, special intrazonal links are created and the VMT and speeds for these special links are estimated using the intrazonal trips from the trip matrix and the zonal radii. The link VMT and speeds produced by TRANSVMT are subsequently input to the EmsCalc utility for applying the MOVES-based emissions factors (as well as with other utilities to develop off-network activity estimates).

6.3.2 Vehicle Population Build

The Vehicle Population Build (VehPopBuild) utility module builds the sourcetypeyear data files in a format consistent with the MOVES input database table and the SUT/fuel type population input file to estimate emissions or the off-network activity module to estimate starts and SHP) using the VMT mix and the Texas Department of Motor Vehicles (TxDMV) registration data sets. The TxDMV registration data sets are three sets of registration data (an age registration data file, a gas trucks registration data file, and a diesel trucks registration data file) that list 31 years of registration data.

6.3.3 Off-network Activity Calculation

The Off-network activity utility module (OffNetActCalc) calculates the analysis scenario (i.e., year, season, day type) SHP, ONI, SHEI, starts, and APU hours by hour, SUT, and fuel type used to estimate emissions using the Emission Calculation utility module. The starts activity is estimated using county-level vehicle type populations and data from MOVES representing the average number of vehicle starts per vehicle type per hour. The starts per vehicle are calculated using the applicable MOVES algorithm with data on the age distribution and fuel fractions of the local fleet. The SHEI and APU hours are a function of hotelling hours (hours spent by drivers of long-haul trucks with their trucks parked during mandatory rest periods). This utility has two options for calculating the hotelling hours. Using the first option, the analysis scenario 24-hour hotelling hours is calculated using a user-supplied extended idle factor applied to the source hours operating (SHO) data. The second option (and suggested method) uses base data (24-hour hotelling, link VMT and speeds, and VMT mix), the analysis scenario data used to calculate the SHP, ONI and the analysis scenario SHP to calculate the analysis scenario 24-hour hotelling hours.

6.3.4 MOVES CDB Activity Input Build

The MOVES CDB Activity Input Build utility builds the roadtypedistribution, hourvmtfraction, avgspeeddistribution, roadtype, hpmsvtypeday, sourcetypedayvmt, year, state, zone, zoneroadtype, monthvmtfraction, and dayvmtfraction data files in a format consistent with the MOVES input database tables using the link-based hourly VMT and speeds developed with the TRANSVMT or HPMS VMT utility, the VMT mix, and the MOVES defaults. The utility also has the option of building the sourcetypeage (adjusted to reflect the 24-hour VMT mix), starts, and hotellinghours data files in a format consistent with the MOVES input database tables using the output from the OffNetActCalc utility, along with inputs from the MOVES runs and the MOVES defaults.

6.3.5 Rates Adjustment

The Rates Adjustment utility module consist of two utilities:

- RatesCalc module. The module calculates emissions rates in terms of the rate/SHP for the evaporative emissions process using the data in the CDB in the MOVES emissions rates run and the MOVES default database, and RatesAdj Module. The module applies emissions rate adjustments to an emissions rate database table if necessary.

6.3.6 Emission Calculation

The Emission Calculation utility module estimates the hourly link emissions for one user-specified county using the emissions factors (either from RatesCalc or RatesAdj), the 24-hour or time period VMT mix, the hourly link VMT and speeds activity estimates (either from TRANSVMT or HMPS VMT), and the off-network activity (SHP, ONI, starts, and SHEI).

The primary inputs to this module are:

- Emissions factors from Rates Adjustment utility.
- Link-based hourly VMT and speeds developed with the TRANSVMT or HPMS VMT utility module. For each link, the following information is input to EmsCalc: link start node, link end node, link county number, link roadway type number, link area type number, link VMT, and link operational speed estimate;
- 24-hour or time period VMT mix by roadway type, MOVES SUT, and MOVES fuel type;
- Off-network activity (SHP, starts, ONI, SHEI, and APU hours) by hour and SUT/fuel type;
- VMT roadway type designations, which lists associations of the link roadway types/area type combination to the VMT mix, emissions rate, and MOVES roadway types;
- Pollutants input file, which specifies which pollutant/process combinations for which the emissions calculations will be performed and their respective units in the tab-delimited output;

The emissions estimation can be categorized by two basic types based on the type of emissions factors: the roadway-based emissions and the off-network-based emissions. For the roadway-based emissions (ttirateperdistance emissions factors), the VMT for each link is distributed to each of the SUT/fuel type combinations listed in the VMT mix by roadway type (as designated in the

VMT roadway type designations). For link speeds greater than 75 mph, the emissions factors for 75 mph are used. For link speeds less than 2.5 mph, the emissions factors for 2.5 mph are used. For those link speeds that fall between the 16 MOVES speeds, the emissions factors are interpolated using the emissions factor interpolation methodology in the following section. For the off-network emissions, the ttirateperstart, ttirateperhour, and ttiratepershp emissions rates (by SUT/fuel type) are multiplied by the appropriate activity, which is determined by the emissions process.

The emissions estimates are output in a tab-delimited file (including all of the SUT/fuel type combinations listed in the VMT mix on a single line, separated by a tab character) for the specified county by pollutant, link roadway type, and SUT/fuel type combination for each of the specified episode time periods. A 24-hour (or total if all 24 hours are not specified) output is also included in the tab-delimited file.

Example Emissions Factor Interpolation

To calculate emissions factors for link speeds that fall between two of the 16 MOVES speed bin speeds, an interpolation methodology similar to the methodology used with MOBILE6 is used. This methodology interpolates each emissions factor using a factor developed from the inverse link speed and the inverse high and low bounding speed bin speeds. The following is an example for a link speed of 41.2 mph.

The interpolated emissions factor (EFInterp) is expressed as:

$$EF_{Interp} = EF_{LowSpeed} - FAC_{Interp} \times (EF_{LowSpeed} - EF_{HighSpeed})$$

Where:

$EF_{LowSpeed}$ = emissions factor (EF) corresponding to the speed below the average link speed;

$EF_{HighSpeed}$ = EF corresponding to the speed above the average link speed; and

$$FAC_{Interp} = \left(\frac{1}{Speed_{link}} - \frac{1}{Speed_{low}}\right) \Big/ \left(\frac{1}{Speed_{high}} - \frac{1}{Speed_{low}}\right)$$

Given that:

$EF_{LowSpeed}$ = 0.7413 g/mi;
$EF_{HighSpeed}$ = 0.7274 g/mi;
$Speed_{lnk}$ = 41.2 mph;
$Speed_{low}$ = 40 mph; and
$Speed_{high}$ = 45 mph.

$$FAC_{Interp} = \left(\frac{1}{41.2mph} - \frac{1}{40mph}\right) \Big/ \left(\frac{1}{45mph} - \frac{1}{40mph}\right) = \frac{-0.00073}{-0.00278} = 0.26214;$$

$$EF_{Interp} = 0.7413 \text{ g/mi} - (0.26214) \times (0.7413 \text{ g/mi} - 0.7274 \text{ g/mi});$$

= 0.7377 g/mi.

6.3.7 Post Processing Utilities

The post processing utilities process the intermediate results from the EI Main Utility to produce the post processed emission estimate results in a tab-delimited file (including all of the SUT/fuel type combinations listed in the VMT mix on a single line, separated by a tab character) for the specified county by pollutant, link roadway type, and SUT/fuel type combination for each of the specified episode time periods. A 24-hour (or total if all 24 hours are not specified) output is also included in the tab-delimited file. Only those pollutant/process combinations in the pollutants input file with tab-delimited output units other than "NONE" will appear in the tab- delimited output file. Prior to output, any unit conversions between mass units (i.e., pounds to grams or pound-mole to gram-mole) are performed by the utility. Unit conversions between unit types (i.e., gram-moles to grams or TEQ to grams) are not performed internally by the utility (these type of unit conversions must be done using the RatesAdj utility). This tab-delimited file also includes hourly and 24-hour summaries of the off-network activity and VMT, VHT, and speed by link road type. Link emissions may also be output by county, pollutant, process, and each SUT/fuel type combination. If specified, the tab-delimited activity and emissions by SCC output file is also created, which lists the activity and emissions for each SCC pollutant by SCC.

6.4 Final Emission Analysis Results

6.4 Final Emission Analysis Results

6.4.1 Network-Based Model

Table 12 is a summary of the VMT and associated PM_{10} emissions for the summer\winter season emissions.

Table 12
PM_{10} Emission Data

Year	Season	VMT[1]	PM_{10} Emissions (tons/day)
MVEB	--	--	12.05
2022	Summer	19,259,508	5.38
	Winter	20,639,416	5.99
2027	Summer	20,127,582	5.72
	Winter	21,569,684	6.37
2032	Summer	21,077,483	6.03
	Winter	22,587,644	6.71
2040	Summer	22,530,833	6.44
	Winter	24,145,125	7.16
2050	Summer	24,587,643	7.03
	Winter	26,349,303	7.83

[1] VMT are from summer and winter action assignments. Using 2017 weather station data.
Source: Texas A&M Transportation Institute

Summaries of the VMT and associated VOC and NOx emissions for the summer season emissions (June through August weekday (average Monday through Friday)) for El Paso County (Table 13) and for the portion of Doña Ana County near Sunland Park, NM nonattainment area (Table 14) are included below.

Table 13
Summer Season VOC and NOx Emission Data El Paso County[1]

YEAR	Total Vehicle Miles of Travel (Including Intrazonal)	VOC Emissions in Tons per Day	NOx Emissions in Tons per Day
2022	19,259,508	5.51	11.66
2027	20,127,582	3.99	8.18
2032	21,077,483	3.27	6.75
2040	22,530,833	2.69	6.27
2050	24,587,643	2.59	6.56

[1]All values are average summer weekday estimates. The VMT listed are used to calculate the average speed. Using 2017 weather station data.

Table 14
Summer Season VOC and NOx Emission Data Dona Ana nonattainment area[1,2]

YEAR	Total Vehicle Miles of Travel (Including Intrazonal)	VOC Emissions in Tons per Day	NOx Emissions in Tons per Day
2017	94,140	0.04	0.08
2022	117,627	0.04	0.06
2027	120,516	0.02	0.04
2032	126,701	0.02	0.03
2040	129,719	0.02	0.03
2050	135,453	0.02	0.03

1All values are average summer weekday estimates. The VMT listed are used to calculate the average speed. Using 2017 weather station data.
2 El Paso regional TDM zones comprising the Sunland Park ozone nonattainment area, in Doña Ana County, NM.

6.4.2 Off-Network TERMS

Off-network TERM have not been included in the El Paso SIP, thus there is no requirement to make adjustment.

6.4.3 Summary

The VOC, NOx (Ozone) and PM_{10} emissions from the travel demand model all meet the MVEB requirements without any adjustments or additional credits required from VMEP, TERM, or TCMs for the County of El Paso. All VOC and NOx emissions from the travel demand model meet the requirements as establish on the "*Transportation Conformity Guidance for 2015 Ozone NAAQS Nonattainment Areas*" without any adjustments or additional credits required from VMEP, TERM, or

TCMs.

This conformity determination demonstrates that the total emissions calculated from the modeled roadway network for future years will be no greater than the baseline year emissions (2017) as required for the interim emissions test no-greater-than baseline year for the portion of Doña Ana County near Sunland Park, NM. Table 14 provides the conformity results for the VOC and NOx no greater-than-baseline year emissions tests. As well, this conformity determination demonstrates that the total emissions calculated from the modeled roadway network for future years will be at levels below the MVEB. Table 13 and 12 provide the conformity results for VOC, NOx and PM_{10} budget tests, respectively.

For the purpose of this conformity determination per guidance from the consultative partners, meteorological inputs to MOVES3 for VOC, NO_X and PM_{10} analysis were from year 2017.

SECTION 7.0

INTERAGENCY CONSULTATION

7.1 Process Description

Section 176(c)(4)(B)(i) of the FCAA contain the guidelines that are used by the EPMPO during the interagency consultation process for conformity. Based on these guidelines, the EPMPO must provide the opportunity for consultation with the group of partners listed below prior to the conformity determination. Preliminary technical meetings are held with the consultative partners and the EPMPO to discuss the planning process prior to the commencement of emissions modeling. The modeling parameters, planning assumptions, as well as the type of model to be used are discussed with the consultative partners.

Upon conclusion of the preliminary technical meetings, the emissions modeling process begins. Once the emissions estimates are developed, they are included in the transportation conformity report. If there is a need to re-evaluate the emissions estimates and conduct additional modeling, the consultative partners are notified.

The EPMPO provides a 30-day public comment period. At the end of the 30-day public comment period, the conformity report is prepared for submittal to the TPB for review. The finalized conformity document is then sent to all consultative partners for the beginning of a 90-day review period, in which the consultative partners provide comments on the conformity document before final approval. The EPMPO responds to all comments, and as needed, incorporates the requested edits into the conformity document. Once all edits have been incorporated, the conformity document may be submitted to the consultative partners for final review of the transportation conformity report.

The consultative procedures specifically require coordination with the following government agencies during the Transportation Conformity Determination development process and for the interagency review:

- EPA
- FHWA (Texas and New Mexico)
- FTA
- TxDOT
- TCEQ
- NMDOT
- NMED

The EPMPO's committee structure helps to ensure that the consultative requirements are met during the Transportation Conformity Determination development process. TxDOT, NMDOT, and NMED are members of the TPAC of the MPO. This committee recommends approval of the MTP, the TIP, and recommends submittal of the TCR to the TPB.

All documents are submitted to all the consultative partners including the Texas and New Mexico Divisions of the FHWA.

Interagency consultation efforts conducted for this conformity determination included the development of a Pre-Analysis Consensus Plan, multiple consultation conference calls with the Consultative Group, and the opportunity for review and comments on the transportation conformity determination document by the consultation partners.

The Pre-Analysis Consensus Plan and Comment/Response matrices specific to this conformity determination can be found in Appendix F.

SECTION 8.0

PUBLIC PARTICIPATION

The goal of the Public Participation Program (PPP) is to involve the community in a proactive planning effort that provides the opportunity for input in the early stages of the conformity determination. The guidelines followed for public participation can be found at the following link: https://www.elpasompo.org/media/PublicParticipationPlan/PublicParticipationPlan.pdf

The 30-day public comment period began April 15th,2024 and ended May 14th,2024. Further, public meetings were conducted April 23th,2024 through May 1st,2024 as part of the public involvement process defined in the EPMPO PPP, as well as to give the public and stakeholders a chance to view the draft plan and make comment before final adoption. The MPO held a series of public meetings to present the Draft Amended RMS 2050 MTP document, and Draft Transportation Conformity Report simultaneously. Electronic copies of the draft documents were available on the EPMPO website for public viewing and hard-copies may be available upon request. The table below outlines the meeting dates and locations of the public outreach. A video recording of the presentation was also posted on the EPMPO website during the 30-day public comment period for those unable to attend the meetings. Information was also provided via social media.

Copies of the draft transportation conformity report and Amended RMS 2050 MTP can be provided free of charge on social media and on the El Paso MPO website, however, copies of over-sized or lengthy materials were available at reproduction and postage costs consistent with the State of Texas Comptroller's policy. Electronic copies of draft documents and major updates are posted on the MPO website for public viewing.

Table 15
Plan Review public meeting dates and locations[1]

Date	Time	Location	Address
April 23,2024	4pm to 6pm	El Paso Metropolitan Planning Organization Offices	211 N. Florence St., Ste. 202
May 1, 2024	1:30pm to 3:30pm	El Paso Metropolitan Planning Organization Offices	211 N. Florence St., Ste. 202

[1]The public meetings will be conducted in a hybrid format which provided both an in-person meeting, as well as a virtual meeting option to join by phone and/or computer via link on the MPO website.

During the 30-day public comment period for the RMS 2050 MTP amendment and related Transportation Conformity Report, EPMPO staff held two public meetings to solicit comments from the public. Both meetings were held in a hybrid format, with an in-person attendance option at EPMPO offices, or virtual participation via Microsoft Teams. The meetings attracted a total of 3 members of the public to attend. Meetings were conducted in an open house format, with a presentation provided by staff, with the opportunity for attendees to ask questions and provide comments.

EPMPO received one public comment from the El Paso County Commissioners' Court. The comment included a report developed by El Paso County with their consultant, Smart Mobility. The report is focused on the *Downtown 10 Executive Center to SL478 Copia* project, using an alternative analysis of existing conditions to recommend new project scenarios. EPMPO is committed to fostering a thoughtful dialogue between El Paso County, EPMPO and TxDOT regarding the data and recommendations contained in the report.

The public comment and response matrix is included as Appendix K of the Transportation Conformity Report.