

CHAPTER 8: MOBILE SOURCE EMISSION REDUCTION STRATEGIES (MOSERS)

Mobile Source Emission Reduction Strategies (MoSERS) are a collection of transportation projects identified as having emission reduction benefits. These MoSERS are classified as Transportation Control Measures (TCM), Weight of Evidence (WOE), or Transportation Emission Reduction Measures (TERM) in the recently submitted Dallas-Fort Worth Attainment Demonstration State Implementation Plan (SIP)³³. Previous SIPs included an additional MoSERS category, Voluntary mobile Emissions Reduction Program (VMEP); however, on October 14, 2010, the Regional Transportation Council approved the North Central Texas Council of Governments' (NCTCOG) staff recommendations to include all control strategies (TCMs, VMEPs, and TERMS) under the Weight of Evidence section in future SIPs to allow greatest flexibility and minimize legal risks towards transportation conformity.

8.1 Transportation Control Measures

TCMs are projects, programs, and related activities designed to achieve on-road mobile source emission reductions and are included as control measures in an applicable State Implementation Plan (SIP). TCMs are strategies to reduce vehicle use or change traffic flow and/or congestion conditions to decrease vehicular emissions. The North Central Texas region implements a wide range of TCMs to reduce on-road mobile source emissions, improve air quality, and increase the quality of life. The number of TCMs implemented in the region since 1990 is evidence of local governments' commitment to achieve the goals and objectives of the Clean Air Act Amendments of 1990. This commitment is further strengthened by the efforts made to ensure timely and complete implementation of all TCMs.

8.1.1 Timely Implementation of Transportation Control Measures

Section 93.113 of the conformity rule requires the MPO verify the MTP and Transportation Improvement Program (TIP) provide for timely implementation of TCMs in the applicable SIP. The MTP was reviewed to confirm the goals, directives, recommendations, and projects do not negatively contradict specific requirements or commitments of the applicable SIP. The TIP was reviewed to confirm implementation and expected implementation of projects through federal, State, and local funding sources are on schedule.

The emission reduction calculations for all TCMs are based on the most recent information regarding the effectiveness of TCMs following the *Texas Guide to Accepted Mobile Source Emission Reduction Strategies*. Methodologies used to calculate TCM emission reduction benefits are included in Appendix 12.18.

8.1.2 Project Slippage

Timely implementation of TCMs is of prime importance; in some cases their delay is inevitable. The delays, also termed as 'project slippage', occur for several reasons: problems with engineering contracts, changes in regulations that impact engineering completed or underway, renegotiations of contracts due to cost overruns, redesign, delays in right-of-way acquisition due to discovery of discrepancies, delays in utility adjustments, high personnel turnover on part of both engineering staff and the Texas Department of Transportation staff, funding flow slow-down and/or revised cost estimates that require pursuit of additional funding. After a review of all TCMs in the applicable DFW SIP, it was determined no project slippage has occurred. TCMs have been completed in a timely manner.

8.2 Weight of Evidence

Programs included in the Weight of Evidence (WOE) chapter of the SIP complement existing regulatory

³³ https://www.tceq.texas.gov/assets/public/implementation/air/sip/sipdocs/2016-AD-DFW/DFWAD_2016_archive.pdf

programs through voluntary changes in transportation choices and activities. These alternatives to traditional emission reduction strategies reduce mobile source emissions by engaging communities, employers, and residents in air quality initiatives. Several WOE programs are included in the SIP as on-road emission reduction measures: Electric Vehicle Program, Employer Trip Reduction Program (ETR), Texas Emission Reduction Program (TERP), and AirCheckTexas Drive a Clean Machine Program. For this conformity analysis, the emissions benefits from the ETR program are included in the modeled emission reductions. The other WOE measures, usually post-processed, were not quantified since the additional emission reductions were not needed for this conformity analysis. On October 14, 2010, the Regional Transportation Council approved the NCTCOG's staff recommendations to include all control strategies under the WOE section in future SIPs to allow greatest flexibility and minimize legal risks towards transportation conformity.

8.3 Transportation Emission Reduction Measures

TERMs are transportation projects and related activities that are designed to achieve on-road mobile source emission reductions but are not included as control measures in the SIP. This conformity analysis includes emission reduction benefits generated by TERMs in the following program areas: Grade Separations, Intersection Improvements, Intelligent Transportation Systems (ITS), Park and Ride lots and Vanpool Programs.

Grade separations and intersection improvements reduce vehicle idling delay.

The ITS program incorporates technology and transportation through installation of loop detectors, closed circuit television cameras, dynamic messaging signs, and communication systems. ITS projects reduce emissions from recurring and non-recurring congestion by organizing each individual project to operate as a system, in coordination with multiple technologies.

Park-and-ride facilities promote carpooling and vanpooling. With each occupied parking space at these locations, it can be assumed that the otherwise additional "running" emissions from each parked vehicle are eliminated.

Methodologies used to quantify air quality benefits of the program areas used as TERMs is included in Appendix 12.18. Individual project listings, and their associated benefits accounted for in the 2018 analysis year are included in Appendix 12.19.

8.4 Congestion Mitigation and Air Quality Improvement Program

The Congestion Mitigation and Air Quality Improvement Program is a major funding source for most MoSERS. Several MoSERS and project modifications are listed with associated funding categories in Chapter 7 of the 2019-2022 TIP.

8.5 Summary

An overview of the commitments and emission reductions are outlined in Exhibit 8.5-1. Data is separated for modeled, post-processed and expired projects for convenience of review. The "Expired" column ensures previously included TCMs, that are now expired, are not to be included as part of the claimed emissions benefits. Benefits are only quantified and applied for analysis year 2018.

Exhibit 8.5-1: Conformity Analysis of the Mobility 2045 Metropolitan Transportation Plan: Emission Reductions from On-Road Emission Reduction Control Strategies Analysis Year 2018

| Program Category | Project Type | Commitments | | | | 2018 Emission Reduction (lbs/day) | |
|------------------|--|---|------------------|------------------|---------|--|-----------------------|
| | | SIP | Modeled | Post- Processed | Expired | NO _x | VOC |
| | | | | | | Post-Processed | Post-Processed |
| SIP TCMs | Bike/ Pedestrian (Miles) | 459.14 | 0 | 459.14 | 0 | 47.97 | 52.65 |
| | Grade Separations (Locations) | 69 | 55 | 0 | 0 | All Modeled | All Modeled |
| | Rail-Grade Separations (Locations) | | 14 | 0 | 0 | All Modeled | All Modeled |
| | HOV ³⁴ (Miles) | 37 | 37 | 0 | 0 | All Modeled | All Modeled |
| | Intersection Improvements (Locations) | 547 | 0 | 547 | 0 | 175.12 | 89.96 |
| | Park and Ride Lots (Parking Spaces) | 3,398 | 443 | 1,908 | 1,047 | 19.87 | 7.49 |
| | Rail Transit (Miles) | 70.20 | 70.20 | 0 | 0 | All Modeled | All Modeled |
| | Traffic Signal Improvements - ESL and HOV Substitution (Locations) | N/A | 0 | 213 | 0 | 536.68 | 551.44 |
| | Vanpool Programs (Vanpools) | 216 | 0 | 216 | 216 | 0.00 | 0.00 |
| SIP WOE | Employee Trip Reduction Program (Regional Benefit) | N/A | Regional Benefit | 0 | 0 | All Modeled | All Modeled |
| | Texas Emission Reduction Program | N/A | 0 | Regional Benefit | 0 | Emission reduction benefits not quantified for this program in this analysis year. | |
| | Electric Vehicle Program | N/A | 0 | Regional Benefit | 0 | | |
| | AirCheck Texas Program (Regional Benefit) | N/A | 0 | Regional Benefit | 0 | | |
| TERMS | Grade Separations (Locations) | N/A | 0 | 7 | 0 | 10.15 | 5.22 |
| | Intersection Improvements (Locations) | N/A | 0 | 219 | 0 | 96.41 | 46.48 |
| | ITS (Regional Benefit) | N/A | 0 | Regional Benefit | 0 | 3,277.90 | 549.23 |
| | Park and Ride Lots (Parking Spaces) | N/A | 19,197 | 1,844 | 0 | 18.90 | 7.16 |
| | Vanpool Programs (Vanpools) | N/A | 0 | 304 | 0 | 58.74 | 26.11 |
| | | Total (lbs./day) | | | | 4,241.74 | 1,335.74 |
| | | Total (tons/day) | | | | 2.12 | 0.56 |
| | | | | | | NO_x (tons/day) | VOC (tons/day) |
| | | Modeled Emissions | | | | 115.11 | 60.31 |
| | | Post-Processed Emission Reductions | | | | 2.12 | 0.56 |
| | | Final On-Road Emissions | | | | 112.99 | 59.75 |
| | | 2017 MVEBs (2008 8-hour Ozone NAAQS) | | | | 130.77 | 64.91 |
| | | Surplus Emission Reductions | | | | 17.78 | 5.16 |

Source: NCTCOG Transportation Department

³⁴ HOV lanes identified in table are converted to HOV/Managed Lanes in future years.

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