2022 Transportation Conformity

Mobility 2045: The Metropolitan Transportation Plan for North Central Texas - 2022 Update
2023-2026 Transportation Improvement Program for North Central Texas
What is NCTCOG?

The North Central Texas Council of Governments (NCTCOG) is a voluntary association of, by, and for local governments within the 16-county North Central Texas Region. The agency was established by state enabling legislation in 1966 to assist local governments in planning for common needs, cooperating for mutual benefit, and coordinating for sound regional development. Its purpose is to strengthen both the individual and collective power of local governments, and to help them recognize regional opportunities, resolve regional problems, eliminate unnecessary duplication, and make joint regional decisions – as well as to develop the means to implement those decisions.

North Central Texas is a 16-county metropolitan region centered around Dallas and Fort Worth. The region has a population of more than 7 million (which is larger than 38 states), and an area of approximately 12,800 square miles (which is larger than nine states). NCTCOG has 229 member governments, including all 16 counties, 167 cities, 19 independent school districts, and 27 special districts.

NCTCOG’s structure is relatively simple. An elected or appointed public official from each member government makes up the General Assembly which annually elects NCTCOG’s Executive Board. The Executive Board is composed of 17 locally elected officials and one ex-officio non-voting member of the legislature. The Executive Board is the policy-making body for all activities undertaken by NCTCOG, including program activities and decisions, regional plans, and fiscal and budgetary policies. The Board is supported by policy development, technical advisory and study committees – and a professional staff led by R. Michael Eastland, Executive Director.

NCTCOG's offices are located in Arlington in the Centerpoint Two Building at 616 Six Flags Drive (approximately one-half mile south of the main entrance to Six Flags Over Texas).

North Central Texas Council of Governments
P. O. Box 5888
Arlington, Texas 76005-5888
(817) 640-3300
FAX: (817) 640-7806
Internet: http://www.nctcog.org

NCTCOG's Department of Transportation

Since 1974 NCTCOG has served as the Metropolitan Planning Organization (MPO) for transportation for the Dallas-Fort Worth area. NCTCOG’s Department of Transportation is responsible for the regional planning process for all modes of transportation. The department provides technical support and staff assistance to the Regional Transportation Council and its technical committees, which compose the MPO policy-making structure. In addition, the department provides technical assistance to the local governments of North Central Texas in planning, coordinating, and implementing transportation decisions.

Prepared in cooperation with the Federal Highway Administration, US Department of Transportation, and the Texas Department of Transportation.

The contents of this report reflect the views of the authors who are responsible for the opinions, findings, and conclusions presented herein. The contents do not necessarily reflect the views or policies of the Federal Highway Administration, the Federal Transit Administration, or the Texas Department of Transportation.
NCTCOG Executive Board 2021-2022

President
David Sweet
County Judge, Rockwall County

Vice President
Andrew Piel
Councilmember, City of Arlington

Secretary-Treasurer
Bill Heidemann
Mayor, City of Corinth

Past President
Ray Smith
Mayor, Town of Prosper

Director
Alfonso Campos
County Judge, Erath County

Director
Rick Carmona
Mayor, City of Terrell

Director
Jorja Clemson
Councilmember, City of Grand Prairie

Director
Michael D. Crain
Councilmember, City of Fort Worth

Director
Kevin Falconer
Mayor, City of Carrollton

Director
Clyde Hairston
Mayor, City of Lancaster

Director
Chris Hill
County Judge, Collin County

Director
Clay Lewis Jenkins
County Judge, Dallas County

Director
Cara Mendelsohn
Councilmember, City of Dallas

Director
B. Glen Whitley
County Judge, Tarrant County

Ex Officio, Non-Voting Member
Glenn Rogers
Member of the Texas Legislature

Executive Director
R. Michael Eastland

Regional Transportation Council 2021-2022

Theresa Daniel, Ph.D., Chair
Commissioner, Dallas County

Duncan Webb, Vice Chair
Commissioner, Collin County

Cary Moon, Secretary
Councilmember, City of Fort Worth

Daniel Alemán Jr.
Mayor, City of Mesquite

Richard E. Aubin
Councilmember, City of Garland

Dennis Bailey
Commissioner, Rockwall County

Adam Bazaldua
Councilmember, City of Dallas

Elizabeth M. Beck
Councilmember, City of Fort Worth

Gyna Bivens
Mayor Pro Tem, City of Fort Worth

Mohamed “Mo” Bur, P.E.
District Engineer, Texas Department of Transportation, Dallas District

Dianne Costa
Board Member, Denton County Transportation Authority

Jeff Davis
Chair, Trinity Metro

Pat Deen
County Judge, Parker County

Janet DePuy
Mayor Pro Tem, City of Richardson

Andy Eads
County Judge, Denton County

Kevin Falconer
Mayor, City of Carrollton

Gary Fickes
Commissioner, Tarrant County

George Fuller
Mayor, City of McKinney

Raul H. Gonzalez
Councilmember, City of Arlington

Barry L. Gordon
Mayor, Duncanville

Rick Grady
Councilmember, City of Plano

Lane Grayson
Commissioner, Ellis County

Mojy Haddad
Board Member, North Texas Tollway Authority

Roger Harmon
County Judge, Johnson County

Clay Lewis Jenkins
County Judge, Dallas County

Ron Jensen
Mayor, City of Grand Prairie

Carl L. Johnson, P.E.
District Engineer, Texas Department of Transportation, Fort Worth District

Brandon Jones
Councilmember, City of Lewisville

John Keating
Councilmember, City of Frisco

Mike Leyman
Councilmember, City of Mansfield

Alison Maguire
Councilmember, City of Denton

B. Adam McGough
Councilmember, City of Dallas

William Meadows
Board Member, Dallas Fort Worth International Airport

Allan E. Meagher
Councilmember, City of Irving

Cara Mendelsohn
Councilmember, City of Dallas

Omar Narvaez
Councilmember, City of Dallas

Philip J. Ritter
Citizen Representative, City of Dallas

Jim R. Ross
Mayor, City of Arlington

Chris Schulmeister
Councilmember, City of Allen

Jeremy Tompkins
Councilmember, City of Euless

T. Oscar Trevino, Jr., P.E.
Mayor, City of North Richland Hills

William Tsao, P.E.
Citizen Representative, City of Dallas

B. Glen Whitley
County Judge, Tarrant County

Michele Wong Krause
Chair, Dallas Area Rapid Transit

Michael Morris, P.E.
Director of Transportation, NCTCOG

Surface Transportation Technical Committee

Tanya Brooks, Chair
Assistant Director, Traffic Management Division
Transportation and Public Works
City of Fort Worth
ACKNOWLEDGEMENTS

The North Central Texas Council of Governments would like to thank the following agencies for their invaluable assistance in conducting this conformity analysis and preparing this report.

Environmental Protection Agency, Region 6
   Air Quality Planning Section

Federal Highway Administration

Federal Transit Administration

Texas Commission on Environmental Quality
   Air Quality Division

Texas A&M Transportation Institute

Texas Department of Transportation
   Dallas District
   Fort Worth District
   Environmental Affairs Division
   Planning Division
This report documents the conformity determination of the Dallas-Fort Worth 10-county nonattainment area. As required under Section 176(c)(4) of the Clean Air Act Amendments of 1990, Metropolitan Planning Organizations and the US Department of Transportation are to make conformity determinations on transportation plans and transportation improvement programs before they are adopted, approved, or accepted in air quality nonattainment areas. This report documents the conformity determination of the Mobility 2045 – 2022 Update and 2023-2026 Transportation Improvement Program by demonstrating both plans meet the conformity-related requirements of the Clean Air Act (United States Code, Title 42 §7504, §7506 (c) and (d)), State Implementation Plan, and the final conformity rule (Title 40 Code of Federal Regulations, Parts 51 and 93).
# TABLE OF CONTENTS

## CHAPTER 1: EXECUTIVE SUMMARY
1.1 Conformity Overview ......................................................... 1
1.2 Nonattainment Area ......................................................... 1
1.3 Analysis ............................................................................... 2
1.4 Summary ............................................................................ 3

## CHAPTER 2: AIR QUALITY
2.1 Air Pollution ........................................................................ 5
2.1.1 Ground Level Ozone .................................................. 5
2.2 Background on the North Central Texas Ozone Nonattainment Area ........................................................................ 6
2.2.1 1-Hour Ozone NAAQS .............................................. 6
2.2.2 8-Hour Ozone NAAQS .............................................. 7

## CHAPTER 3: CONFORMITY
3.1 What is Transportation Conformity? ..................................... 15
3.2 Conformity Criteria ............................................................. 19
3.3 Checklist ............................................................................. 20
3.4 Emissions Analysis .............................................................. 23
3.4.1 Regional Inventory ...................................................... 23
3.4.2 Emissions Tests ............................................................ 23
3.4.3 Analysis Years .............................................................. 24
3.4.4 Analysis Results ........................................................... 24

## CHAPTER 4: MOBILITY 2045: THE METROPOLITAN TRANSPORTATION PLAN FOR NORTH CENTRAL TEXAS – 2022 UPDATE AND THE 2023-2026 TRANSPORTATION IMPROVEMENT PROGRAM
4.1 Overview ............................................................................ 27
4.2 Submittal Frequency ............................................................ 27
4.3 Regionally Significant Control Program ................................ 27
4.4 Regionally Significant Travel Projects/Programs .................. 28
4.5 Non-Federal Projects/Programs .......................................... 28
4.6 Exempt Projects/Programs ................................................ 28
4.7 Constraints .......................................................................... 28
4.7.1 Long-Range Financial Constraint (MTP) ......................... 29
4.7.2 Short-Range Financial Constraint (TIP) ......................... 29

## CHAPTER 5: ESTIMATION OF VEHICLE ACTIVITY
5.1 Dallas-Fort Worth Travel Model for the Expanded Area Overview .......................................................... 31
5.2 Multimodal Transportation Analysis Process ....................... 31
5.3 Model Adjustments ............................................................ 31
5.3.1 Model VMT Adjustments (HPMS VS TAFT) ..................... 32
5.3.2 Seasonal and Daily Adjustments .................................... 32
5.3.3 Hourly Adjustments ...................................................... 32
5.3.4 Non-Recurring Congestion .......................................... 32
5.4 Transit Systems ................................................................. 33
5.4.1 Transit VMT ............................................................... 33
5.5 Roadway VMT ................................................................. 34
5.5.1 Average Loaded Speeds .............................................. 34
5.5.2 Centerline and Lane Miles .......................................... 34

## CHAPTER 6: ESTIMATION OF OFF-NETWORK ACTIVITY
6.1 Vehicle Type Populations .................................................... 35
Exhibit 8.5-1: Conformity Analysis of the Mobility 2045 Metropolitan Transportation Plan: Emission Reductions from On-Road Emission Reduction Control Strategies Analysis Year 2023......51

Exhibit 9.2-1: Modeled Emissions ..............................................................................................................53

Exhibit 9.4-1: Sum of MoSERS ....................................................................................................................54

Exhibit 9.5-1: Final Emission Analysis Results ............................................................................................54

Exhibit 10.1-1: Interagency Consultation Conference Call Participation ...................................................55

Exhibit 10.1-2: Interagency Consultation Process .....................................................................................56

Exhibit 11.1-1: Public Involvement/Consultation for Transportation Conformity of Mobility 2045 – 2022 Update and 2023-2026 Transportation Improvement Program ...................58

Exhibit 11.1-2: Mobility 2045 – 2022 Update, 2023-2026 TIP, and 2022 Transportation Conformity Timeline ........................................................................................................................................59
## Glossary of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQ</td>
<td>Air Quality</td>
</tr>
<tr>
<td>AD</td>
<td>Attainment Demonstration</td>
</tr>
<tr>
<td>APU</td>
<td>Auxiliary Power Unit</td>
</tr>
<tr>
<td>ASM</td>
<td>Acceleration Simulation Mode</td>
</tr>
<tr>
<td>ASWT</td>
<td>Average School Season Weekday Traffic</td>
</tr>
<tr>
<td>ATR</td>
<td>Automatic Traffic Recorder</td>
</tr>
<tr>
<td>CAA</td>
<td>Clean Air Act</td>
</tr>
<tr>
<td>CAAA</td>
<td>Clean Air Act Amendments of 1990</td>
</tr>
<tr>
<td>CMAQ</td>
<td>Congestion Mitigation and Air Quality Improvement Program</td>
</tr>
<tr>
<td>CO</td>
<td>Carbon Monoxide</td>
</tr>
<tr>
<td>DART</td>
<td>Dallas Area Rapid Transit</td>
</tr>
<tr>
<td>DCTA</td>
<td>Denton County Transit Authority</td>
</tr>
<tr>
<td>DFW</td>
<td>Dallas-Fort Worth</td>
</tr>
<tr>
<td>TAFT</td>
<td>Dallas-Fort Worth Travel Model for the Expanded Area</td>
</tr>
<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
</tr>
<tr>
<td>FAST ACT</td>
<td>Fixing America’s Surface Transportation Act</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
</tr>
<tr>
<td>FR</td>
<td>Federal Register</td>
</tr>
<tr>
<td>FTA</td>
<td>Federal Transit Administration</td>
</tr>
<tr>
<td>FWTA</td>
<td>Fort Worth Transportation Authority</td>
</tr>
<tr>
<td>GIS DK</td>
<td>Geographic Information System Developer Kit</td>
</tr>
<tr>
<td>HBW</td>
<td>Home-Based Work</td>
</tr>
<tr>
<td>HNW</td>
<td>Home-Based Non-Work</td>
</tr>
<tr>
<td>HDV</td>
<td>Heavy-Duty Vehicle</td>
</tr>
<tr>
<td>HOV</td>
<td>High-Occupancy Vehicle</td>
</tr>
<tr>
<td>HPMS</td>
<td>Highway Performance Monitoring System</td>
</tr>
<tr>
<td>I/M</td>
<td>Inspection and Maintenance Program</td>
</tr>
<tr>
<td>IOP</td>
<td>Increment of Progress</td>
</tr>
<tr>
<td>ITS</td>
<td>Intelligent Transportation System</td>
</tr>
<tr>
<td>lbs/d</td>
<td>Pounds per Day</td>
</tr>
<tr>
<td>LED</td>
<td>Low Emission Diesel</td>
</tr>
<tr>
<td>MAP-21</td>
<td>Moving Ahead for Progress in the 21st Century</td>
</tr>
<tr>
<td>MITS</td>
<td>Mobility Impaired Transportation Service</td>
</tr>
<tr>
<td>MoSERS</td>
<td>Mobile Source Emissions Reduction Strategies</td>
</tr>
<tr>
<td>Mobility 2040</td>
<td>Mobility 2040: The Metropolitan Transportation Plan for North Central Texas</td>
</tr>
<tr>
<td>MOVES</td>
<td>Motor Vehicle Emissions Simulator</td>
</tr>
<tr>
<td>MPA</td>
<td>Metropolitan Planning Area</td>
</tr>
<tr>
<td>MPO</td>
<td>Metropolitan Planning Organization</td>
</tr>
<tr>
<td>MTP</td>
<td>Metropolitan Transportation Plan</td>
</tr>
<tr>
<td>MVEB</td>
<td>Motor Vehicle Emissions Budgets</td>
</tr>
<tr>
<td>NAAQS</td>
<td>National Ambient Air Quality Standards</td>
</tr>
<tr>
<td>NCT</td>
<td>North Central Texas</td>
</tr>
<tr>
<td>NCTCOG</td>
<td>North Central Texas Council of Governments</td>
</tr>
<tr>
<td>NHB</td>
<td>Non-Home-Based</td>
</tr>
<tr>
<td>NOx</td>
<td>Nitrogen Oxides</td>
</tr>
<tr>
<td>OBD</td>
<td>On-Board Diagnostic Systems</td>
</tr>
<tr>
<td>ONI</td>
<td>Off-Network Idle</td>
</tr>
<tr>
<td>ppb</td>
<td>Parts per Billion</td>
</tr>
<tr>
<td>ppm</td>
<td>Parts per Million</td>
</tr>
<tr>
<td>PM</td>
<td>Particulate Matter</td>
</tr>
<tr>
<td>RFG</td>
<td>Reformulated Gasoline</td>
</tr>
<tr>
<td>RTP</td>
<td>Revolutions per Minute</td>
</tr>
<tr>
<td>RVP</td>
<td>Reid Vapor Pressure</td>
</tr>
<tr>
<td>SAFETEA-LU</td>
<td>Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users</td>
</tr>
<tr>
<td>SHI</td>
<td>Source Hours Idling</td>
</tr>
<tr>
<td>SHP</td>
<td>Source Hours Parked</td>
</tr>
<tr>
<td>SHO</td>
<td>Source Hours Operating</td>
</tr>
<tr>
<td>SIP</td>
<td>State Implementation Plan</td>
</tr>
<tr>
<td>STTC</td>
<td>Surface Transportation Technical Committee</td>
</tr>
<tr>
<td>SUT</td>
<td>Source Use Type</td>
</tr>
<tr>
<td>TCM</td>
<td>Transportation Control Measure</td>
</tr>
<tr>
<td>TCEQ</td>
<td>Texas Commission on Environmental Quality</td>
</tr>
<tr>
<td>TERMS</td>
<td>Transportation Emission Reduction Measures</td>
</tr>
<tr>
<td>TIP</td>
<td>Transportation Improvement Program</td>
</tr>
<tr>
<td>TNRCC</td>
<td>Texas Natural Resource Conservation Commission</td>
</tr>
<tr>
<td>TPD</td>
<td>Tons per Day</td>
</tr>
<tr>
<td>TRE</td>
<td>Trinity Railway Express</td>
</tr>
<tr>
<td>TSZ</td>
<td>Traffic Survey Zone</td>
</tr>
<tr>
<td>TTI</td>
<td>Texas A&amp;M Transportation Institute</td>
</tr>
<tr>
<td>TxDOT</td>
<td>Texas Department of Transportation</td>
</tr>
<tr>
<td>USC</td>
<td>United States Code</td>
</tr>
<tr>
<td>USDOT</td>
<td>United States Department of Transportation</td>
</tr>
<tr>
<td>VDF</td>
<td>Volume Delay Function</td>
</tr>
<tr>
<td>VHT</td>
<td>Vehicle Hours of Travel</td>
</tr>
<tr>
<td>VMEP</td>
<td>Voluntary Mobile Emissions Reduction Program</td>
</tr>
<tr>
<td>VMT</td>
<td>Vehicle Miles of Travel</td>
</tr>
<tr>
<td>VOC</td>
<td>Volatile Organic Compounds</td>
</tr>
</tbody>
</table>
This page intentionally left blank.