D-1. TRAVEL DEMAND MANAGEMENT

POLICIES

MTP Reference #	Congestion Management Process
TDM3-001	Support the Congestion Management Process, which includes explicit consideration and appropriate implementation of Travel Demand Management, Transportation System Management, and Intelligent Transportation Systems strategies during all stages of corridor development and operations.
TDM3-002	Support an integrated planning process that maximizes existing transportation system capacity before considering major capital infrastructure investment in the multimodal system.
TDM3-003	Implement Travel Demand Management strategies that assist in reducing the number of single-occupancy vehicle trips consistent with Regional Transportation Council Resolution R21-04, which supports the establishment of a regional single-occupancy vehicle trip reduction target of 20 percent annually.

PROGRAMS

Regional Trip Reduction Program	
Reference	TDM2-001
Background	The Regional Trip Reduction Program is an educational program designed to reduce employee commute vehicle trips through the promotion and implementation of Travel Demand Management strategies such as rideshare programs (carpooling and vanpooling), telecommuting and flexible work-hour programs, transit use, bicycling, and walking. Historically it has been a cooperative program between the North Central Texas Council of Governments, Dallas Area Rapid Transit, Trinity Metro, Denton County Transportation Authority, and other public- and private-sector organizations. The North Central Texas Council of Governments is the lead agency in promoting the program and educating employers on the benefits of establishing an employer-specific program.
Related Goals	• Improve the availability of transportation options for people and goods. • Support travel efficiency measures and system enhancements targeted at congestion reduction and management. • Preserve and enhance the natural environment, improve air quality, and promote active lifestyles.
Related Policies	TDM3-001; TDM3-002; TDM3-003
Implementation	Educational public-private initiatives target the region's large employers, including: • Marketing and recruitment • Assistance with program setup • Program maintenance • Data collection and reporting of results
Performance Dimensions	Encourage individual employers to develop trip reduction programs and set a goal of a minimum 20 percent reduction in vehicle commute trips.
Cost Estimate	Approximately $34.5 million

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Regional Vanpool Program	
Reference	TDM2-002
Background	The Regional Vanpool Program is a Travel Demand Management strategy implemented in the Dallas-Fort Worth region to reduce single-occupant vehicle travel on the roads and help improve air quality in our region. The program provides a shared-ride alternative to single-occupant vehicle travel for commuters traveling long distances and/or in areas with limited or no fixed-route service.
Related Goals	• Improve the availability of transportation options for people and goods. • Support travel efficiency measures and system enhancements targeted at congestion reduction and management. • Preserve and enhance the natural environment, improve air quality, and promote active lifestyles.
Related Policies	TDM3-001; TDM3-002; TDM3-003
Implementation	Vanpool Subsidy Program targeting long home-based work commute trips
Performance Dimensions	Reduction of 25,600+ vehicle trips per day by 2045
Cost Estimate	Approximately $307.3 million

Park-and-Ride Facilities	
Reference	TDM2-003
Background	Park-and-ride facilities are an element of our regional Travel Demand Management Program. Park-and-ride facilities serve as collection areas for people transferring to higher-occupancy vehicles, thus reducing congestion and vehicle emissions. The facilities are often located and designed to serve bus or rail transit, but many are used by carpoolers and vanpoolers as well.
Related Goals	• Improve the availability of transportation options for people and goods. • Support travel efficiency measures and system enhancements targeted at congestion reduction and management. • Preserve and enhance the natural environment, improve air quality, and promote active lifestyles.
Related Policies	TDM3-001; TDM3-002; TDM3-003
Implementation	• 74 existing park-and-ride facilities • 46 future park-and-ride facilities (planned and candidate locations) • Candidate corridors identified for further study • Refine recommendations and identify additional sites through corridor or subarea studies
Performance Dimensions	• Reduction of 884,000+ vehicle miles of travel per day (existing park-and-ride lots) • Reduction of 55,300+ vehicle trips per day (existing park-and-ride lots) • Reduction of 583,500+ vehicle miles of travel per day (future park-and-ride lots) • Reduction of 36,400+ vehicle trips per day (future park-and-ride lots)
Cost Estimate	Approximately $100.4 million

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Transportation Management Associations	
Reference	TDM2-004
Background	Transportation Management Associations are private and public-private organizations that implement congestion mitigation strategies and work together on local transportation issues. Many are incorporated, nonprofit organizations; they tend to be membership organizations made up of employers, developers, building owners, and local government representatives. Most Transportation Management Associations are located in areas of dense employment and focus on the Travel Demand Management programs of public and private employers.
Related Goals	• Improve the availability of transportation options for people and goods. • Support travel efficiency measures and system enhancements targeted at congestion reduction and management. • Preserve and enhance the natural environment, improve air quality, and promote active lifestyles.
Related Policies	TDM3-001; TDM3-002; TDM3-003
Implementation	• Candidate corridors identified for further study • Refine recommendations and identify additional sites through corridor studies
Performance Dimensions	Program effects are assumed to be captured in the Regional Trip Reduction Program
Cost Estimate	Approximately $10.2 million

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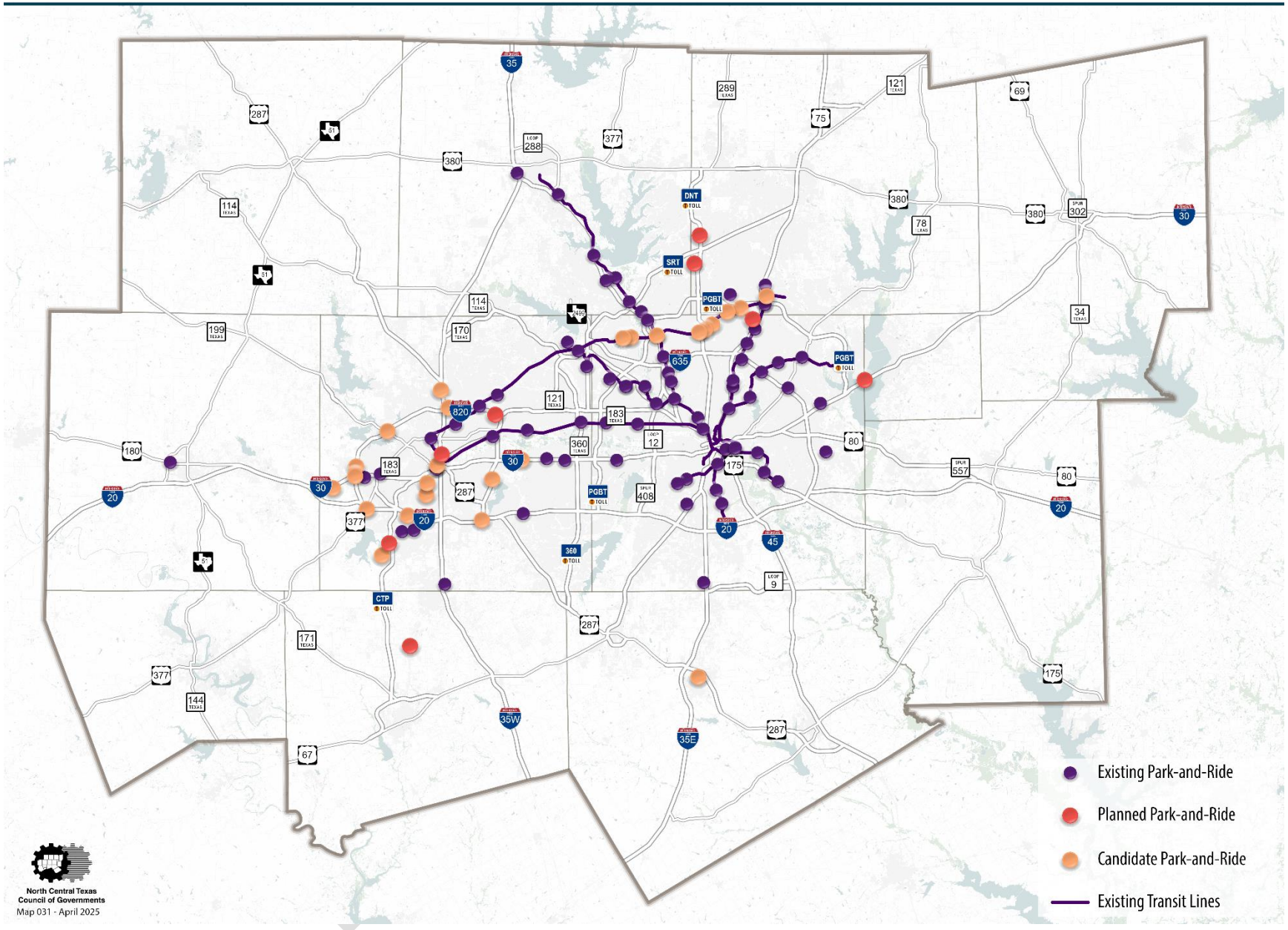
Park-and-Ride Locations



OTHER REFERENCED ITEMS

Existing Park-and-Ride Facilities

City/County	Name of Facility	Location of Facility	Facility Description	Implementing Agency	Number of Spaces
Addison/Dallas	Addison Transit Center	Arapaho Road at Addison Road	Transit Center	DART	300
Carrollton/Dallas	Downtown Carrolton Station	Belt Line Road and Broadway Street	Transit Center/Rail Station	DART	253
Carrollton/Dallas	North Carrollton/Frankford Station	South of Frankford Road and east of IH 35E	Rail Station	DART	887
Carrollton/Dallas	Trinity Mills Station	Trinity Mills Road and Broadway Street	Transit Center	DART	494
Dallas/Dallas	8th and Corinth Station	8th Street and Corinth Street	Transit Center/Rail Station	DART	195
Dallas/Dallas	Bachman Station	South of Northwest Highway on the west side of Denton Drive	Transit Center/Rail Station	DART	443
Dallas/Dallas	Buckner Station	Buckner Blvd. and Elam Road	Transit Center/Rail Station	DART	536
Dallas/Dallas	Forest Lane Station	Forest Lane east of North Central Expressway	Transit Center/Rail Station	DART	271
Dallas/Dallas	Hampton Station	Hampton Road and Wright Street	Transit Center/Rail Station	DART	499
Dallas/Dallas	Illinois Station	Denley Drive north of Illinois Avenue	Transit Center/Rail Station	DART	345
Dallas/Dallas	Inwood/Love Field Station	Southwest corner of Inwood Road and Denton Drive	Transit Center/Rail Station	DART	386
Dallas/Dallas	Kiest Station	Lancaster Road and Kiest Blvd.	Transit Center/Rail Station	DART	20
Dallas/Dallas	JB Jackson, Jr. Transit Center	North of Martin Luther King, Jr. between Trunk Avenue and JB Jackson, Jr. Blvd.	Transit Center	DART	200
Dallas/Dallas	Lake June Station	Lake June Road and US Highway 175	Transit Center	DART	472
Dallas/Dallas	Lawnview Station	Lawnview Avenue and Scyene Road	Transit Center/Rail Station	DART	381
Dallas/Dallas	LBJ/Central Station	South of IH 635 at TI Blvd.	Transit Center/Rail Station	DART	553
Dallas/Dallas	LBJ/Skillman Station	North of IH 635 between Skillman Street and Miller Road	Transit Center/Rail Station	DART	654
Dallas/Dallas	Ledbetter Station	Lancaster Road and Ledbetter Drive	Transit Center/Rail Station	DART	368
Dallas/Dallas	Market Center Station	Harry Hines Blvd. and Vegas Street	Transit Center/Rail Station	DART	230
Dallas/Dallas	MLK, Jr. Station	Trunk Avenue and South Blvd.	Transit Center/Rail Station	DART	200
Dallas/Dallas	Mockingbird/SMU Station	Mockingbird Lane east of North Central Expressway	Transit Center/Rail Station	DART	735

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City/County	Name of Facility	Location of Facility	Facility Description	Implementing Agency	Number of Spaces
Dallas/Dallas	Park Lane Station	Greenville Avenue north of Park Lane	Transit Center/Rail Station	DART	1,152
Dallas/Dallas	Red Bird Transit Center	Highway 67 and Hampton Road	Transit Center	DART	598
Dallas/Dallas	Royal Lane Station	North of Royal Lane on the east side of Denton Drive	Transit Center/Rail Station	DART	354
Dallas/Dallas	Walnut Hill Station	Walnut Hill Lane and Manderville Lane	Transit Center/Rail Station	DART	170
Dallas/Dallas	Walnut Hill/Denton Station	North of Walnut Hill Lane on the east side of Denton Drive	Transit Center/Rail Station	DART	361
Dallas/Dallas	Westmoreland Station	Illinois Avenue and Westmoreland Road	Transit Center/Rail Station	DART	700
Dallas/Dallas	White Rock Station	E. Northwest Highway near Lawther Drive	Transit Center/Rail Station	DART	488
Farmers Branch/Dallas	Farmers Branch Station	South of Valley View Lane on the east side of Denton Drive	Transit Center/Rail Station	DART	237
Garland/Dallas	Downtown Garland Station	Walnut Street at 5th Street	Transit Center/Rail Station	DART	550
Garland/Dallas	Forest/Jupiter Station	Forest Lane at Barnes Drive	Transit Center/Rail Station	DART	561
Garland/Dallas	Lake Ray Hubbard Transit Center	Duck Creek Drive west of Broadway Blvd.	Transit Center	DART	660
Garland/Dallas	South Garland Transit Center	LBJ Freeway service road between Shiloh Road and Leon Road	Transit Center	DART	600
Glenn Heights/Dallas	Glenn Heights Park-and-Ride	West of IH 35E at Gateway Blvd. and Bear Creek Road East	Transit Center	DART	595
Grand Prairie/Dallas	Grand Prairie Park-and-Ride	IH 30 and Belt Line Road	Park-and-Ride	Grand Prairie	350
Irving/Dallas	North Irving Transit Center	North O'Conner Blvd. and Northwest Highway	Transit Center	DART	715
Irving/Dallas	Downtown Irving/Heritage Crossing Station	Rock Island Road east of O'Conner Road	Transit Center/Rail Station	DART	457
Irving/Dallas	West Irving Station	Jackson Street near Esters Road	Transit Center/Rail Station	DART	500
Irving/Dallas	Belt Line Station	East of Belt Line Road and west of SH 61	Transit Center/Rail Station	DART	597
Irving/Dallas	North Lake College Station	East of Walnut Hill Lane and north of North Lake College Campus	Transit Center/Rail Station	DART	194
Plano/Collin	Parker Road Station	Archerwood Street between East Park Blvd. and Parker Road	Transit Center/Rail Station	DART	2,078
Plano/Collin	Jack Hatchell Transit Center	15th Street west of Coit Road	Transit Center	DART	822
Richardson/Collin	Bush Turnpike Station	President George Bush Turnpike frontage road east of North Central Expressway and west of Plano Road	Transit Center/Rail Station	DART	1,193

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City/County	Name of Facility	Location of Facility	Facility Description	Implementing Agency	Number of Spaces
Richardson/Dallas	Arapaho Center Station	Arapaho Road at Greenville Avenue	Transit Center/Rail Station	DART	1,100
Richardson/Dallas	Spring Valley Station	Spring Valley Road east of North Central Expressway at Lingoc Drive	Transit Center/Rail Station	DART	393
Rowlett/Dallas	Downtown Rowlett Station	Industrial Street and Martin Drive	Transit Center	DART	750
Arlington/Tarrant	Arlington Park-and-Ride	IH 30 at Lamar Blvd. west of Cooper Street	Park-and-Ride	Arlington	520
Arlington/Tarrant	Arlington Park-and-Ride	Park Springs Blvd. at IH 20	Park-and-Ride	Arlington	354
Arlington/Tarrant	Arlington Park-and-Ride at Lot G	East Copeland Road at AT&T Way	Park-and-Ride	NCTCOG/Texas Rangers	100
Fort Worth/Tarrant	Altamesa Church of Christ	4600 Altamesa Blvd.	Transit Center	Trinity Metro	100
Fort Worth/Tarrant	Edge Park Methodist Church	5616 Crowley Road	Transit Center	Trinity Metro	50
Fort Worth/Tarrant	St. Bartholomew Catholic Church	3601 Altamesa Blvd.	Transit Center	Trinity Metro	85
Fort Worth/Tarrant	Western Hills Methodist Church	2820 Laredo Drive	Transit Center	Trinity Metro	80
Fort Worth/Tarrant	South Park-and-Ride	IH 35 Alsbury Blvd. exit	Transit Center	Trinity Metro	293
Fort Worth/Tarrant	Ridgmar Mall	IH 30 at Green Oaks Road	Transit Center	Trinity Metro	N/A
Fort Worth/Tarrant	Fort Worth T&P Station	221 W. Lancaster Avenue	Transit Center/Rail Station	Trinity Metro	376
Fort Worth/Tarrant	North Park-and-Ride	10157 North Freeway	Park-and-Ride	Trinity Metro	196
Richland Hills/Tarrant	Richland Hills Station	7225 Burns Street	Transit Center/Rail Station	Trinity Metro	364
Fort Worth/Tarrant	Hurst/Bell Station	3232 Bell Helicopter Blvd.	Rail Station	Trinity Metro	387
Fort Worth/Tarrant	CentrePort/DFW Airport Station	14470 Statler Blvd.	Transit Center/Rail Station	Trinity Metro	985
Denton/Denton	Texas Health Presbyterian Hospital Denton	3000 North IH 35 (west side parking lot)	Transit Center/Rail Station	DCTA	20
Lewisville/Denton	Hebron Station	952 Lakeside Circle	Transit Center/Rail Station	DCTA	393
Lewisville/Denton	Old Town Station	617 East Main Street	Transit Center/Rail Station	DCTA	357
Lewisville/Denton	Highland Village/Lewisville Lake	2998 North Stemmons Freeway	Transit Center/Rail Station	DCTA	133
Lewisville/Denton	Med Park Station	3220 MedPark Drive	Transit Center/Rail Station	DCTA	705
Lewisville/Denton	Downtown Denton Transit Center	604 East Hickory Street	Transit Center/Rail Station	DCTA	60

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Inventory of Planned Park-and-Ride Facilities

City/County	Location of Facility	Facility Description	Implementing Agency	Number of Spaces
Arlington/Tarrant	FM 157/TRE Station	Rail	Trinity Metro	TBD
Fort Worth/Tarrant	North Fort Worth	Rail	Trinity Metro	500
Fort Worth/Tarrant	Sycamore School Road	Park-and-Ride	Trinity Metro	TBD
Frisco/Collin	Dallas North Tollway	Park-and-Ride	Frisco	350
Joshua/Johnson	Plum Street	Park-and-Ride	Joshua	255
North Richland Hills/Tarrant	IH 820 at SH 26	Park-and-Ride	North Richland Hills	100
Plano/Collin	Northwest Plano	Rail	DART	544-716
Richardson/Dallas	Richardson	Park-and-Ride	Richardson	300
Rowlett/Rockwall	Rowlett Waterfront Station	Park-and-Ride	Rowlett	1000

Inventory of Candidate Park-and-Ride Facilities

City/County	Candidate Locations	Source	Comments
Dallas/Collin	Renner Village Station	Cotton Belt Corridor Study	Performed by NCTCOG Environmental Streamlining Team
Plano/Collin	12th Street Station	Cotton Belt Corridor Study	Performed by NCTCOG Environmental Streamlining Team
Richardson/Collin	UTD/Synergy Park Station	Cotton Belt Corridor Study	Performed by NCTCOG Environmental Streamlining Team
Addison/Dallas	Addison Transit Center	Cotton Belt Corridor Study	Performed by NCTCOG Environmental Streamlining Team
Carrollton/Dallas	Downtown Carrollton Station	Cotton Belt Corridor Study	Performed by NCTCOG Environmental Streamlining Team
Dallas/Dallas	Preston Road Station	Cotton Belt Corridor Study	Performed by NCTCOG Environmental Streamlining Team
Dallas/Dallas	Knoll Trail Station	Cotton Belt Corridor Study	Performed by NCTCOG Environmental Streamlining Team
Dallas/Dallas	North Lake Station	Cotton Belt Corridor Study	Performed by NCTCOG Environmental Streamlining Team
Waxahachie/Ellis	South Town	City of Waxahachie	Possible future facility
Colleyville/Tarrant	Colleyville	Trinity Metro Alternatives Analysis for the Cotton Bowl Corridor	Performed by NCTCOG Transit Team
Fort Worth/Tarrant	Berry Street – Texas Christian University	Trinity Metro Alternatives Analysis for the Cotton Bowl Corridor	Performed by NCTCOG Transit Team
Fort Worth/Tarrant	Medical District – Fort Worth	Trinity Metro Alternatives Analysis for the Cotton Bowl Corridor	Performed by NCTCOG Transit Team

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City/County	Candidate Locations	Source	Comments
Fort Worth/Tarrant	Stockyards – 28th Street	Trinity Metro Alternatives Analysis for the Cotton Bowl Corridor	Performed by NCTCOG Transit Team
Fort Worth/Tarrant	Beach Street	Trinity Metro Alternatives Analysis for the Cotton Bowl Corridor	Performed by NCTCOG Transit Team
Fort Worth/Tarrant	SH 287/IH 35E	Trinity Metro Park-and-Ride Study	Performed by NCTCOG Travel Demand Management Team
Fort Worth/Tarrant	Basswood Blvd./Riverside Drive	Trinity Metro Park-and-Ride Study	Performed by NCTCOG Travel Demand Management Team
Fort Worth/Tarrant	SH 199/Loop 820	Trinity Metro Park-and-Ride Study	Performed by NCTCOG Travel Demand Management Team
Fort Worth/Tarrant	Loop 820/White Settlement Road	Trinity Metro Park-and-Ride Study	Performed by NCTCOG Travel Demand Management Team
Fort Worth/Tarrant	IH 30/IH 820	Trinity Metro Park-and-Ride Study	Performed by NCTCOG Travel Demand Management Team
Fort Worth/Tarrant	IH 20/IH 30 merge	Trinity Metro Park-and-Ride Study	Performed by NCTCOG Travel Demand Management Team
Fort Worth/Tarrant	IH 20/Aledo Road	Trinity Metro Park-and-Ride Study	Performed by NCTCOG Travel Demand Management Team
Fort Worth/Tarrant	Lancaster Avenue/Pine Street	Trinity Metro Park-and-Ride Study	Performed by NCTCOG Transit Team
Fort Worth/Tarrant	Loop 820/Mansfield Highway	Trinity Metro Park-and-Ride Study	Performed by NCTCOG Travel Demand Management Team
Fort Worth/Tarrant	Loop 820/Lancaster Avenue	Trinity Metro Park-and-Ride Study	Performed by NCTCOG Transit Team
Fort Worth/Tarrant	IH 30/Eastchase Parkway	Trinity Metro Park-and-Ride Study	Performed by NCTCOG Travel Demand Management Team
Fort Worth/Tarrant	IH 20/Granbury Station	Cotton Belt Corridor Study	Performed by NCTCOG Environmental Streamlining Team
Fort Worth/Tarrant	McPherson Station	Cotton Belt Corridor Study	Performed by NCTCOG Environmental Streamlining Team
Grapevine/Tarrant	Grapevine – Main Street	Trinity Metro Alternatives Analysis for the Cotton Bowl Corridor	Performed by NCTCOG Transit Team
Grapevine/Tarrant	Dallas-Fort Worth North Park-and-Ride	Trinity Metro Alternatives Analysis for the Cotton Bowl Corridor	Performed by NCTCOG Transit Team
Grapevine/Tarrant	Dallas Fort Worth International Airport (A/B Terminal)	Cotton Belt Corridor Study	Performed by NCTCOG Environmental Streamlining Team
North Richland Hills/Tarrant	Loop 820 – North Richland Hills (Iron Horse)	Trinity Metro Alternatives Analysis for the Cotton Bowl Corridor	Performed by NCTCOG Transit Team
North Richland Hills/Tarrant	Main Street – Davis Blvd. (Smithfield)	Trinity Metro Alternatives Analysis for the Cotton Bowl Corridor	Performed by NCTCOG Transit Team
North Richland Hills/Tarrant	Loop 820 – US 377 (Haltom City)	Trinity Metro Alternatives Analysis for the Cotton Bowl Corridor	Performed by NCTCOG Transit Team

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City/County	Candidate Locations	Source	Comments
Southlake/Tarrant	Southlake Station	Cotton Belt Corridor Study	Performed by NCTCOG Environmental Streamlining Team
Hood County	To be evaluated	Metropolitan Planning Area Boundary Expansion	Possible future facility
Hunt County	To be evaluated	Metropolitan Planning Area Boundary Expansion	Possible future facility
Wise County	To be evaluated	Metropolitan Planning Area Boundary Expansion	Possible future facility

Inventory of Existing and Candidate Transportation Management Associations

County	Location	Source	Status/Comments
Dallas	Central Dallas Association – Downtown Dallas	Feasibility Study	Currently operating
Tarrant	Downtown Fort Worth, Inc. – City of Fort Worth	Feasibility Study	Currently operating
Collin	Legacy Area TMA – City of Plano	Regional Analysis	Currently operating
Dallas	Southern Dallas County Inland Port TMA	Local Initiative	Currently operating
Dallas	Greater Irving – Las Colinas TMA	Northwest Corridor Major Investment Study	Funded but not implemented
Dallas	East Side Farmers Branch	Regional Analysis	Candidate Location
Dallas	Richardson/North Central Expressway	Local Initiative	Candidate Location
Dallas	Belt Line Road	Northwest Corridor Major Investment Study	Candidate location
Dallas	IH 635/Valwood Parkway	Northwest Corridor Major Investment Study	Candidate location
Dallas	IH 635/Stemmons Freeway	Northwest Corridor Major Investment Study	Candidate Location
Dallas	IH 35E/Walnut Hill Lane	Northwest Corridor Major Investment Study	Candidate location
Dallas	SH 114/SH 161	Northwest Corridor Major Investment Study	Candidate location
Dallas	SH 114/North Irving Transit Center	Northwest Corridor Major Investment Study	Candidate location
Dallas	SH 183	Northwest Corridor Major Investment Study	Candidate location
Dallas	Walnut Hill Area	Loop 12 Major Investment Study	Candidate location
Dallas	SH 190/Plano Parkway Corredor	Regional Analysis	Candidate location
Dallas	Stemmons Corridor (north of Loop 12)	Northwest Corridor Major Investment Study	Candidate location
Dallas	SH 114 Corridor (north of SH 183)	SH 114/SH 121 Major Investment Study	Candidate location
Dallas	Stemmons Corridor (north of the Dallas CBD)	Stemmons Business Corridor TMA Feasibility Study	Candidate location
Dallas	Dallas North Tollway (vicinity of IH 635)	Regional Analysis	Candidate location
Dallas	Dallas North Tollway (vicinity of SH 121)	Regional Analysis	Candidate location
Dallas	IH 635 and US 75 interchange	Regional Analysis	Candidate location
Dallas	Garland Employment District	Regional Analysis	Candidate location
Tarrant	Grapevine area (north of Dallas Fort Worth International Airport)	SH 114/SH 121 Major Investment Study	Candidate location
Tarrant	SH 360 Corridor (north of IH 30)	Regional Analysis	Candidate location
Tarrant	Alliance Area	Local Initiative	Candidate location

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D-2. TRANSPORTATION SYSTEM MANAGEMENT AND OPERATIONS

POLICIES

MTP Reference #	Management and Operations Infrastructure Maintenance, Rehabilitation, and Operations
MO3-001	Ensure the efficient operation of the existing multimodal transportation system by evaluating and/or implementing maintenance, rehabilitation, enhancement, and/or operational type projects in order to maintain safe, efficient travel conditions.
MO3-002	Ensure the existing multimodal transportation system operates efficiently by balancing the demand across all available assets and ensuring integration between systems.

MTP Reference #	Transportation System Management and Operations
TSMO3-001	Installation of pedestrian facilities by local agencies as part of intersection improvement and traffic signal improvement programs shall provide access to usable walkways or sidewalks.
TSMO3-002	Require regional partners to coordinate during major special events or planned events to ensure minimal impact on the transportation system for individuals traveling to an event or through an event zone.
TSMO3-003	Priority funding consideration will be given to projects that meet the regional Intelligent Transportation Systems deployment initiatives as outlined in the Dallas-Fort Worth Regional Intelligent Transportation Systems Architecture.
TSMO3-004	Intelligent Transportation Systems projects must be consistent with the architecture and standards described in the Dallas-Fort Worth Regional Intelligent Transportation Systems Architecture.
TSMO3-005	Encourage, evaluate, and deploy new energy-efficient, low-cost technologies for Intelligent Transportation Systems and Transportation System Management and Operations projects.
TSMO3-006	Integrate all traffic operations systems between public sector entities, including sharing of data and videos.
TSMO3-007	Operate, maintain, and optimize functionality across the design-life cycle of Intelligent Transportation Systems field devices and traffic signals.
TSMO3-008	Projects with new signal construction and reconstruction of signals at intersections with configuration changes will include signal timing plans appropriate for the corridor. Additionally, if the signal is on a corridor with coordinated/synchronized signal operation, the timing plans are to be coordinated.

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PROGRAMS

Intersection Improvement Program	
Reference	TSMO2-001
Background	Infrastructure improvements such as turning lanes, grade separations, pavement striping, signage and lighting, bus turnouts, and channelization of traffic can greatly improve traffic flow operation on arterials and at intersections.
Related Goals	Support travel efficiency measures and system enhancements targeted at congestion reduction and management.
Related Policies	TSMO3-001
Implementation	Secure funding to develop intersection improvement programs.
Performance Dimensions	The performance of this program will be evaluated based on a reduction in congestion delay of 37,500 person hours per day.
Cost Estimate	Approximately $2.30 billion

Signal Improvement Program	
Reference	TSMO2-002
Background	Traffic signal improvements such as signal timing optimization, signal hardware upgrade, and system interconnection.
Related Goals	Support travel efficiency measures and system enhancements targeted at congestion reduction and management.
Related Policies	TSMO3-001
Implementation	Secure funding to develop signal improvement programs.
Performance Dimensions	The performance of this program will be evaluated based on a reduction in congestion delay of 59,000 person hours per day.
Cost Estimate	Approximately $1.02 billion

Bottleneck Improvement Program	
Reference	TSMO2-003
Background	Include usage of a short section of shoulder as an additional travel lane, restripe merge or diverge areas to better serve demand, reduce lane widths to add a travel and/or auxiliary lane, modify weaving (add collector-distributor or through lanes), meter or close entrance ramps, improve traffic signal timing on arterials, high-occupancy vehicle lanes, or reversible lanes.
Related Goals	Support travel efficiency measures and system enhancements targeted at congestion reduction and management.
Related Policies	N/A
Implementation	Secure funding to develop bottleneck improvement programs.
Performance Dimensions	The performance of this program will be evaluated based on an increase in average speed on freeways and parallel arterials, and a reduction in congestion delay.
Cost Estimate	Approximately $382.5 million

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Special Events Management Program	
Reference	TSMO2-004
Background	Interagency program to identify special events and develop and implement congestion mitigation strategies (Transportation System Management, Intelligent Transportation Systems, and Travel Demand Management). Analyze the usage of transportation facilities such as high-occupancy vehicles during special events. Some of these strategies include: • Roadway signage • Purchase or rental of portable dynamic message signs to direct traffic • Additional staff to man operations centers • Moveable barriers to separate traffic • Increased use of transit vehicles • Parking management • Other strategies as identified
Related Goals	Provide for timely project planning and implementation.
Related Policies	TSMO3-002
Implementation	Secure funding to develop special events management programs.
Performance Dimensions	The performance of this program will be evaluated based on reducing congestion delay and improving traffic flow as measured by average vehicle speed and related indicators, and by increasing transit ridership and managed lane use during special events.
Cost Estimate	Approximately $33.7 million

Bottleneck Program for Regional Corridors	
Reference	TSMO2-005
Background	The removal of key regional roadway improvements from the Metropolitan Transportation Plan may create bottlenecks at interfaces with implemented projects. Other isolated locations of severe congestion may also be identified for needed expansion. These congested locations will be reviewed and potentially recommended for some form of improvement as part of a strategic bottleneck removal program.
Related Goals	Support travel efficiency measures and system enhancements targeted at congestion reduction and management.
Related Policies	N/A
Implementation	Bottlenecks will be handled on an individual basis with solutions determined based on the unique circumstances of each case. Implementation of bottleneck removal may include restriping of merging or diverging areas, interim widening projects, restriping shoulders for use as travel and/or auxiliary lanes, reducing lane width to add a travel and/or auxiliary lane, modifying weave patterns, metering or closing entrance ramps, improving traffic signal timing on arterials, implementing high-occupancy vehicle/managed lanes, adding new connector facilities, constructing short bypass routes to allow traffic to avoid congestion, and other strategies that may be developed based on review and analysis of needed improvements.
Performance Dimensions	The performance of proposed bottleneck removal projects will be evaluated based on the improvement to local traffic flow as measured by average vehicular speed, number of accidents, total vehicle miles traveled in the corridor, peak period, daily levels-of-service, and related indicators.
Cost Estimate	Approximately $701.8 million (categorized as roadway improvement)

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Intelligent Transportation Systems Implementation Program	
Reference	TSMO2-006
Background	Intelligent Transportation Systems improvements such as field devices, communication, central operating systems, Traffic Management Centers, and other elements contribute to optimizing the operational efficiency of the transportation system.
Related Goals	Provide for timely project planning and implementation.
Related Policies	TSMO3-003; TSMO3-004; TSMO3-005
Implementation	System development criteria: • Fill gaps in the existing Intelligent Transportation Systems communications infrastructure by completing critical system linkages. • Leverage transportation resources by targeting investment, where possible, to facilities undergoing reconstruction. • Leverage transportation resources by creating or enhancing public-private partnerships that will provide communications infrastructure for regional Intelligent Transportation Systems.
Performance Dimensions	The performance proposed will be evaluated based on the improvement to traffic flow as measured by average vehicular speed, congestion delay, daily levels-of-service, and related indicators.
Cost Estimate	Approximately $487.1 million

Regional Intelligent Transportation Systems Architecture Program	
Reference	TSMO2-007
Background	Intelligent Transportation Systems consistency with National/Regional Intelligent Transportation Systems Architecture is required for Intelligent Transportation Systems project implementation.
Related Goals	Provide for timely project planning and implementation.
Related Policies	TSMO3-003; TSMO3-004
Implementation	Projects must be consistent with the architecture and standards described in the current Intelligent Transportation Systems plans for the region: the Dallas Area-Wide Intelligent Transportation Systems Plan, the Fort Worth Regional Intelligent Transportation Systems Plan, and the Regional Intelligent Transportation Systems Architecture. Operating agreements will be developed between affected and collaborating parties. Open architecture should provide for future system expansion. Evaluation and reporting of Intelligent Transportation Systems effectiveness will be performed. The Regional Intelligent Transportation Systems Architecture will be updated, and an architecture maintenance plan will be developed. Upon inclusion of Intelligent Transportation Systems projects in the Transportation Improvement Program, and before funding agreements with the Texas Department of Transportation are developed, a Statement of National/Regional Architecture Consistency must be developed and reviewed by the Texas Department of Transportation and the Metropolitan Planning Organization. The statement should describe how projects are consistent with the architecture and standards described in the Dallas Area-Wide Intelligent Transportation Systems Plan or the Fort Worth Regional Intelligent Transportation Systems Plan and the Regional Intelligent Transportation Systems Architecture.
Performance Dimensions	The performance of this program will be evaluated based on project consistency with the North Central Texas Regional Intelligent Transportation Systems Architecture.
Cost Estimate	N/A – cost associated with planning element

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Advanced Traveler Information System Implementation Program	
Reference	TSMO2-008
Background	The Advanced Traveler Information System supports future personal, public, and freight transportation systems in the region.
Related Goals	Improve the availability of transportation options for people and goods.
Related Policies	TSMO3-004; TSMO3-005
Implementation	The Advanced Traveler Information System will provide information via variable message signs, highway advisory radio, commercial radio and television, kiosks, and through internet-based communications systems. The system includes several city and transit Traffic Management Centers. A regional traveler card is also recommended to enable the actual transfer of electronic information from the user of a service (a traveler) to the provider of the service. This may include the transfer of funds through means of an electronic payment instrument. The device may also hold and update the traveler's information such as personal profiles or trip histories.
Performance Dimensions	The performance of this program will be evaluated based on the improvement to traffic flow as measured by average vehicular speed, congestion delay, daily levels-of-service, and related indicators.
Cost Estimate	Part of Intelligent Transportation Systems Implementation Program cost

Advanced Traffic Management System Implementation Program	
Reference	TSMO2-009
Background	The Advanced Traffic Management System supports travel efficiency measures and system enhancements targeted at congestion reduction.
Related Goals	• Preserve and enhance the natural environment, improve air quality, and promote active lifestyles. • Support travel efficiency measures and system enhancements targeted at congestion reduction and management.
Related Policies	TSMO3-004; TSMO3-005
Implementation	Includes the integration of freeways and tollways, high-occupancy vehicle/managed facilities, and strategic arterials across jurisdictional lines. Includes operation of variable message signs to divert traffic around traffic incidents, closed-circuit television for traffic monitoring, incident verification and clearance, lane control signals for traffic management/incident management, and automated ramp metering systems to regulate freeway system access during peak travel periods. Traffic control subsystems on arterials that intersect with, or are parallel to, the limited-access freeway and tollway facilities should be integrated with freeway/tollway intelligent transportation infrastructure to support seamless, multimodal traffic management during traffic incidents and peak travel periods. Continuation of the Mobility Assistance Patrol Program is recommended, and increased coverage should focus on congested systems and peak periods. The substantial investment in freeway improvements represented in Mobility 2050 makes it imperative that operational plans be developed to manage and clear freeway incidents in a timely manner. The Texas Department of Transportation district offices are encouraged to work closely with the Regional Transportation Council, North Central Texas Council of Governments staff, and affected local governments to develop consistent, coordinated freeway operational plans that include quick incident clearance practices. These plans need to be in place prior to major freeway improvement expenditures in order to ensure the expected mobility benefits are realized.
Performance Dimensions	The performance of this program will be evaluated based on the improvement to traffic flow as measured by average vehicular speed, congestion delay, daily levels-of-service, and related indicators.
Cost Estimate	Part of Intelligent Transportation Systems Implementation Program cost

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Advanced Public Transportation System Implementation Program	
Reference	TSMO2-0010
Background	The Advanced Public Transportation System supports the efficiency, flexibility, and competitiveness of non-single-occupant vehicle transportation options.
Related Goals	• Preserve and enhance the natural environment, improve air quality, and promote active lifestyles. • Support travel efficiency measures and system enhancements targeted at congestion reduction and management.
Related Policies	TSMO3-003
Implementation	Includes Transit Management Centers integrated with state and local government Traffic Management Centers; automatic vehicle location technology and dynamic ride matching systems; automatic data collection, electronic fares collection, transit signal priority, and automated fleet maintenance; automated high-occupancy vehicle/managed facilities occupancy verification, enforcement, and high-occupancy vehicle/managed facilities operations, and special events management support.
Performance Dimensions	The performance of this program will be evaluated based on the improvement to traffic flow as measured by average vehicular speed, congestion delay, daily levels-of-service, increased transit ridership, and related indicators.
Cost Estimate	Part of Intelligent Transportation System Implementation Program cost

Intelligent Transportation Systems Interoperability Program	
Reference	TSMO2-0011
Background	Intelligent Transportation Systems interoperability includes center-to-center plug in, which focuses on prioritized data exchange for the cities and the region, and fiber-optic network communications sharing as recommended by the Interagency Communications Study and consistent with the North Central Texas Regional Intelligent Transportation Systems Architecture.
Related Goals	Provide for timely project planning and implementation.
Related Policies	TSMO3-004; TSMO3-006
Implementation	The region will collectively seek to build on the investment in center-to-center communication software provided through the Texas Department of Transportation's Inter-District Communications Project by extending it to other agencies. Agencies will work together to share video images for the purposes of incident management and traffic control. Agencies that acquire central system software will ensure that it includes National Transportation Communications for Intelligent Transportation Systems protocol-compliant center-to-center capability. Agencies with fiber-optic cables will allow the use of two fibers in every fiber link for the exchange of regional transportation information among agencies. Representatives of agencies owning communication links will meet to determine where and how they could provide alternate paths so that Agency A's communication flows over Agency B's cable links when Agency A's cable is cut. Agencies with communication links will make reasonable expenditures to facilitate, operate, and maintain the connection of their communications systems with those of other agencies. The goals and objectives of the center-to-center software are outlined below: • To provide a common repository for traffic information for the Dallas-Fort Worth region. • To provide an internet-based graphical map to display traffic conditions in the Dallas-Fort Worth region. • To provide a Microsoft Windows application that will allow agencies without a formal Traffic Management Center to participate in the center-to-center infrastructure and information sharing. • To provide a system that supports Intelligent Transportation Systems center-to-center communications for command/control/status of various Intelligent Transportation Systems field devices, including dynamic message signs, lane control signals, and closed-circuit television cameras, ramp meters, and highway advisory radios. • To utilize national Intelligent Transportation Systems standards to implement the project. • To provide a software system that is extensible to all local or regional partners; this would allow a local common repository to be created by linking individual partners, a regional common repository to be created by linking local common repositories, and a statewide common repository to be created by linking regional common repositories. A reporting mechanism will be established to report on implementation progress every six months.

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Intelligent Transportation Systems Interoperability Program	
Performance Dimensions	The performance of this program will be evaluated based on the ability of all local and regional partners to exchange data and video through center-to-center and fiber-optic networks, consistent with the North Central Texas Regional Intelligent Transportation Systems Architecture.
Cost Estimate	Part of Intelligent Transportation Systems Implementation Program cost

Arterial Grade Separation Program	
Reference	TSMO2-012
Background	Grade separations to improve traffic flow operation on arterials and at intersections.
Related Goals	Support travel efficiency measures and system enhancements targeted at congestion reduction and management.
Related Policies	TSMO3-003
Implementation	Secure funding to develop grade separation improvements over arterial streets.
Performance Dimensions	The performance of this program will be evaluated based on a reduction in congestion delay.
Cost Estimate	Included in TSMO2-001

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D-3. TRANSPORTATION SYSTEM SAFETY

POLICIES

MTP Reference #	Transportation System Safety
TSSF3-001	Implementation of safety strategies in work zones consistent with industry best practices.
TSSF3-002	Development of safety information projects and partnerships with the Texas Department of Transportation, local governments, local police departments, and other organizations to encourage the sharing of regional/jurisdictional safety data (including, but not limited to, crash data, fatality data, and incident response and clearance time data).
TSSF3-003	Implementation of programs, projects, and policies that assist in reducing roadway crashes in general and eliminating fatalities and serious injuries across all modes of travel toward zero deaths. (Vision Zero—the goal of eliminating traffic fatalities and severe injuries among all road users.)
TSSF3-004	Implementation of roadway improvement strategies that assist in reducing wrong-way driving incidents consistent with regional and/or industry best practices.
TSSF3-005	Implementation of low-cost, systemic safety countermeasures and improvements that assist in reducing fatalities and serious injury crashes consistent with strategies outlined in the *Intersection Safety Implementation Plan for North Central Texas*, the *Regional Roadway Safety Plan*, the *Regional Strategic Plans for Pedestrian Safety and Bicycle Safety*, and other applicable safety-related plans that promote the implementation of safety countermeasures on the regional roadway system.
TSSF3-006	Implementation of a multiagency Traffic Incident Management Program that establishes a common and coordinated response to traffic incidents consistent with Regional Transportation Council Resolution R08-10, which is a resolution supporting a comprehensive, coordinated, interagency approach to traffic incident management in the North Central Texas region. It includes the implementation of programs and projects that aid in quick incident clearance and roadway crash mitigation.

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Traffic Incident Management Program	
Reference	TSSF2-001
Background	The goal of the Traffic Incident Management Program is to initiate a common, coordinated response to traffic incidents that will build partnerships, enhance safety for emergency personnel, reduce upstream traffic accidents, improve the efficiency of the transportation system, and improve air quality in North Central Texas. Specific courses have been designed for both first responders and managers, and executive-level policy-makers. Each course explains the goals, objectives, and benefits of multiagency incident management coordination and training. Students are eligible for Texas Commission on Law Enforcement, Fire Commission, and Department of State & Health Services Emergency Medical Services Continuing Education Units. This program also includes the implementation of a multiagency Traffic Incident Management Program that establishes a common and coordinated response to traffic incidents consistent with Regional Transportation Council Resolution R08-10, which is a resolution supporting a comprehensive, coordinated, interagency approach to Traffic Incident Management in the North Central Texas region. Additionally, the program includes the implementation of projects, activities, technologies, and working groups that will reduce incident response and clearance times for roadways; and best practices and technologies that aid in quick incident clearance and roadway crash mitigation.
Related Goals	• Support travel efficiency measures and system enhancements targeted at congestion reduction and management. • Ensure adequate maintenance and enhance the safety and reliability of the existing transportation system. • Develop cost-effective projects and programs aimed at reducing the costs associated with constructing, operating, and maintaining the regional transportation system.
Related Policies	TSSF3-002; TSSF3-003; TSSF3-006; AV3-006
Implementation	Provide Traffic Incident Management training opportunities to regional incident responders. Implement a multi-agency Traffic Incident Management Program consistent with Regional Transportation Council Resolution R08-10. Compliancy component that considers active participation in incident management training and operational implementation when considering future Regional Transportation Council funding actions. Actively track agencies that have adopted a similar city resolution or ordinance. Collect and analyze incident response and clearance time information.
Performance Dimensions	• Offer six First Responder and Managers' Training Courses and train 240 students per year. • By 2045, offer a total of 270 total First Responder and Managers' training courses. • Agency training attendance. • Collection of incident response and clearance times with before and after analysis. • Ordinance adoption monitoring.
Cost Estimate	Approximately $34.2 million

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Regional Roadway Safety Assistance Patrol Program	
Reference	TSSF2-002
Background	The goals of the regional Roadway Safety Assistance Patrol Program are to improve safety and assist in the alleviation of congestion on area highways/freeways in the North Central Texas region. The Roadway Safety Assistance Patrol Program aids stalled and stranded motorists by helping them to move disabled vehicles from the mainlanes of regional highway/freeway facilities and ultimately get the vehicles operating or off the facility completely. Assistance is provided free of charge to the motorist. Services include assisting with flat tires, stalled vehicles, and minor accidents. Assistance is also provided to law enforcement with traffic control when deemed necessary or when requested by law enforcement.
Related Goals	• Support travel efficiency measures and system enhancements targeted at congestion reduction and management. • Ensure adequate maintenance and enhance the safety and reliability of the existing transportation system. • Develop cost-effective projects and programs aimed at reducing the costs associated with constructing, operating, and maintaining the regional transportation system.
Related Policies	TSSF3-001; TSSF3-002; TSSF3-003
Implementation	Continue to support and fund the regional Roadway Safety Assistance Patrol Program. Develop a process for implementing regular assessment periods for the Roadway Safety Assistance Patrol Program to assess key components of program operation (hours of operation, number of trucks, number and length of routes, etc.).
Performance Dimensions	• Type of assist (reason for stop) • Total assist by route • Total assist by shift • Total assist by roadway • Total assist by day of week • Manner detected • Other services performed (at stop)
Cost Estimate	Approximately $234.7 million

Regional Safety Information System	
Reference	TSSF2-003
Background	The Regional Safety Information System is a centralized database for regional traffic crash information. This system provides the ability to determine the most prevalent types of fatal, injury, and property damage crashes stratified by type of roadway and to identify locations with above-average crash histories.
Related Goals	• Support travel efficiency measures and system enhancements targeted at congestion reduction and management. • Ensure adequate maintenance and enhance the safety and reliability of the existing transportation system. • Develop cost-effective projects and programs aimed at reducing the costs associated with constructing, operating, and maintaining the regional transportation system.
Related Policies	TSSF3-002; TSSF3-003; TSSF3-004; TSSF3-005
Implementation	Provide a central location for regional traffic crash data. Collect safety data from various available sources, including the Texas Department of Transportation Crash Records Information System. Identify regional high crash locations and develop possible solutions. Acquire and integrate Texas Department of Transportation Crash Record Information System regional crash data and Fatality Analysis Reporting System data into the regional system. Analyze and map collected crash and fatality data. Determine the most prevalent types of fatal, injury, and property damage crashes stratified by type of roadway (freeway/tollway, arterial, collector, local). Identify locations with above-average crash histories. Improve traffic safety by primarily focusing on the identification of locations with high numbers of injury collisions and fatalities. Ensure proper crash data collection. Encourage regional crash data sharing.

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Regional Safety Information System	
Performance Dimensions	• Identify high crash locations, intersections, or hot spots. • Determine types of crashes and crash severity. • Identify contributing factors for serious injury and fatality crashes. • Develop county-, regional-, and corridor-level crash rates for limited-access facilities. • Provide an annual performance measure document that reports regional safety information and statistics.
Cost Estimate	Approximately $2.7 million

Safety Education and Training Program	
Reference	TSSF2-004
Background	Initiate transportation safety education and training courses.
Related Goals	• Support travel efficiency measures and system enhancements targeted at congestion reduction and management. • Ensure adequate maintenance and enhance the safety and reliability of the existing transportation system. • Develop cost-effective projects and programs aimed at reducing the costs associated with constructing, operating, and maintaining the regional transportation system.
Related Policies	TSSF3-001; TSSF3-002; TSSF3-003; TSSF3-004; TSSF3-005
Implementation	Offer safety-related seminars, webinars, and training courses to member agencies. Coordinate and offer safety-related workshops based on the voiced need of member agencies. Support the safety efforts of other organizations within the region. Initiate and support safety education and training courses for local governments and the public.
Performance Dimensions	• Track offered training opportunities and requested training courses. • Provide a centralized resource system for relevant reference items and material.
Cost Estimate	Program costs are included in other program implementations.

Roadway Safety Improvement Program	
Reference	TSSF2-005
Background	Implement low-cost, systemic safety countermeasures and improvements that assist in reducing fatalities and serious injury crashes consistent with strategies outlined in the *Intersection Safety Implementation Plan for North Central Texas*, the *Regional Roadway Safety Plan*, the *Regional Strategic Plans for Pedestrian Safety and Bicycle Safety*, and other applicable safety-related plans that promote the implementation of safety countermeasures on the regional roadway system.
Related Goals	• Support travel efficiency measures and system enhancements targeted at congestion reduction and management. • Ensure adequate maintenance and enhance the safety and reliability of the existing transportation system. • Develop cost-effective projects and programs aimed at reducing the costs associated with constructing, operating, and maintaining the regional transportation system.
Related Policies	TSSF3-001; TSSF3-002; TSSF3-003; TSSF3-004; TSSF3-005

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Roadway Safety Improvement Program	
Implementation	Implement low-cost, systemic safety countermeasures and improvements that assist in reducing fatalities and serious injury crashes consistent with strategies outlined in the *Intersection Safety Implementation Plan for North Central Texas*, the *Regional Roadway Safety Plan*, the *Regional Strategic Plans for Pedestrian Safety and Bicycle Safety*, and other applicable safety-related plans that promote the implementation of safety countermeasures on the regional roadway system. Conduct engineering studies and evaluations that are used to identify causal road factors in crashes with recommendations for mitigation. Implement roadway improvements. Identify and monitor transportation safety-related problems within the region. Develop and implement the appropriate countermeasures that address crash types and locations. Implement roadway safety improvements at hazardous locations and hot spots within the region. Participate in projects and activities that will reduce injuries and fatalities within the region.
Performance Dimensions	• Number of crashes before and after improvements. • Crash reductions by severity type, roadway facility type, contributing factor type. • Monitoring and reporting of results from implementation of established countermeasures. • Before-and-after pictorial documentation of roadway improvement projects.
Cost Estimate	Approximately $162.2 million

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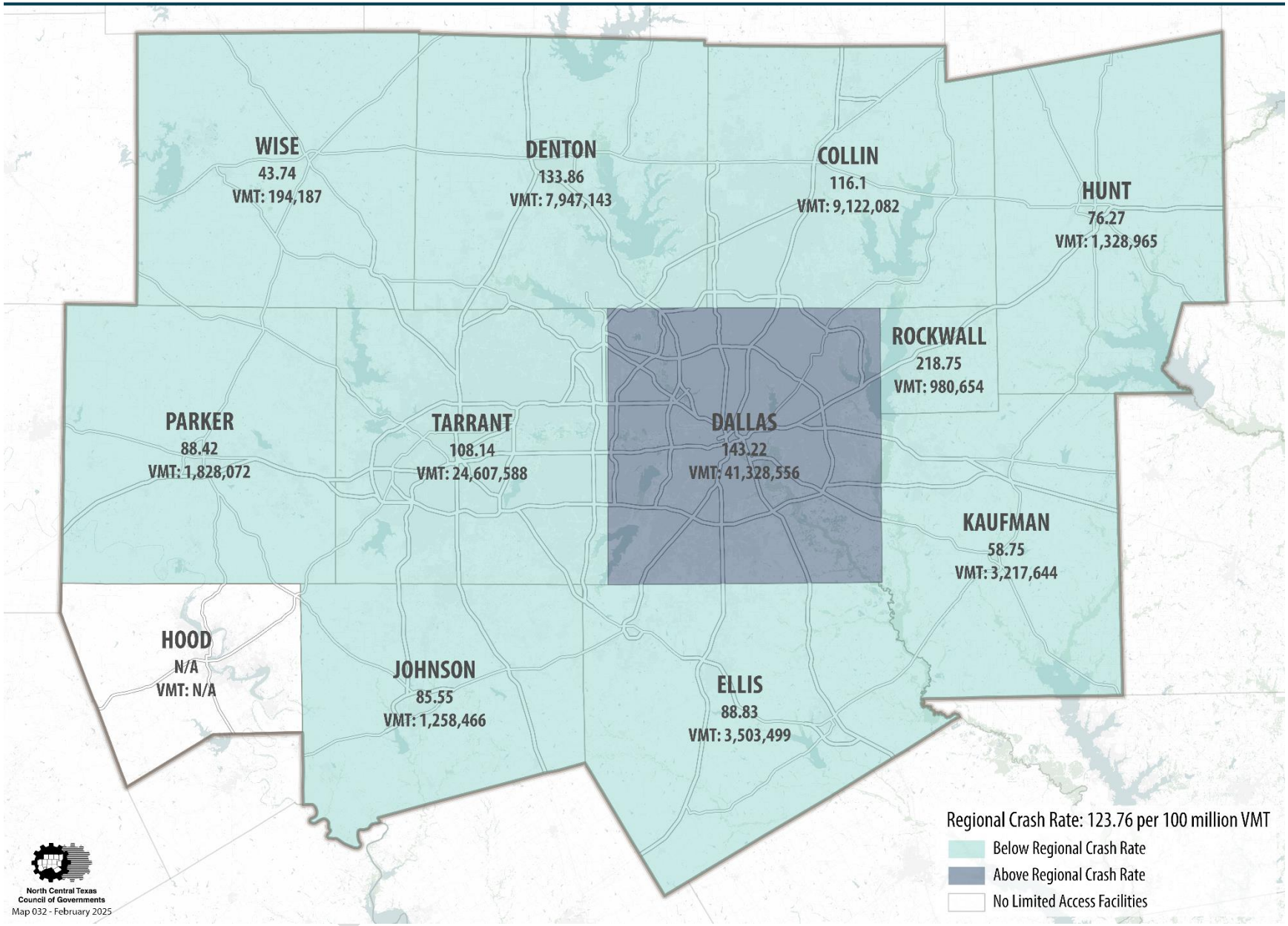
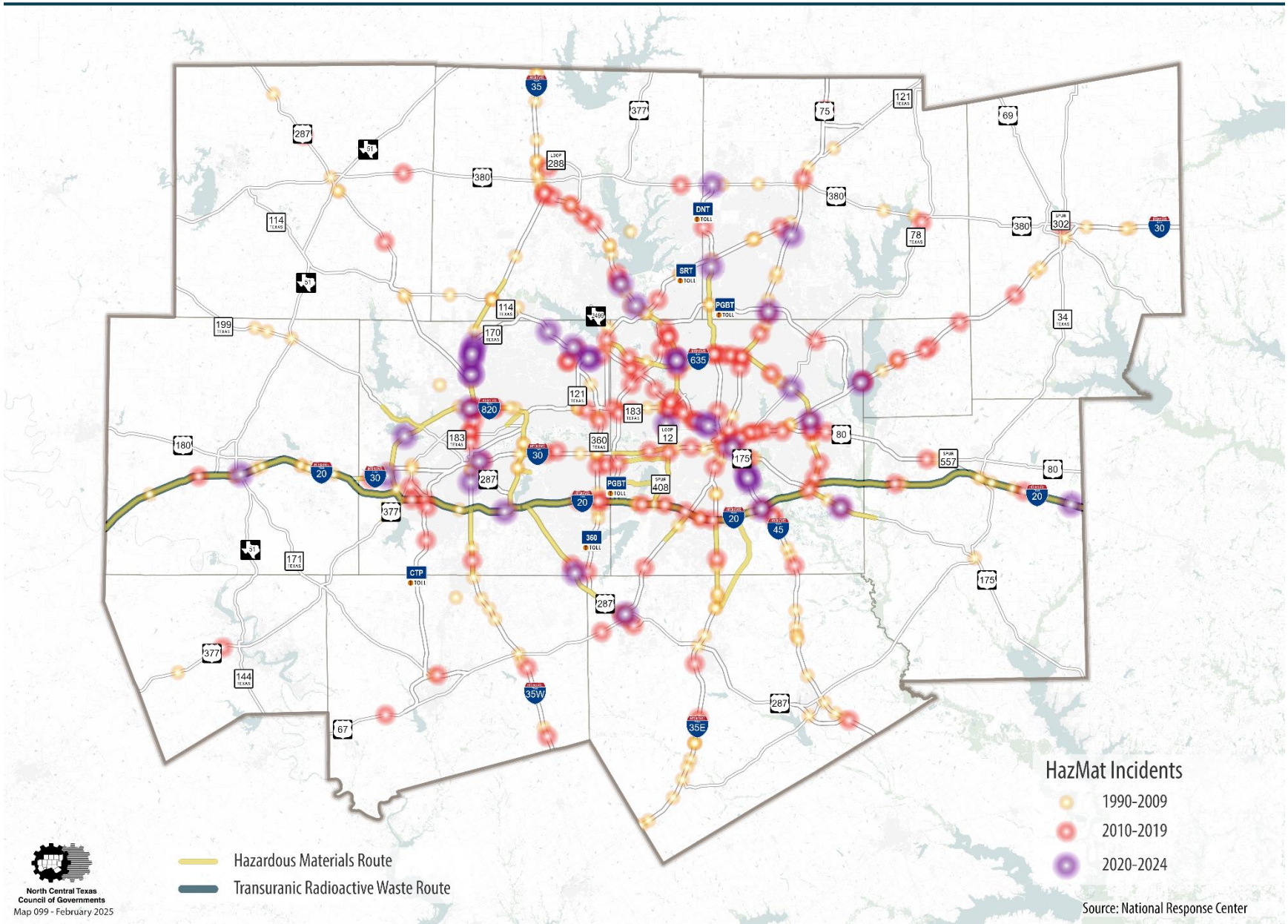
Limited Access Roadway Crash Rates by County

MOBILITY 2050

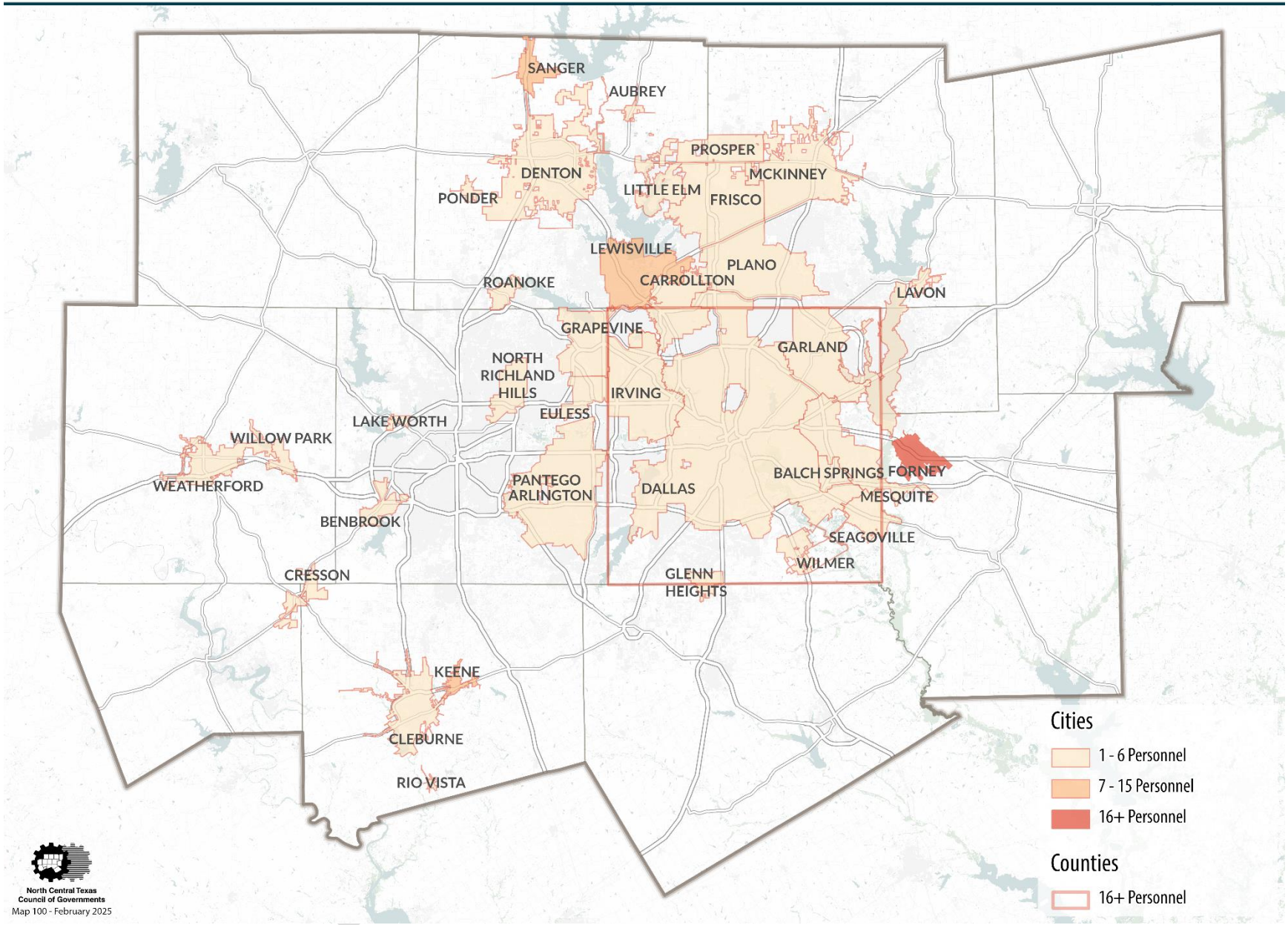


Hazardous Materials Incidents



Freeway Incident Management Attendance - Fire

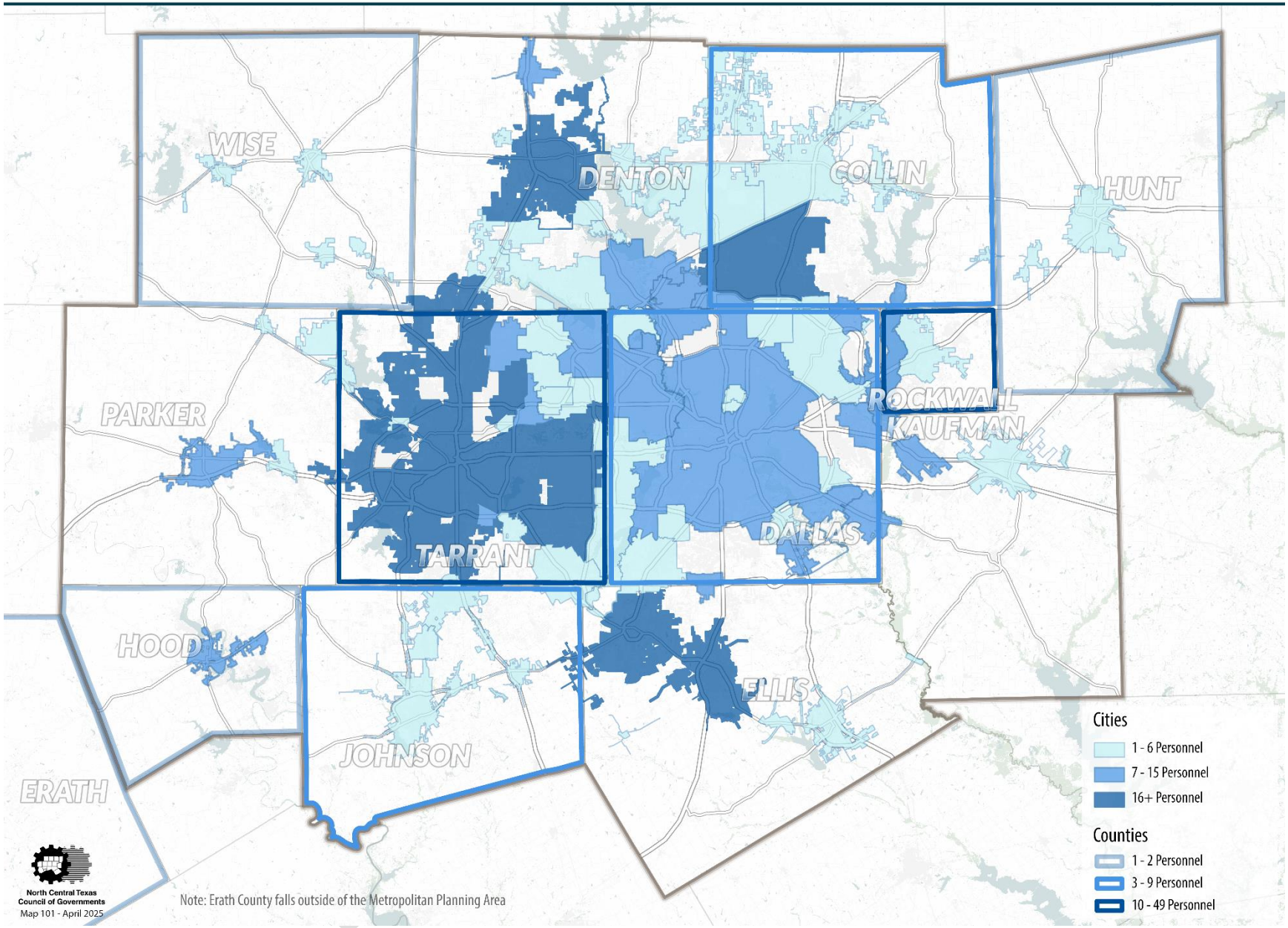
MOBILITY 2050



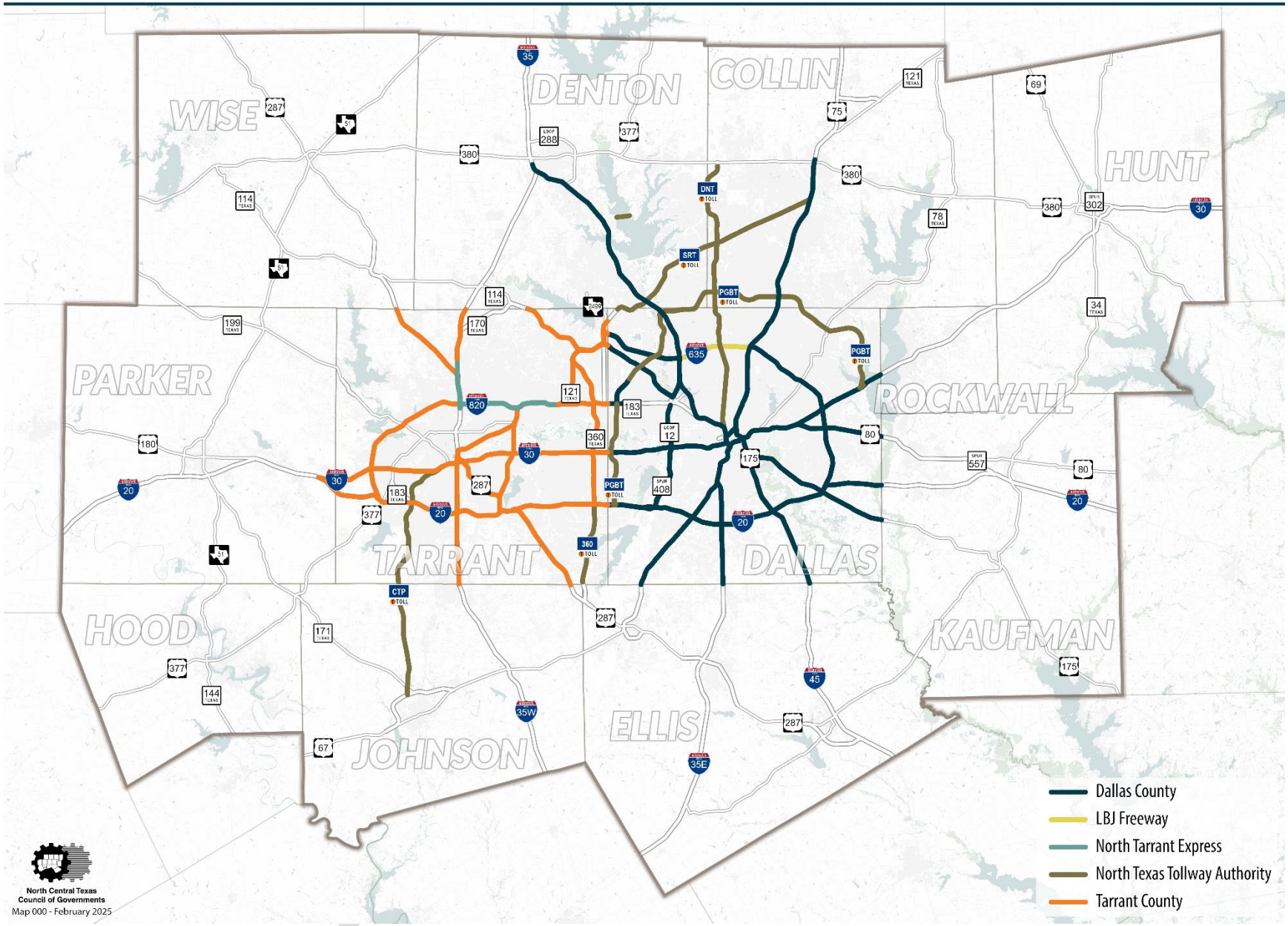
North Central Texas Council of Governments
Map 100 - February 2025

Freeway Incident Management Attendance - Police

MOBILITY 2050

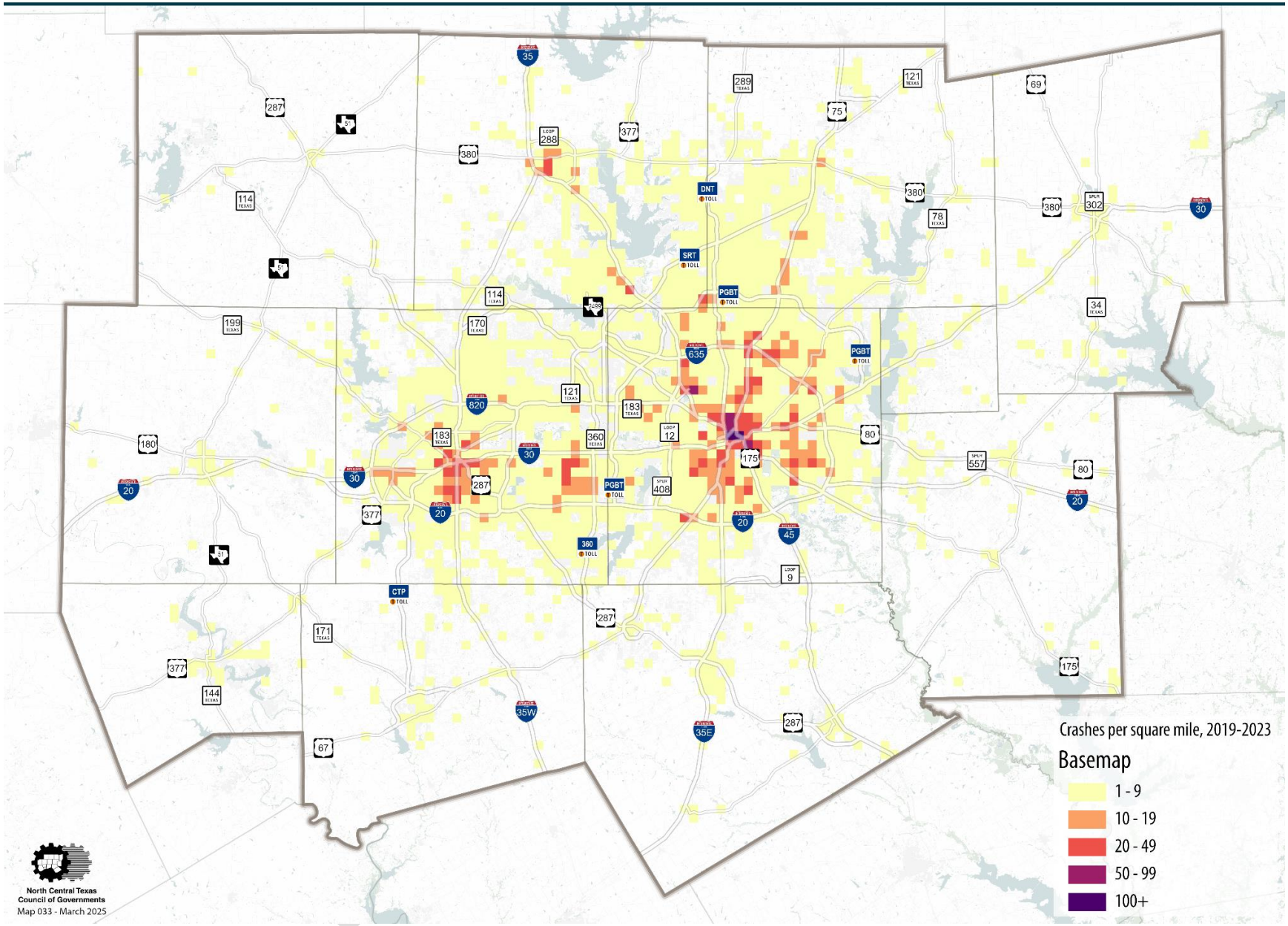


Mobility Assistance Patrol



Bicycle and Pedestrian Crash Density (2019-2023)

MOBILITY 2050



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D-4. TRANSPORTATION SYSTEM SECURITY

POLICIES

MTP Reference #	Transportation System Security
TSSC3-001	Support integration of traffic management and emergency management centers through the sharing of data and video.
TSSC3-002	Transportation System Security and Resiliency should be considered, and mitigation strategies put in place, during planning, engineering, construction, and operation stages of corridor implementation for roadway and transit operations, with emphasis on identified critical infrastructure or key resources affected by human-made or natural disasters.
TSSC3-003	Identify regional transportation components of key resources and critical infrastructure and develop protective methodologies to reduce risk to assets from damage due to natural or human-implemented attacks.

PROGRAMS

Transportation System Security Improvements, Expansions, Management, and Operations	
Reference	TSSC2-001
Background	Real-time emergency management support and coordination for incident management, disaster response and evacuation, security monitoring, and other security and public safety-oriented Intelligent Transportation Systems applications.
Related Goals	Ensure adequate maintenance and enhance the safety and reliability of the existing transportation system.
Related Policies	TSSC3-002
Implementation	Assist in developing a regional agreement and educational program on security policies and emergency response. Assist in the planning and programming of transportation infrastructure preservation. Influence projects and planning functions (including Intelligent Transportation Systems) that can enhance or provide benefit to transportation security efforts and those responsible for planning and responding to emergencies. Become a central repository/mirror for regional geo-data that can be used for planning, training, and response and relief efforts of security and emergency stakeholders.
Performance Dimensions	The performance of this program will be evaluated based on security monitoring of transportation critical infrastructure/key resources and the ability for multiagency communication during emergencies, incidents, disasters, and evacuations.
Cost Estimate	Approximately $127.1 million

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Transportation Security Education and Training	
Reference	TSSC2-002
Background	The Transportation Department is working closely with the North Central Texas Council of Governments' Emergency Preparedness Department and other agencies in the region to establish procedures for using transportation resources in response and recovery efforts during an incident, including, but not limited to, transportation for evacuees. Transportation support entails utilizing and/or providing land, air, rail, or other resources for emergency response or assistance operations, as well as coordinating resources to facilitate an effective, efficient, and appropriate response/support. The purpose of this project is to coordinate and organize transportation resources for local and county agencies in preparing for, responding to, and recovering from incidents that impact the citizens of the region.
Related Goals	Ensure adequate maintenance and enhance the safety and reliability of the existing transportation system.
Related Policies	TSSC3-001
Implementation	• Assist in developing comprehensive and cost-effective solutions to critical security issues facing the transportation systems of the region. • Assist in preparing transportation professionals for research and professional leadership roles in support of securing our region's transportation systems.
Performance Dimensions	The performance of this program will be evaluated based on notification to ensure: • Multiagency and public awareness of evacuation status. • Consistency in local, state, and federal requests for program funding, training, and exercises for transportation security. • Support and dissemination of disaster information to travelers. • Deployment of comprehensive and cost-effective solutions to critical security issues facing the transportation systems of the region. • Train transportation professionals for research and professional leadership roles in support of securing our region's transportation systems.
Cost Estimate	Approximately $64.1 million

Regional Response Plan Development	
Reference	TSSC2-003
Background	Development, coordination, and support for regional response, evacuation, and emergency distribution planning.
Related Goals	Ensure adequate maintenance and enhance the safety and reliability of the existing transportation system.
Related Policies	TSSC3-001
Implementation	• Assist in transportation activities and resources during the response phase immediately following an emergency or disaster. • Assist in facilitating damage assessments to establish priorities and determine needs of available transportation resources. • Assist in prioritization and/or allocation of all government transportation resources.
Performance Dimensions	The performance of this program will be evaluated based on development of plans and other measures to expedite localized evacuation and review of plans and procedures to promote and assess readiness in the transportation area.
Cost Estimate	Approximately $64.1 million

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D-5. CONNECTED/AUTOMATED VEHICLES AND TECHNOLOGIES

POLICIES

MTP Reference #	Transportation Technology and Innovation
TT3-001	The region will develop and implement data sharing best practices that are project- and outcome-focused, serve the public interest, and comply with privacy and cybersecurity requirements, without infringing upon private sector proprietary information requirements.
TT3-002	The region will support automated vehicle and related transportation technology deployments that advance the goals of Mobility 2050 by fostering public-private partnerships among local transportation authorities, technology developers, and commercial/industrial hubs.
TT3-003	The region will support consistent and high-quality maintenance and operations of its transportation system, including utilization of new technologies which offer a cost-efficient method of linking asset management to data collection.
TT3-004	The region will pursue its goal of becoming a "Region of Choice" by exploring emerging mobility technologies, which offer new modes of transportation and those which enhance existing modes of transportation.
TT3-005	New transportation technologies must be deployed in a manner consistent with Mobility 2050 goals of providing the public with a transportation system that is equitable, protects the safety of all users, offers the public more travel options, is well maintained and operated, is environmentally responsible, and prepares the region for innovations in transportation and mobility infrastructure that will accelerate its future economic development.
TT3-006	The region will prepare for future innovations in both transportation and infrastructure by developing analytical tools capable of assessing traditional transportation projects against alternatives such as new mobility technologies, connected vehicle-to-everything (C-V2X) innovations, more effective use of existing assets, and demand management tools.
TT3-007	The region will work with educational institutions at all levels to develop workforce training solutions to prepare area residents for job opportunities in the emerging transportation technologies sector, to pursue funding opportunities, and to support deployments of automated vehicles and other emerging transportation technologies.
TT3-008	The region will prioritize the safety of all transportation system users in and through the deployment of emerging modes of transportation such as e-scooters, e-bikes, automated vehicles, and delivery robots through the use of strategic technology, design, and policy solutions.

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PROGRAMS

AV2.0	
Reference	TT2-001
Background	The Transportation Technology Innovation Program follows in the footsteps of previous work and shares the DNA of preparing for the future of transportation by improving conditions for drivers and transit users today. The initial period of the Transportation Technology Innovation Program's work is split into AV1.0 (Automated Vehicles 1.0) and AV2.0.
Related Goals	• Improve the availability of transportation options for people and goods. • Support travel efficiency measures and system enhancements targeted at congestion reduction and management. • Develop cost-effective projects and programs aimed at reducing the costs associated with constructing, operating, and maintaining the regional transportation system.
Related Policies	TT3-001; TT3-002; TT3-005
Implementation	Automated vehicle deployments and infrastructure enhancements.
Performance Dimensions	The performance of this program will be evaluated based on projects implemented that meet the related goals.
Cost Estimate	Approximately $40.6 million

Freight Optimization	
Reference	TT2-002
Background	The freight sector has emerged as a key automated vehicles sector and North Central Texas is a center of development. A number of firms that have automated long-distance freight transportation have operations hubs in the region.
Related Goals	• Encourage livable communities which support sustainability and economic vitality. • Ensure adequate maintenance and enhance the safety and reliability of the existing transportation system. • Develop cost-effective projects and programs aimed at reducing the costs associated with constructing, operating, and maintaining the regional transportation system.
Related Policies	TT3-001; TT3-002; TT3-003
Implementation	Pilot initiative to use emerging Intelligent Transportation System technology to detect and prioritize truck movements at signalized intersections near freight hubs. Develop more responsive methods of coordinating truck and vehicle movements near freight centers.
Performance Dimensions	The performance of this program will be evaluated based on improvements to freight traffic flow along signalized arterials near freight hubs.
Cost Estimate	Approximately $5.4 million

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University Partnerships to Promote Emerging Technologies	
Reference	TT2-003
Background	The North Texas Center for Mobility Technologies brings coordinated expertise of Dallas-Fort Worth research universities to tackle mobility technology challenges across Texas, nationally, and globally.
Related Goals	• Improve the availability of transportation options for people and goods. • Encourage livable communities which support sustainability and economic vitality. • Develop cost-effective projects and programs aimed at reducing the costs associated with constructing, operating, and maintaining the regional transportation system.
Related Policies	TT3-003; TT3-005
Implementation	Utilize multi-university partnerships and leverage match funding to further the development of regional mobility solutions.
Performance Dimensions	The performance of this program will be evaluated based on the number of universities participating in the program.
Cost Estimate	Approximately $2.7 million

CV Data for Operations	
Reference	TT2-004
Background	An entire ecosystem of connected vehicle data technology is springing up as automated vehicles continue to develop. These data platforms extend far beyond automated vehicle applications, however, to include open-source mapping, incident reporting, and vehicle/driving behavior. Asset management technologies can now use artificial intelligence and video-based platforms to monitor, catalogue, and assess pavement conditions and roadway furniture.
Related Goals	• Improve the availability of transportation options for people and goods. • Support travel efficiency measures and system enhancements targeted at congestion reduction and management. • Develop cost-effective projects and programs aimed at reducing the costs associated with constructing, operating, and maintaining the regional transportation system.
Related Policies	TT3-001; TT3-003
Implementation	Get infrastructure data (e.g., road closures, crashes) to automated vehicles/connected vehicles to improve operations.
Performance Dimensions	The performance of this program will be evaluated based on the number of agencies providing data to the regional data exchange regarding work zones.
Cost Estimate	Approximately $37.9 million

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Workforce Development	
Reference	TT2-005
Background	Vital to the successful implementation and safe deployment of new technologies is a well-prepared workforce. This ranges from top-tier research capabilities to high-skill mechanical and service trades which will be needed to support innovation and growth.
Related Goals	• Ensure all communities are provided access to the regional transportation system and planning process. • Encourage livable communities which support sustainability and economic vitality.
Related Policies	TT3-007
Implementation	Invest in next generation transportation workforce development to build a Dallas-Fort Worth tech talent base in transportation. Expand broadband access/usage across Dallas-Fort Worth—necessary to make connected vehicle-to-everything available to all and promote telecommuting and other virtual connections—and build a next-gen transportation workforce via "agile curricula." Work with educational institutions at all levels to develop workforce training solutions to prepare area residents for job opportunities in the emerging transportation technologies sector, to pursue funding opportunities, and to support deployments of automated vehicles and other emerging transportation technologies.
Performance Dimensions	The performance of this program will be evaluated based on availability and affordability of broadband access across the region.
Cost Estimate	Approximately $32.4 million

Emerging Transportation Technology Deployments	
Reference	TT2-006
Background	Continuation of AV2.2/2.3 but encompassing a wider range of vehicle types.
Related Goals	• Improve the availability of transportation options for people and goods. • Support travel efficiency measures and system enhancements targeted at congestion reduction and management. • Develop cost-effective projects and programs aimed at reducing the costs associated with constructing, operating, and maintaining the regional transportation system.
Related Policies	TT3-001; TT3-002; TT3-003; TT3-005; TT3-006
Implementation	Deploy pilot projects for a range of emerging technologies to demonstrate their use, effectiveness, and potential.
Performance Dimensions	The performance of this program will be evaluated based on projects implemented that meet the related goals.
Cost Estimate	Approximately $108.2 million

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Innovation Grants for Local Partners	
Reference	TT2-007
Background	The Transportation Technology Innovation Program follows in the footsteps of previous work and shares the DNA of preparing for the future of transportation by improving conditions for drivers and transit users today.
Related Goals	• Improve the availability of transportation options for people and goods. • Support travel efficiency measures and system enhancements targeted at congestion reduction and management. • Ensure all communities are provided access to the regional transportation system and planning process. • Encourage livable communities which support sustainability and economic vitality. • Develop cost-effective projects and programs aimed at reducing the costs associated with constructing, operating, and maintaining the regional transportation system.
Related Policies	TT3-001; TT3-002; TT3-003; TT3-004; TT3-008
Implementation	Competitive grant program for transportation-related innovative projects.
Performance Dimensions	The performance of this program will be evaluated based on projects implemented that meet the related goals.
Cost Estimate	Approximately $86.5 million

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D-6. SUSTAINABLE DEVELOPMENT

POLICIES

MTP Reference #	Sustainable Development
SD3-001	Support mixed-use and infill developments that utilize system capacity, reduce vehicle miles traveled, and improve air quality through improved rail mobility and access management.
SD3-002	Promote transit-oriented development for all station types that improves the jobs/housing balance, "last mile" connections, and appropriate land-use density to encourage diverse transportation mode choices.
SD3-003	Plan for land use-transportation connections, including a variety of land uses from natural areas to the urban core connected by multimodal transportation options through strategies such as smart zoning codes, green infrastructure, affordable housing, preservation of agricultural land, healthy communities, economic development tools, parking, innovative financing, deck parks, etc.
SD3-004	Support independent school districts and local governments through various programs and projects as supported by the Regional Transportation Council policy supporting school districts.
SD3-005	Develop and encourage strategies to enhance street connectivity through the use of connected street grids in new development or redevelopment projects, subdivisions, and/or local roadway construction.
SD3-006	Have parking management strategies programmed or in development code within areas of higher density or trip generation. Strategies would include smart parking management policies to reduce excessive traffic circulation and to set standards for supply ratios that might encourage alternative modes of transportation such as transit, shared parking, on-street parking provisions, bicycle parking, parking management technologies, parking districts, etc.

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PROGRAMS

Land Use-Transportation Connections Program	
Reference	SD2-001
Background	As land uses impose demands on the transportation system, both systems need to be planned in conjunction with each other. Land uses, when sustainably integrated, have dynamic effects on trip generation and air quality because the clustering of land uses in close proximity decreases the need for an automobile to access the uses. This program supports regional coordination for the integration of land-use practices and transportation investments.
Related Goals	• Encourage livable communities which support sustainability and economic vitality. • In an effort to maximize limited resources, infrastructure in transportation will be prioritized to support sustainable land uses (offering more than one land-use choice or within a connected two-mile proximity to others) within the urban core and to support similar nodes of development investment in more rural areas. • Preserve and enhance the natural environment, improve air quality, and promote active lifestyles. • Improve the availability of transportation options for people and goods.
Related Policies	SD3-001; SD3-002; SD3-003
Implementation	Promote smart zoning ordinances and building codes that allow varying densities, layouts, and heights. Create jobs/housing balance through promoting developments and creating strategic transportation connections. Implement green infrastructure components into transportation projects to improve air quality, mitigate urban heat effects, and reduce or mitigate stormwater impacts of surface transportation. Promote sustainable parking management strategies and innovative technologies in parking. Develop workforce, mixed-income, and affordable housing options to diverse demographic groups. Preserve agricultural land in rural areas to allow for compact development in infill areas. Utilize economic development tools and provide financial incentives to promote sustainable developments and travel and tourism. Promote the use of Traditional Neighborhood Development (integrated, horizontal mixed-use developments) as a template for compact, walkable neighborhood design. Plan for healthy communities to promote active lifestyles, improve access to health food stores, and improve air quality. Improve jobs/housing balance for transportation investment. Promote the use of deck parks to connect communities, reduce barriers, provide recreational opportunities, and support active lifestyles.
Performance Dimensions	• Number of cities updating or adopting form-based codes or traditional neighborhood development codes. • Number of education and outreach events conducted on the above items. • Number of multiagency coordination events conducted to promote land use-transportation connection.
Cost Estimate	Approximately $278.6 million

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Community Schools and Transportation Program	
Reference	SD2-002
Background	The Regional Transportation Council approved a school policy in 2013 to promote coordination in the region between municipalities and independent school districts located within the Metropolitan Planning Area. By addressing current school siting trends and promoting safe routes to walk and bicycle to school, this program takes a holistic approach to addressing traffic congestion, air pollution, and safety around schools across the region.
Related Goals	• Encourage livable communities which support sustainability and economic vitality. • Preserve and enhance the natural environment, improve air quality, and promote active lifestyles. • Improve the availability of transportation options for people and goods.
Related Policies	SD3-004
Implementation	Promote interagency coordination through a Regional School Coordination Task Force, which will address issues related to school siting and active travel to school. Encourage the use of sustainable school siting and facility planning practices so that more students are able to walk or bicycle to school. Continue to encourage and fund infrastructure and non-infrastructure projects and programs that encourage more children to safely walk and bicycle to school. Create recommendations for bicycle and pedestrian safety near schools. Promote bicycle and pedestrian safety education in schools through the development and distribution of education materials. Assess transportation options and accessibility around schools through evaluations of transportation connections between housing and schools, and traffic congestion and travel flow patterns around schools. Encourage coordination between transit agencies and school districts in the discussion of bus schedules and routes. Provide technical assistance with local Safe Routes to School type initiatives.
Performance Dimensions	• Number of coordination meetings conducted to promote the independent school district and municipality coordination. • Number of educational and training events conducted. • Number of planning assistance projects completed to assist independent school districts and local governments.
Cost Estimate	Approximately $10.9 million

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Transit-Oriented Development Program	
Reference	SD2-003
Background	Transit-oriented development is a style of planning and development that encourages pedestrian activity with a mix of higher density employment, housing, and commercial land uses within a half-mile walking distance of a passenger rail station. This program will build on the North Central Texas Council of Governments' investment in transit station areas.
Related Goals	• Encourage livable communities which support sustainability and economic vitality. • Preserve and enhance the natural environment, improve air quality, and promote active lifestyles. • Improve the availability of transportation options for people and goods.
Related Policies	SD3-001; SD3-002; SD3-003
Implementation	Provide technical assistance and research best practices to plan and implement transit-oriented development, thereby optimizing investments in transit systems and reducing the need for expanding other facilities. Foster regional coordination and data sharing through working groups and training events to encourage transit-oriented development. Lead and conduct regional transit-oriented development data collection efforts to create a robust and reliable source of information that improves decision-making and facilitates transit-oriented development. Improve jobs/housing balance with transit access by increasing density of development in station areas. Support the location of higher density, mixed income, and affordable housing options around transit stations, which leads to increased ridership. Support parking management for transit-oriented development through research, education, training, and application. Collect, inventory, and update data on development, density, and demographics for each station area. Develop data-based transit-oriented development performance measures and station area typologies in line with a transit-oriented development strategy document. Research landbanking programs and best practices for transit-oriented developments.
Performance Dimensions	• Number of updates to the inventory of all development around one-half mile of a transit station. • Number of transit-oriented development planning studies completed. • Number of outreach and training events conducted.
Cost Estimate	Approximately $16.3 million

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Sustainable Development Funding Program	
Reference	SD2-004
Background	The Sustainable Development Funding Program is one of the best examples of regional programs supporting livability principles in the region, state, and country. The North Central Texas Council of Governments held Sustainable Development calls for projects in 2001, 2006, 2010, and 2018. A total of 65 infrastructure projects, 20 planning projects, and 2 landbanking projects were funded through the program.
Related Goals	• Encourage livable communities which support sustainability and economic vitality. • Preserve and enhance the natural environment, improve air quality, and promote active lifestyles. • Improve the availability of transportation options for people and goods.
Related Policies	SD3-001; SD3-002; SD3-003
Implementation	Issue additional calls for projects and select projects within Sustainable Development Areas of Interest by responding to local initiatives for town centers, mixed-use growth centers, transit-oriented developments, infill/brownfield redevelopments, and pedestrian-oriented developments. Assist in the implementation of the projects. Analyze regional and community impacts of projects.
Performance Dimensions	• Area (square foot) and number of residential and commercial private sector development within mixed/integrated land-use projects supported by the completed project and funded by the North Central Texas Council of Governments through the program. • Number of infrastructure and planning projects funded and completed through the program. • Number of infrastructure and planning projects funded and completed within one-half mile from a transit station through the program. • Increase the percentage of non-auto-oriented developments in the region. • Increase the number of mixed-use developments in Sustainable Development Areas of Interest.
Cost Estimate	Approximately $645.0 million

Parking Management Program	
Reference	SD2-005
Background	The Regional Parking Management Tools and Strategies administers and oversees the implementation and development of data driven parking management tools, plans, and strategies, and provides technical assistance to support management and programing of efficient parking at various locations within the Dallas-Fort Worth region.
Related Goals	• Reduce single-occupancy vehicle commutes (thereby reducing traffic, congestion, and pollution). • Encourage the use of alternative transportation modes. • Enhance parking options and service quality. • Accommodate new curb uses and respond to new curb demands .
Related Policies	SD3-006
Implementation	Offer technical support and investigate leading practices to plan and implement parking management tools, plans, and strategies. Provide technical assistance to support the effective management and programing of parking at various locations throughout the Dallas-Fort Worth region. Lead and conduct regional parking data and analysis efforts to create a robust and reliable source of information to increase local knowledge of observed parking demand and insights for efficient management and development codes. Evaluate best practices, including parking management technology tools. Provide parking management tools, practice, and technology guidance to local stakeholders. Conduct parking management and land use plans and studies to create best practices and planning tools that showcase innovative connection between land uses, transportation, and parking systems.
Performance Dimensions	• Number of parking management and land use plans and studies. • Number of outreach and training events. • Number of updates to the reginal parking database.
Cost Estimate	Approximately $20 million

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SUSTAINABLE DEVELOPMENT FUNDING PROGRAM PROJECTS

The Sustainable Development Funding Program was created by the Regional Transportation Council (RTC) in 2001. An interactive map showing the locations of projects funded through the Sustainable Development Funding Program can be found at www.nctcog.org/sdcfp.

The following tables summarize the funding programmed for the Sustainable Development Funding Program call years that contain currently active projects, along with the currently active projects and their funding.

Sustainable Development Funding Program – Summary of Funds

Program Year	Sustainable Development Project Type	Program Funding*	Funding Source
2011	Infrastructure and Planning	$54 Million	RTC/Congestion Mitigation & Air Quality/Surface Transportation Block Grant/RTC Local
2018	Infrastructure	$52.4 Million	Congestion Mitigation & Air Quality/Surface Transportation Block Grant

* Net funding includes matching funds from local governments

Sustainable Development Funding Program – Summary of Active Projects

Year	Project	Program Funding*	Funding Source
2006	Central Arlington Mixed-Use District	$1.25 Million	RTC Local
2008	Irving Heritage District	$1.25 Million	RTC Local
2021	North Richland Hills Transit-Oriented Development	$2 Million	Regional Toll Revenue
2022	White Settlement Naval Air Station Base	$2.7 Million	RTC Local

* Net funding includes matching funds from local governments

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Metropolitan Transportation Plan Reference SD2-004

2005-2006 Sustainable Development Call for Projects: Funded Infrastructure Projects

Project Name	Project Sponsor	Project Description
Central Arlington Mixed-Use District	Arlington	Pedestrian amenities, bike trail, landscaping
Town Center	Arlington	Pedestrian amenities
Cityville at Carlisle	Dallas	Pedestrian amenities, landscaping, street construction
Dallas Design District TIF – Walking and Bicycling Improvements	Dallas	Pedestrian amenities, landscaping
Fiji/Compton Sustainable Development Project	Dallas	Street construction
Mockingbird Plaza and Midtown/Central/University	Dallas	Pedestrian amenities, bicycle trail, landscaping, rail transit, street construction
Woodall Rodgers Cross Street Sidewalk Reconstruction	Dallas	Pedestrian amenities
Lake Highlands Town Center Transit-Oriented Development Project	Dallas	Pedestrian amenities, landscaping, intersection improvements
Center Street Townhomes and Mixed-Use Planned Development	Duncanville	Pedestrian amenities, landscaping, street construction
Museum Place Development	Fort Worth	Pedestrian amenities, landscaping, street construction
Trinity Bluff Streetscape	Fort Worth	Pedestrian amenities
West Berry Streetscape – Grandmarc Development	Fort Worth	Pedestrian amenities, traffic signals, street construction
West Rosedale Improvements – Magnolia Green	Fort Worth	Pedestrian amenities
Frisco Sustainable Development Project	Frisco	Street construction
Transit-Oriented Connectivity Project	Garland	Pedestrian amenities, traffic signal improvements, street construction
Fairfield on Main Street Grapevine – Transit-Oriented Development	Grapevine	Pedestrian amenities, landscaping, intersection improvements
Las Colinas Urban Center Light Rail Station Area	Irving	Rail transit, landscaping
Centennial Park	Richardson	Pedestrian amenities, bike trail, rail transit
Eastside	Richardson	Street construction
Downtown Mixed-Use Development	Rowlett	Pedestrian amenities, bike trail, street construction

Metropolitan Transportation Plan Reference SD2-004

2005-2006 Sustainable Development Call for Projects: Funded Landbanking Projects

Project Name	Project Sponsor	Project Description
Central Arlington Mixed-Use District	Arlington	Landbanking for a future sustainable development project
Heritage District Landbanking	Irving	Landbanking for a future sustainable development project

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Metropolitan Transportation Plan Reference SD2-004

2009-2010 Sustainable Development Call for Projects: Funded Eastern Sub-Region Infrastructure Projects

Project Name	Project Sponsor	Project Description
Vitruvian Park Trail Infrastructure Project	Addison	Pedestrian amenities
Transit-Oriented Development Catalyst Infrastructure Project	Carrollton	Pedestrian amenities, landscaping, bike connection, rail transit, right-of-way acquisition, and street improvements on Vandergriff Drive from Broadway to Myers Street
Zang Triangle	Dallas	Pedestrian amenities, landscaping, bus connection, right-of-way acquisition, and street improvements on Zang Boulevard, Plowman Avenue, and Oakenwald Street
Omni/DART Convention Center Pedestrian Improvements Project	Dallas	Pedestrian amenities
Continental Mixed-Use Development	Dallas	Pedestrian amenities, landscaping, intersection improvements
Collective Mixed-Use Development	Dallas	Pedestrian amenities, landscaping, intersection improvements, bus connection, traffic signalization, and street improvements to add a left-hand turn lane in westbound Fort Worth Avenue at Walter Road
Edison/Hi Line Stemmons/Rail Transit Underpass Connection	Dallas	Pedestrian amenities, landscaping, bike connection
Routh Street Underpass – Gateway to the Arts District, Connecting Uptown and Downtown	Dallas	Pedestrian amenities, bike connection
Atmos Lofts Mixed-Use Development	Dallas	Pedestrian amenities, landscaping, bike connection
Lake Highlands Transit-Oriented Development Multimodal Connectivity Project	Dallas and Dallas County	Intersection improvements, bike connection
North Main Street – Phase I	Duncanville	Pedestrian amenities, landscaping, intersection improvements, traffic signalization, and street improvements, including slip lane and angled parking along North Main Street from Center Street to Davis Street, and the elimination of one northbound lane on Main Street within these limits
Station Area Sidewalks	Farmers Branch	Pedestrian amenities, landscaping
Flower Mound Downtown	Flower Mound	Pedestrian amenities, landscaping, intersection improvements, bike connection, traffic signalization, right-of-way acquisition, and street improvements to add two lanes on Windsor Drive to connect to FM 2499
Old Town Transit-Oriented Development	Lewisville	Pedestrian amenities, landscaping, intersection improvements, bike connection, bus transit connection, traffic signalization, and street improvements on Main Street and Mill Street to reduce from two lanes to one lane in each direction to accommodate pedestrian improvements
Historic Flour Mill Catalyst Transit-Oriented Development Project	McKinney	Pedestrian amenities, intersection improvements, bike connection, right-of-way acquisition, and street improvements on Louisiana Street from SH 5 to Throckmorton Street to retrofit two-way travel lanes and parking lanes
Thomasson Square	Mesquite	Pedestrian amenities, landscaping, intersection improvements, traffic signalization, and street improvements, including reduction of number of lanes from six to four on Gus Thomasson Road within the project area to accommodate landscaped medians, bike lane, and parallel parking

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Metropolitan Transportation Plan Reference SD2-004

2017 Sustainable Development Call for Projects: Funded Turnback Program, Context Sensitive, Transit-Oriented Development (TOD) Infrastructure Projects

Project Name	Project Sponsor	Project Description
Main Street Complete Street	Crowley	Reconstruct from 3 to 2 lanes, add bicycle lanes, new sidewalks, add on-street parking, and construct 2 roundabouts
Downtown Street Improvements Phase 1	Weatherford	Reconstruct 2/4-lane roadway to 4-lane roadway, including a roundabout at the intersection of US 180, new bicycle lanes, new sidewalks, and intersection improvements at FM 51
Irving Boulevard	Irving	Reconstruct from 3 to 2 lanes with a bicycle lane, sidewalk improvements, and on-street parking from O'Connor to Britain
Ennis Avenue	Ennis	Construct grade separation at the intersection of BU 287/Ennis Avenue and the Union Pacific Railroad line to facilitate a Sustainable Development project on Ennis Avenue
College Street	Lewisville	Reconstruct from 2 to 2 lanes, add bicycle lanes, widen/expand sidewalks, and add on-street parking
Old Town TOD Station	DCTA	Construct Denton County Transportation Authority intermodal transit center, bus lanes, and park-and-ride to enhance and expand transit service; pedestrian improvements

SUSTAINABLE DEVELOPMENT GUIDING PRINCIPLES AND DEFINITIONS

Livability Principles

The coordination and integration of transportation, housing, and environmental policies has renewed the attention of federal, state, and local governments. In 2009, the US Department of Housing and Urban Development, the US Department of Transportation, and the Environmental Protection Agency partnered to form the Interagency Partnership for Sustainable Communities. The partnership has and will continue to offer federal housing; transportation; and environmental policy, programs, and funding for various programs that will advance the following six Livability Principles:

Provide more Transportation Choices: Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.

Promote Equitable, Affordable Housing: Expand location and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.

Enhance Economic Competitiveness: Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services, and other basic needs by workers, as well as expand business access to markets.

Support Existing Communities: Target federal funding toward existing communities through such strategies as transit-oriented, mixed-use development and land recycling to increase community revitalization,

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improve the efficiency of public works investments, and safeguard rural landscapes.

Coordinate Policies and Leverage Investment: Align federal policies and funding to remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.

Value Communities and Neighborhoods: Enhance the unique characteristics of all communities by investing in healthy, safe, and walkable neighborhoods—rural, urban, or suburban.

SUSTAINABLE DEVELOPMENT AND TRANSPORTATION

Sustainable Development can be defined as development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. Transportation improvements connecting to sustainable developments (higher density, compact, mixed uses) aim to increase the viability of walking, bicycling, and transit as alternatives to the automobile. Conventional mobility options, such as single-occupant and auto-oriented transportation, can lead to adverse economic effects such as congestion, longer commutes, higher accident rates, increased pollution, depletion of natural resources, and health problems.

Affordability of Transportation and Sustainable Development

Auto-oriented transportation limits the mobility choices of lower income people and those with disabilities, and it impacts social equity. Alternatively, sustainable transportation strategies, such as multimodal transportation systems, enable travelers to choose from various modes, location, and pricing options, particularly those that use resources efficiently and are affordable, healthy, and accommodate non-drivers. Active transportation and transit services provide affordable options so households can spend a lower percentage of household income on transportation costs. Based on the 2015-2019 American Community Survey, the Center for Neighborhood Technology estimates the average amount spent on housing and transportation costs in the Metropolitan Planning Area is 49 percent of household income.[1]

MIXED-USE DEVELOPMENT

Mixed-use development vertically combines commercial (office and retail) and residential uses in the same building, or it features a well-connected street and pedestrian network that links commercial and residential developments within a quarter mile of each other. A mixed-use development should meet all of the following criteria:

- A mix of residential and office and/or retail uses.
- The mix of uses can be vertical or horizontal.
- If the development is horizontal mixed-use, the residential use should be within a quarter mile of the commercial use.
- Horizontal mixed-use should include a mix of land uses, a walkable design/form, and, if possible, transit options within a

[1] Center for Neighborhood Technology. *Housing and Transportation (H+T) Affordability Index*. Based on 2015–2019 American Community Survey data. https://htaindex.cnt.org.

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compact neighborhood scale area; it should include a network of well-connected streets and amenities, such as office, retail, and schools, within walking distance of residences.
- Different land uses should have pedestrian linkages.
- It should not develop industrial uses.
- It should provide a significant portion of each use within the mix.

Mixed-use developments should exclude the following types of development:

- Single-family detached development with standalone shopping centers
- Standalone hotel/residential
- Studio/light industrial combination
- Auto-only oriented development
- Parking structures without ground floor retail
- Single-use dominant developments with minimal auxiliary uses

TRANSIT-ORIENTED DEVELOPMENT

As North Central Texas continues to grow, offering a greater choice in places to live, work, and play, transit access becomes increasingly important to maintaining the region's transportation network. The North Central Texas Council of Governments (NCTCOG) has established an implementation program that prioritizes transit-oriented developments by funding planning, infrastructure, and land banking projects around rail transit stations. An interactive map

showing the locations of transit-oriented development (TOD) projects can be found at www.nctcog.org/tod.

The region has seen success in incentivizing development around rail transit stations. Billions of dollars in commercial and residential development have occurred around the Dallas Area Rapid Transit light rail system since its opening in 1996.[2] However, for the 12-county Metropolitan Planning Area, transit has remained low compared to driving commutes. Reaching a higher level of multimodal use requires a continued regional commitment to TOD.

Supporting Strategies

A key strategy for using TOD to create sustainable transportation is creating a greater balance of jobs and housing units that are accessible via transit. Two ways to reach this balance are by improving last-mile connections to stations and by increasing the number of jobs and housing units in the station area so they reach densities that support transit. NCTCOG's TOD Program will support this strategy by providing technical assistance and funding for station-area plans and infrastructure improvements through future Sustainable Development calls for projects.

Regional planning and implementation for TOD requires a source of robust and reliable regional data. NCTCOG will continue to grow and improve its collection of data related to demographics, employment, housing, transit ridership, land values, and more for all future rail station areas in North Central Texas. The data collection program is intended to help cities, transit agencies, and other stakeholders to identify development trends and activities around transit stops, and to better assess future development opportunities around existing transit stations. Assessing the data longitudinally and using goals and

[2] Terry Clower, Michael Bomba, Owen Wilson-Chavez, Matthew Gray, Development Impacts of the Dallas Area Rapid Transit Light Rail System, UNT Center for Economic Development Research, January 2014

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priorities set by regional strategy and policy will facilitate the development of performance measures for station areas.

TODs in the region have thus far been focused on either commuter rail or light rail transit. However, as the outlook for rail transit funding in the region remains constrained, the TOD Program will consider development around other fixed-route rapid transit modes such as people movers and enhanced or rapid bus services. Existing literature on this topic suggests it is harder to incentivize development around bus than around rail; however, the potential for bus TOD exists and funding constraints mean it is an increasingly important topic for the region.[3]

The underlying goal of coordinating transportation and land-use planning is for individuals who live and work near transit to be more likely to choose a non-automobile mode of travel. Biking, walking, and transit are more financially sustainable for society and individuals. However, to save money on transportation by taking transit, individuals must be able to afford housing that allows them to access transit. If TOD is to accomplish the goal of shifting residents and employees to transit use, it should not just develop station areas; it should develop so that it is oriented to the individuals who will actually use and benefit from access to transit. This has a number of benefits, including freeing up disposable income being spent on transportation, increasing transit ridership, and improving community health.[4] The possibility of integrating mixed-income, workforce, or affordable housing into future NCTCOG TOD projects will be supported in the TOD Program.

Parking Management

To realize the full potential of increased housing and commercial development in station areas, the design and supply of parking must be thoughtfully considered. Creating policies and strategies to effectively manage parking in TOD districts is critical to improving the pedestrian environment, reducing development costs, and facilitating individuals' decisions to change modes of travel. Improved data on parking options and utilization in station areas are critical in assessing future parking needs for the region. Supporting parking management for TOD, in partnership with municipalities, is important as many station areas in North Central Texas transition from automobile dependent to transit oriented.

Some recent parking studies have highlighted the need for parking management within the North Central Texas region, including the 2019 NCTCOG TOD report on the Dallas Area Rapid Transit Red and Blue Line. This report found that 13 of the 16 sites studied never peaked above 80 percent parking capacity. This excess parking exceeded 4,500 total spaces, meaning an estimated $80 million in constructed parking value went unused,[5] and the 2023 Deep Ellum Parking Study revealed an over capacity of on-street parking.[6]

[3] US General Accounting Office. Bus Rapid Transit: Projects Improve Transit Service Can Contribute to Economic Development. Report to the Committee on Banking, Housing, and Urban Affairs, US Senate. 2012

[4] Policy Brief: Locating Affordable Housing near Transit: A Strategic Economic Decision. Reconnecting America. 2012

[5] Dallas Area Rapid Transit Red & Plue Line Corridors Transit Oriented Developemt Parking Study. North Central Texas Council of Governments/Nelson Nygaard. 2019.

[6] North Central Texas Council of Governments, Deep Ellum Parking Study, 2023.

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SUSTAINABLE SCHOOLS

The map below shows independent school districts and jurisdictional boundaries. NCTCOG's Metropolitan Planning Area contains 143 independent school districts, 233 cities, and 12 counties with overlapping boundaries. This jurisdictional complexity presents a challenge when planning for sustainable schools. In 2023, school-age children (ages 5 to 17 years) made up 17 percent of the population in the region.[7] This population share represents nearly 1.4 million children who travel to and from a K-12 public or private school each weekday, nine months a year. Because of this volume, children's travel patterns and commute options are significant to the transportation system's vitality.

Over the past 50 years, the percent of children who walk or bicycle to school has steeply declined from a national average of 48 percent in 1969 to 10.4 percent in 2017.[8] Only 10 percent of children in the region commuted to school by walking or bicycling in 2009, while 72 percent arrived at school in a private vehicle and 18 percent arrived in a school bus.[9] As the number of children in the region continues to grow, this low level of active transportation will have significant implications for traffic congestion, air pollution, transportation safety, health (particularly asthma and the rise in child obesity rates), community cohesion and investment, and the amount of money schools spend on transportation.

While there are many barriers to increasing the number of children who walk or bicycle to school, the two critical factors are the distance between a school and residences and traffic-related danger.[10] Thus, the best solution combines land use and transportation: locate schools closer to the neighborhoods they will serve and ensure that students' routes to and from school are direct and safe for walking and bicycling.

School Siting

School siting is the process by which a community decides where to locate schools. This process occurs through the construction of a new school or the consolidation of existing schools, and the layout of the school site.

Historically, schools have been located in the center of neighborhoods and communities. These neighborhood schools accommodated pedestrians and protected children from heavy automobile traffic. However, since the 1970s, school planning has paralleled trends in real estate development, leading to mega-schools located along highways and major arterial roadways on the edge of communities where land is less expensive and easier to assemble. This trend in school siting is significant as studies have shown that the farther schools are located from residences, the less likely it is that children will walk or bicycle to school.[11]

Even when schools are located close enough that students can walk or bicycle to school, the focus on speeds and maximizing motor vehicle throughput has created roads that are unsafe for active travel and lack the necessary infrastructure such as sidewalks and crosswalks. Whether by design or not, current school sitings and transportation practices often produce schools accessible only by car.

[7] NCTCOG Transportation Analytical Forecasting Tool.
[8] McDonald N., Brown A., Marchetti L., & Pedroso M. (2011). U.S. School Travel 2009: An Assessment of Trends. American Journal of Preventive Medicine, 41(2), 146-151.
[9] US Department of Transportation Federal Highway Administration, *Children's Travel to School: 2017 National Household Travel Survey* (2019).
[10] Omura, Hyde, Watson, Sliwa, Fulton, and Carlson, "Prevalence of Children Walking to School and Related Barriers - United States, 2017," *Preventive Medicine* 118 (2019): 191–195.
[11] US Department of Transportation Federal Highway Administration, *Children's Travel to School: 2017 National Household Travel Survey* (2019).

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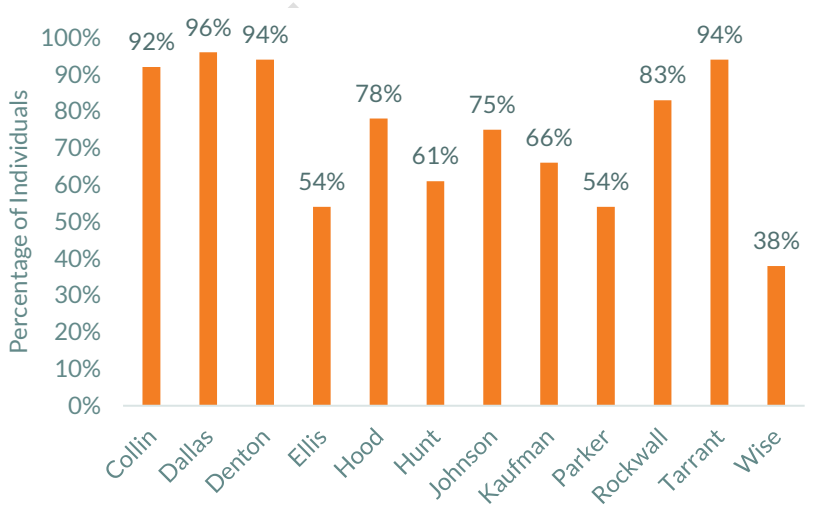
HEALTHY COMMUNITIES

Sustainable development fosters healthy communities by promoting active mobility options, reducing air pollution, and creating safe, accessible environments that enhance overall well-being. The County Health Rankings & Roadmaps[12] is a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute. The County Health Rankings identify vital measures that have an influence on and are important to understanding the health of a community. A county's performance for each of these measures provides a starting point for communities, while the roadmaps provide tools, policies, and programs that may encourage change in community health.

The following graphs illustrate county-level performance for seven health measures that are relevant to transportation.

Figure 1: Access to Exercise Opportunities



Access to Exercise Opportunities (Figure 1):

This health factor measures the percentage of individuals who live in a Census block reasonably close to a park (within one-half mile) or recreational facilities (within one mile for urban areas and three miles for rural areas). Collin, Dallas, Denton, Rockwall, and Tarrant counties score higher than the Texas state average of 82 percent of individuals. Urban counties tend to score higher than rural counties.

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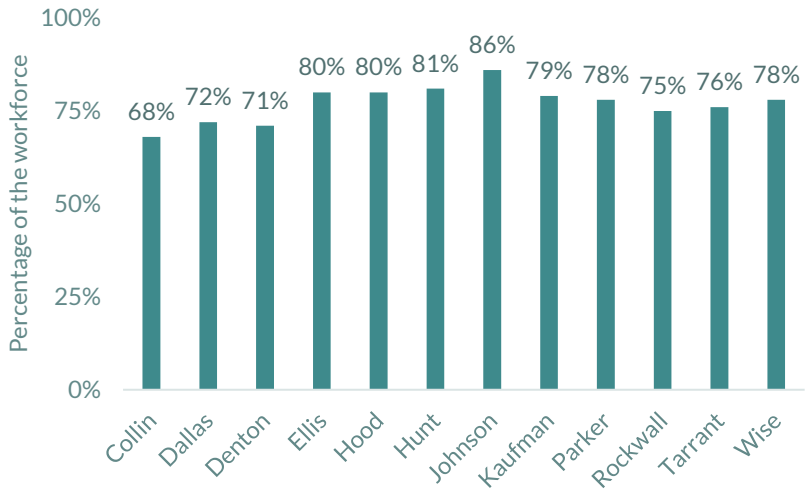
[12] County Health Rankings and Roadmaps Website, https://www.countyhealthrankings.org

Figure 2: Driving Deaths Related to Alcohol Impairment

Figure 3: Driving Alone to Work



Alcohol-Impaired Driving Deaths (Figure 2):

This health factor measures the percentage of motor vehicle crash deaths related to alcohol-impaired driving. The percentage of deaths from motor vehicle crashes in the Metropolitan Planning Area that involve alcohol ranges from 14 percent to 34 percent.

Driving Alone to Work (Figure 3):

This health factor measures the percentage of the workforce that typically drives alone to work. The national average is 72 percent. All but two counties in the Metropolitan Planning Area exceed the national average for driving alone to work.

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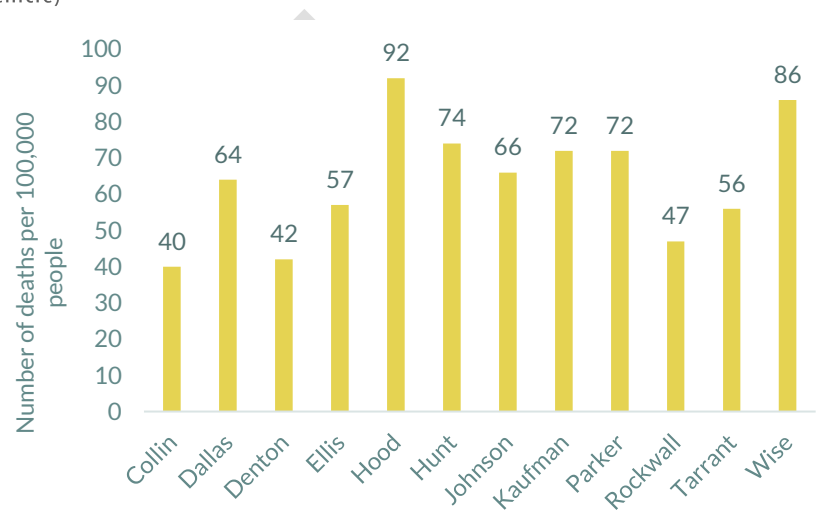
Figure 4: Income Inequality

Income Equality (Figure 4):

Income inequality is a measure of the disparity between households of higher and lower incomes. This health factor measures the ratio of household income at the 80th percentile to that at the 20th percentile, with a higher ratio indicating a larger division. Counties in the Metropolitan Planning Area have an average income inequality of 4.1, lower than the overall state ratio of 4.8.

Figure 5: Deaths Caused by Intentional and Unintentional Injury (including motor vehicle)



Injury Deaths (Figure 5):

Injury deaths are comprised of unintentional and intentional deaths. Unintentional deaths include those resulting from motor vehicle traffic. Intentional deaths include homicide and suicide. This health factor is a rate and measures the number of deaths due to injury per 100,000 people. Hood County has the highest rate of 92 deaths, followed closely by Wise County. These are substantially higher compared to the lowest rate in Collin County, which has only 40 deaths.

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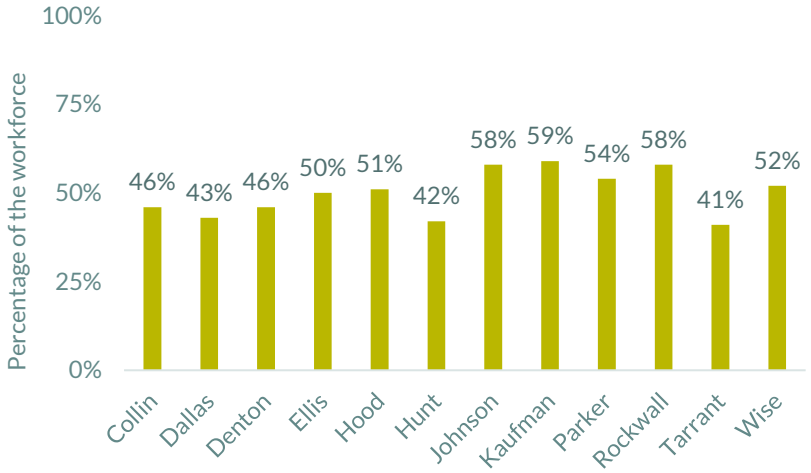
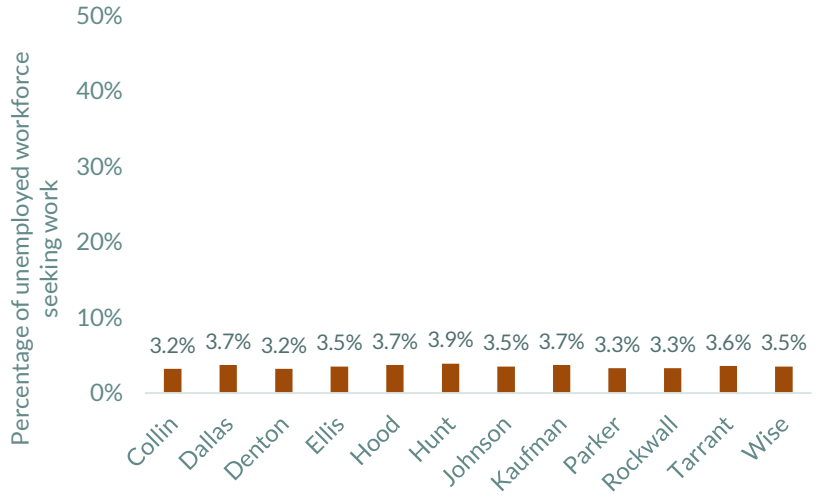
Figure 6: Long Commute – Driving Alone



Driving Alone (Figure 6):

This health factor measures the percentage of workers who commute alone for longer than 30 minutes. In the Metropolitan Planning Area, commuters who drive alone for more than 30 minutes average 50 percent. This exceeds the national average by 14 percent and can be attributed to sprawling development patterns.

Figure 7: Unemployment



Unemployment (Figure 7):

This health factor measures the percentage of the civilian labor force, 16 years of age and older, who are unemployed but seeking work. The percentage in the Metropolitan Planning Area averages 3.5 percent, lower than both the state and national average of 3.9 and 3.7 percent, respectively.

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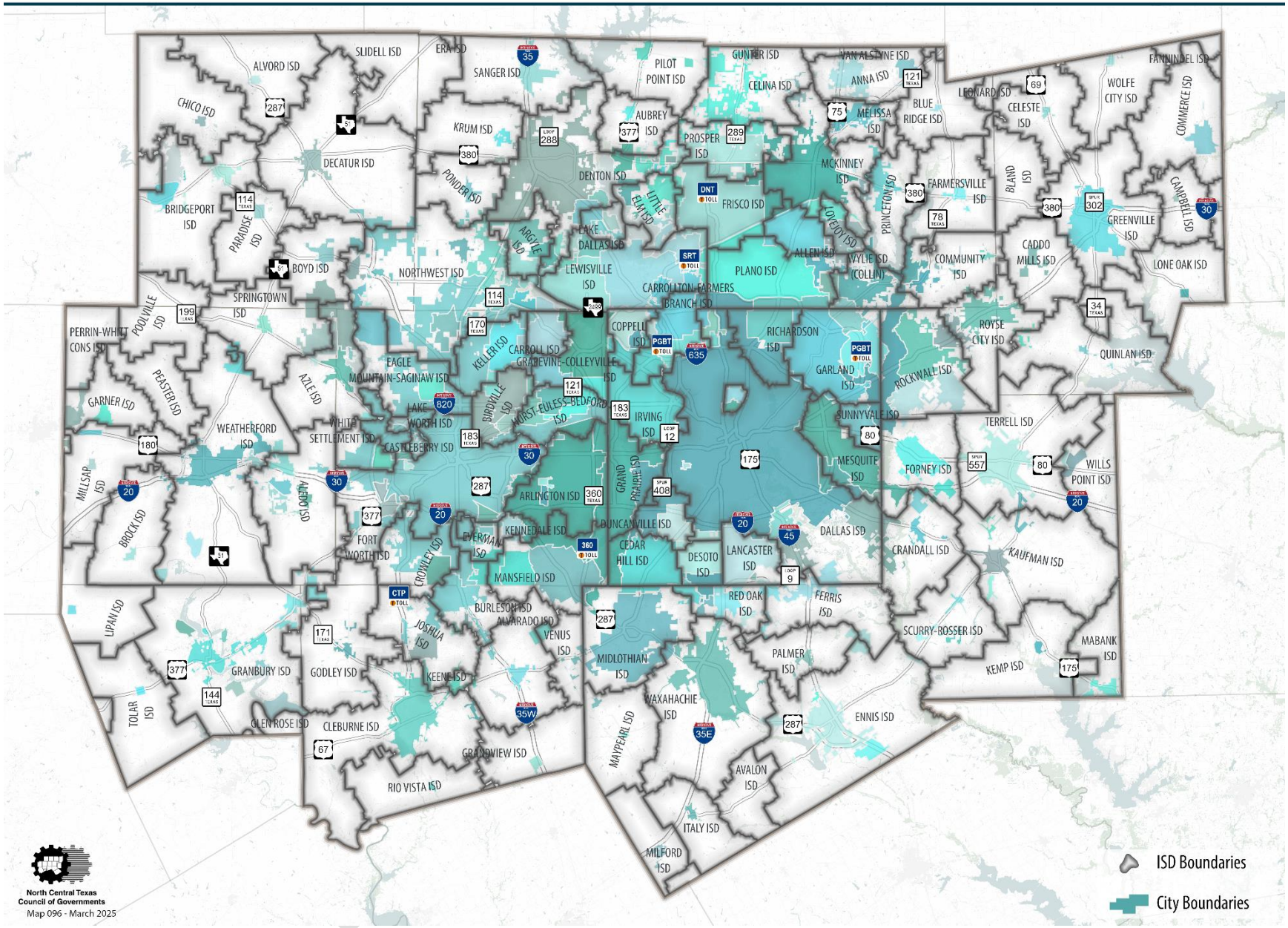
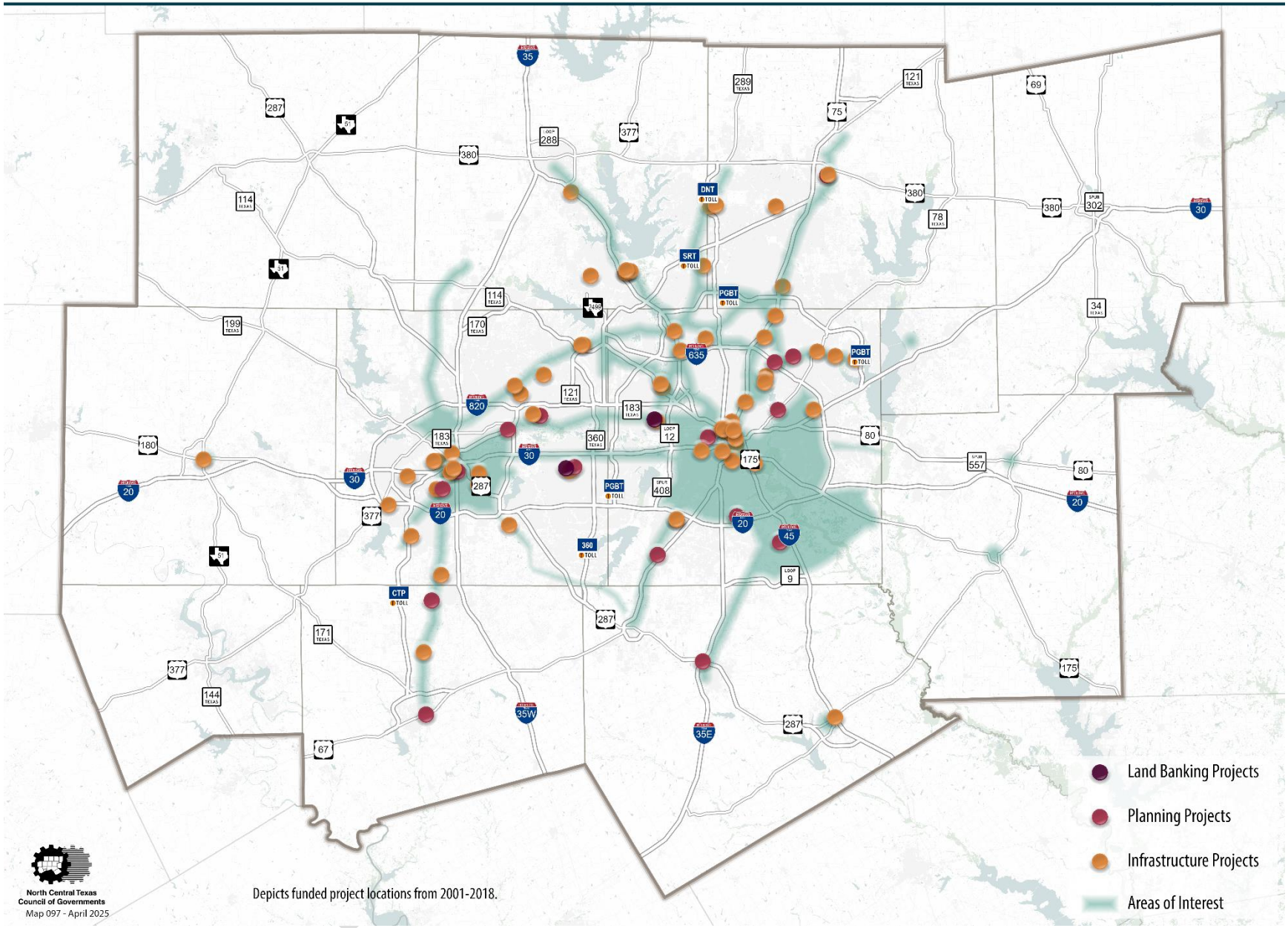
Independent School Districts and Cities

MOBILITY 2050



Sustainable Development Funded Project Locations

MOBILITY 2050