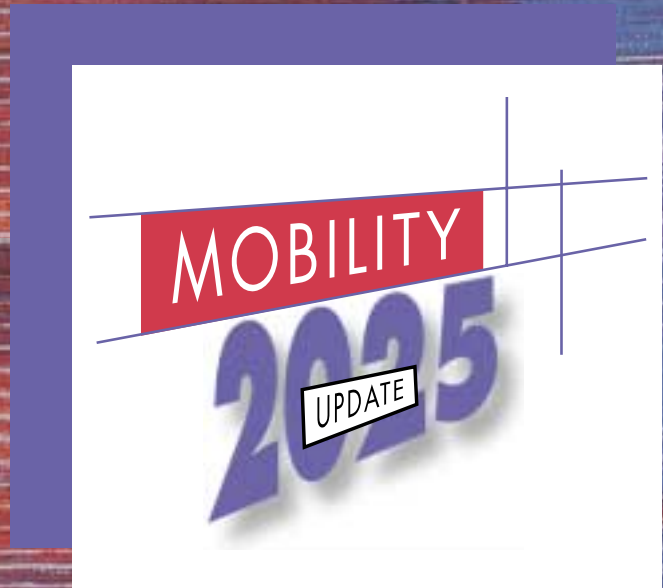
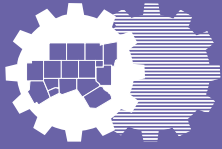


North Central Texas Council of Governments



# The Metropolitan Transportation Plan

Executive Summary

## Mobility 2025 Update Goals

### Transportation

- Accommodate Expected Demographic Growth
- Reduce Traffic Congestion
- Provide Multimodal Options
- Improve Travel Efficiency

### Quality of Life

- Provide for Continued Economic Development
- Provide Increased Transportation Accessibility
- Reduce Environmental and Community Impacts

### Financial

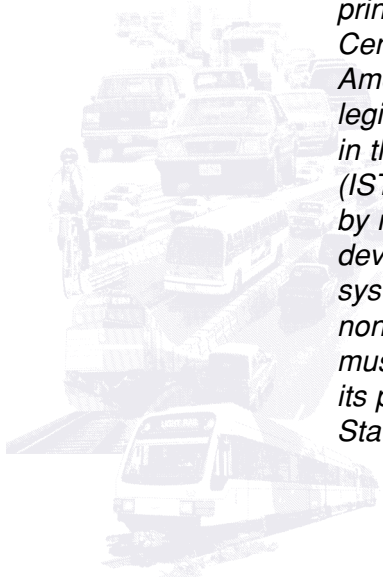
- Pursue Stable, Long-Term Revenue Options
- Reduce Transportation System Costs

**Mobility 2025 Update: The Metropolitan Transportation Plan** is a comprehensive, multimodal blueprint for transportation systems and services aimed at meeting the mobility needs of the Dallas-Fort Worth (DFW) Metropolitan Area. It serves to guide the expenditure of the more than \$49 billion of federal, State, and local funds expected to be available for transportation improvements through the year 2025. More than that, it recognizes the heightened awareness of the growing concerns for improved air quality, public acceptance of major transportation facilities, and the need for adequate financial resources for Plan implementation.

*Mobility 2025 Update is the product of the comprehensive, cooperative, and continuous transportation planning efforts among local governments, Dallas Area Rapid Transit (DART), Fort Worth Transportation Authority (The T), Texas Department of Transportation (TxDOT), North Texas Tollway Authority (NTTA), Texas Natural Resource Conservation Commission (TNRCC), and the Dallas/Fort Worth International Airport. The Plan Update was adopted in May 2001 by the Regional Transportation Council (RTC) and the Executive Board of the North Central Texas Council of Governments (NCTCOG), together serving as the Metropolitan Planning Organization (MPO) for the DFW Metropolitan Area.*

*Mobility 2025 is the blueprint for Transportation planning through the year 2025.*

*The development of Mobility 2025 Update was guided by the principles set forth in the Transportation Equity Act for the 21st Century (TEA-21) and the requirements of the Clean Air Act Amendments of 1990. TEA-21 was passed by federal legislators in June 1998 and continues the philosophy set out in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), which strengthened the role of the planning process by making it a central decision-making mechanism for development and funding of the metropolitan transportation system. Because the DFW Metropolitan Area is a designated nonattainment area for the pollutant ozone, the Plan Update must be updated every three years and must demonstrate that its plans, projects, programs, and policies are consistent with State and regional air quality improvement goals.*



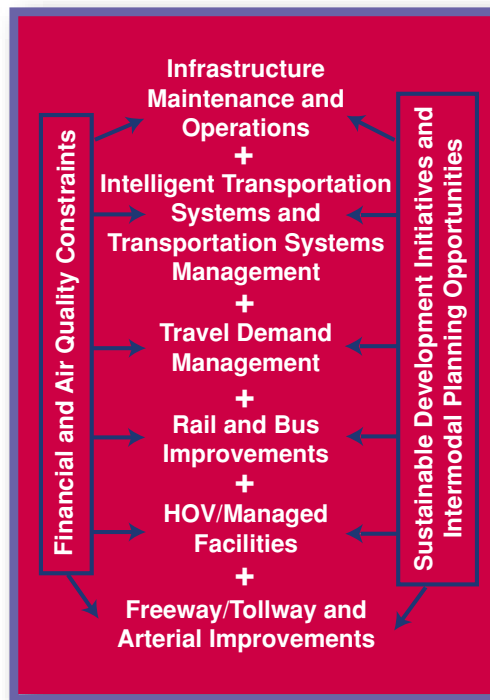
## Plan Development Process

Growing concerns regarding the region's air quality and the anticipated lack of funding for future needed transportation improvements, mandated that Mobility 2025 Update be developed in a way that focuses on lower-cost, highly cost-effective strategies before considering more traditional large-scale capacity improvements. Through this process, recommendations were developed which aggressively target traffic congestion and improve air quality for the region.

The Plan Update development process, as adopted by the RTC, began with the allocation of resources for the maintenance and operation of the current transportation system. Then, transportation system management strategies such as freeway bottleneck improvements, intelligent transportation system applications, intersection improvements, and traffic signal coordination were identified to maximize the efficiency of the current transportation system. An aggressive travel demand management program was then developed to encourage strategies such as telecommuting, bicycle, and pedestrian travel in an effort to eliminate as many trips as possible from the transportation system. Additional vehicle trip reductions were targeted through the development of public transportation options, such as bus and rail transit, as well as high occupancy facilities in corridors where feasible. Additional capacity for single-occupant vehicles was identified in the

form of freeway/tollway lanes and arterial street lanes where appropriate.

Throughout the development of each of these components, air quality and financial impacts were evaluated to ensure that financial feasibility and air quality conformity requirements could be met. In addition, consideration was given to sustainable development and intermodal opportunities.



## Outreach Efforts

Public involvement was a key component in the development of Mobility 2025 Update. Consistent with the public involvement procedures adopted by the Regional Transportation Council, external public meetings were held on the draft Mobility 2025 Update, and 30 days were allowed for public comment prior to adoption of the Plan Update. There were 10 public meetings held beginning in February 2001 to keep the community aware of the progress and issues associated with the Plan Update development. Three media briefings were provided to inform print and broadcast media of the development of Mobility 2025 Update, encourage attendance and

participation, and to educate the public about Mobility 2025 Update.

Recommendations of the Plan Update were developed under the guidance of the elected officials who comprise the Regional Transportation Council. Technical guidance and support was provided by NCTCOG's Surface Transportation Technical Committee, the Travel Demand Management/Congestion Management System Committee, and the Bicycle and Pedestrian Transportation Task Force.





# Regional Growth

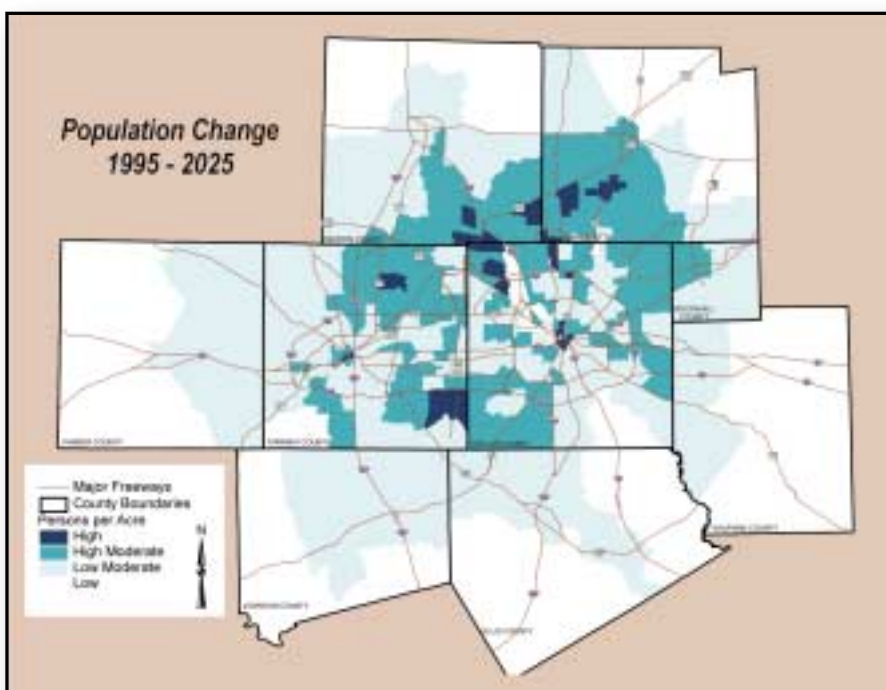
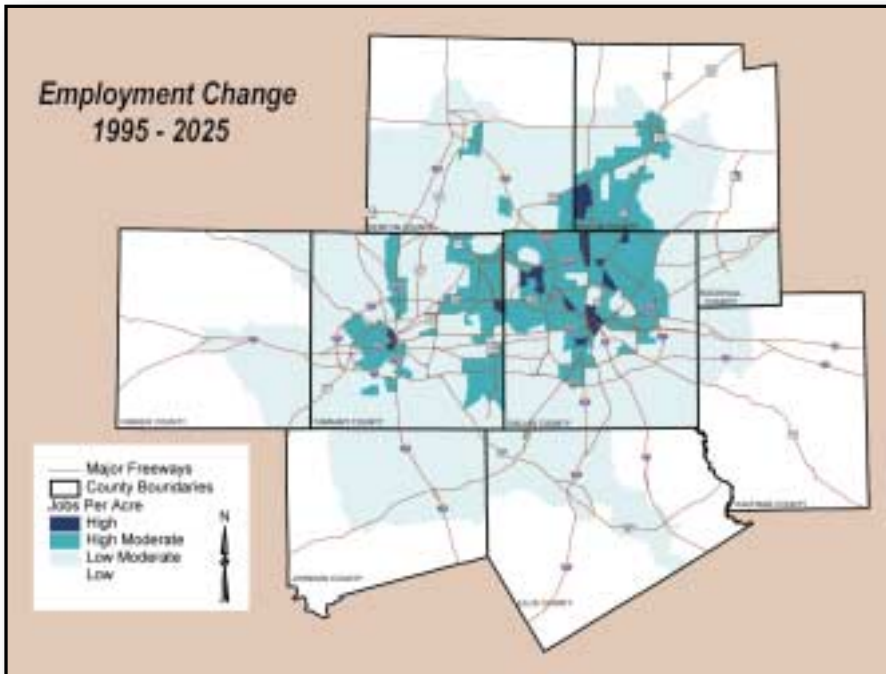
The Dallas-Fort Worth Metropolitan Area was one of the most rapidly growing areas in the U.S. during the 1980s and 1990s. Year 2000 Census data shows that the DFW Metropolitan Area is the ninth largest metropolitan area in the country with a growth rate

more than twice that of the eight larger areas. Larger today in population than 27 states and as the largest metropolitan area in Texas, the Dallas-Fort Worth area is a major economic and social force. Representing approximately one-third

of the State's gross regional product, the region is a national and statewide leader in job growth and is consistently named among the most attractive U.S. metropolitan areas for corporate expansions and relocations.

This trend of rapid growth is expected to continue through the year 2025. According to projections performed independent of the Plan Update by the NCTCOG Research and Information Services Department, population will grow by 47 percent, from 4.5 million to 6.7 million persons, and employment by 45 percent, from 2.7 million to 3.9 million jobs. On average, the region is expected to add population at a rate of 82,000 persons per year and employment at a rate of 47,000 jobs per year. This is equivalent to adding two cities the size of Dallas or four cities the size of Fort Worth.

The dramatic growth of the region will have significant accessibility, mobility, and economic implications. If current travel trends continue, this translates into more travel resulting in increased traffic congestion and negative air quality impacts. These trends include: increases in automobile ownership, drive alone travel, and suburbanization, resulting in more and longer trips. Unless a way to modify the travel characteristics of the residents of the region is found, an already overburdened transportation system will have to absorb this increase in travel. To this end, Mobility 2025 Update contains plans, programs, policies, and projects aimed at balancing transportation and land-use decisions in a way that accommodates the growth while minimizing any negative transportation, air quality, and community impacts. Mobility 2025 Update balances the goals of the region through a diversified approach of short and long range modal commitments.



# Congestion Management Strategies

The need to operate the current transportation system as efficiently as possible is a top priority, because of the air quality and financial challenges faced by the Dallas-Fort Worth Metropolitan Area. Mobility 2025 Update recommends three types of management approaches proven to be cost-effective tools in addressing these challenges. Travel Demand Management, Transportation System Management, and Intelligent Transportation Systems are very cost-effective, quick-implementation projects, policies, and programs that encourage the use of alternate travel modes and improve the efficiency of the transportation system.

Travel Demand Management (TDM) strategies address the demand side of travel behavior by reducing the number of vehicles that travel on roadways through the promotion of alternatives to driving alone. TDM strategies adopted as part of the Mobility 2025 Update include employer trip reduction programs, vanpool programs, park-and-ride facility development, and transportation management association creation. The employer trip reduction program is a cooperative effort between the public and private sectors that targets commute vehicle trips of employees that work for large employers. Alternatives to driving alone, such as ridesharing, telecommuting, flexible work hour programs, transit pass subsidies, and pedestrian/bicycle facilities are encouraged through the employer trip reduction program. The vanpool program promotes ridesharing alternatives to commuters traveling long distances to work and to those with little or no transit available. This strategy aims at increasing average vehicle occupancy during peak travel periods, thereby decreasing drive-alone travel. Park-and-ride facilities can also be effective in reducing vehicle trips by increasing vehicle occupancy. These facilities serve as collection areas for persons using ridesharing alternatives, the recommended bus/rail system, and

High Occupancy Vehicle/Managed Facilities. Transportation Management Associations are public/private organizations that implement congestion management strategies and other local transportation projects in small, geographically defined areas. Many transportation management associations are incorporated, non-profit organizations made up of employers, developers, building owners, and local government representatives and are located in dense employment areas.

The Transportation System Management (TSM) approach to congestion mitigation seeks to identify improvements to new and existing facilities of an operational nature. These techniques are designed to improve traffic flow and safety through better management and operation of existing transportation facilities. TSM strategies that are adopted in Mobility 2025 Update include intersection improvements, traffic signal enhancements, and removal of freeway and arterial bottlenecks. Intersection 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. Traffic signal enhancements include signal timing optimization, signal equipment upgrades, and system interconnection. Freeway and arterial bottleneck removal consists of improving insufficient acceleration and deceleration lanes and ramps, sharp horizontal and vertical curves, narrow lanes and shoulders,



inadequate signage and pavement striping, and other geometric characteristics.

The planning, programming, and implementation of Intelligent Transportation System (ITS) programs and projects is another tool that is recommended for this region. ITS utilizes closed circuit television, lane control signals, dynamic message signs, ramp meters, mobility assistance patrols, and traffic flow detectors to identify and manage the conditions of the transportation system. The region is developing integrated arterial and freeway/tollway systems along strategic corridors in the DFW Metropolitan Area. The transit authorities in the region, DART and The T, are developing vehicle business systems including computer automated dispatch and automated vehicle locator systems. The roadway and transit ITS systems are being designed to provide operators and travelers with real-time information on system performance, in an effort to make systems safer, more reliable, and to provide greater choices to travelers (trip mode and trip timing).

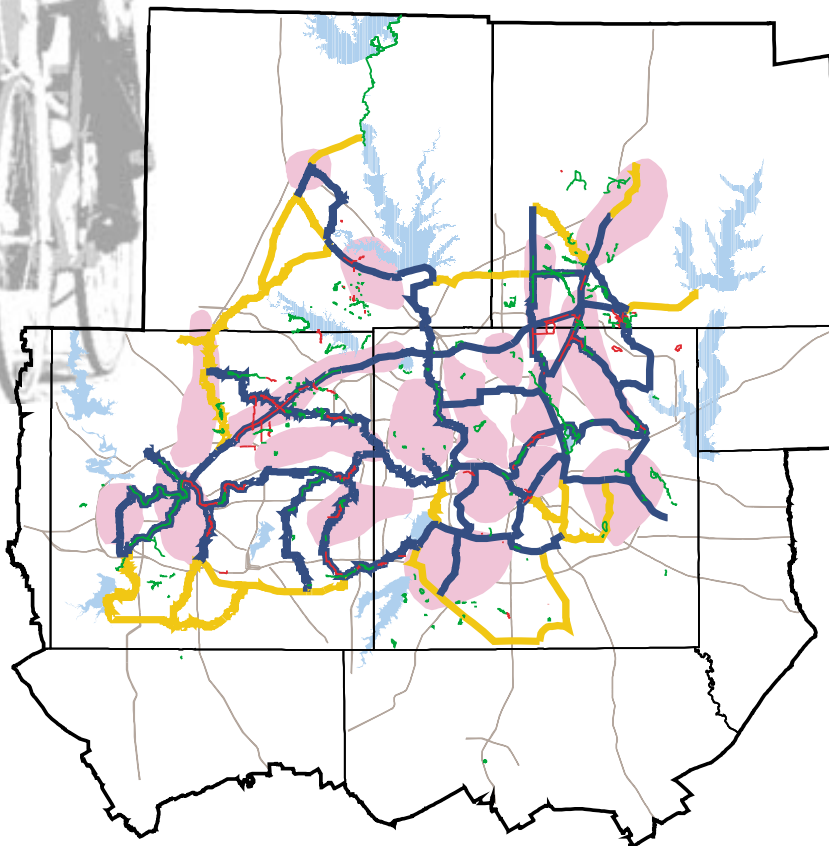


# Pedestrian and Bicycle Facilities

One of the goals of the pedestrian and bicycle aspect of the Plan has been to advance these travel modes into more detailed planning, programming, and construction. This portion of Mobility 2025 Update identifies strategies to improve pedestrian and bicycle safety and mobility, as well as increase the service area of bicycle and pedestrian facilities within the region. The recommended facilities were developed to serve short trips, generally less than five miles, particularly in high density areas, mixed-use areas, and along congested travel corridors. The Plan Update calls for \$754 million of improvements including the regional Veloweb system, an on-street bicycle improvement program, pedestrian and bicycle transportation districts, and support for local pedestrian and bicycle initiatives.

The regional Veloweb is a 306-mile system of interconnected, off-street bicycle facilities with grade-separated crossings and pavement

markings designed to serve bicycle commuter traffic. The Plan Update encourages the use of wide outside lanes to increase safety for bicyclists. The Plan Update also endorses the signed on-street route systems of several local governments which identify the network of streets that are preferable for bicycle traffic in their cities. Pedestrian and bicycle districts are areas with activity densities and land-use characteristics conducive to pedestrian and bicycle usage. Funds will be used to improve and enhance the pedestrian and bicycle facilities to accommodate and encourage their use including the construction of on and off-street bicycle facilities, sidewalks, crosswalks, landscaping, and the provision of support facilities such as bicycle racks and shower/changing facilities. In addition, technical support will be provided to local governments for the identification, planning, and implementation of safe, effective pedestrian and bicycle facilities.



## Mobility 2025 Update Bicycle Facilities

### Legend

- Bicycle Transportation Districts
- Recommended Veloweb Routes
- Candidate Veloweb Routes
- Existing Off-Street Hard Surface Trail (Improved)
- Programmed Off-Street Bicycle/Pedestrian Facilities

New facility locations indicate transportation needs and do not represent specific alignments.

All existing railroad rights-of-way should be monitored for potential future transportation corridors.

All veloweb routes should be targeted for right-of-way preservation.



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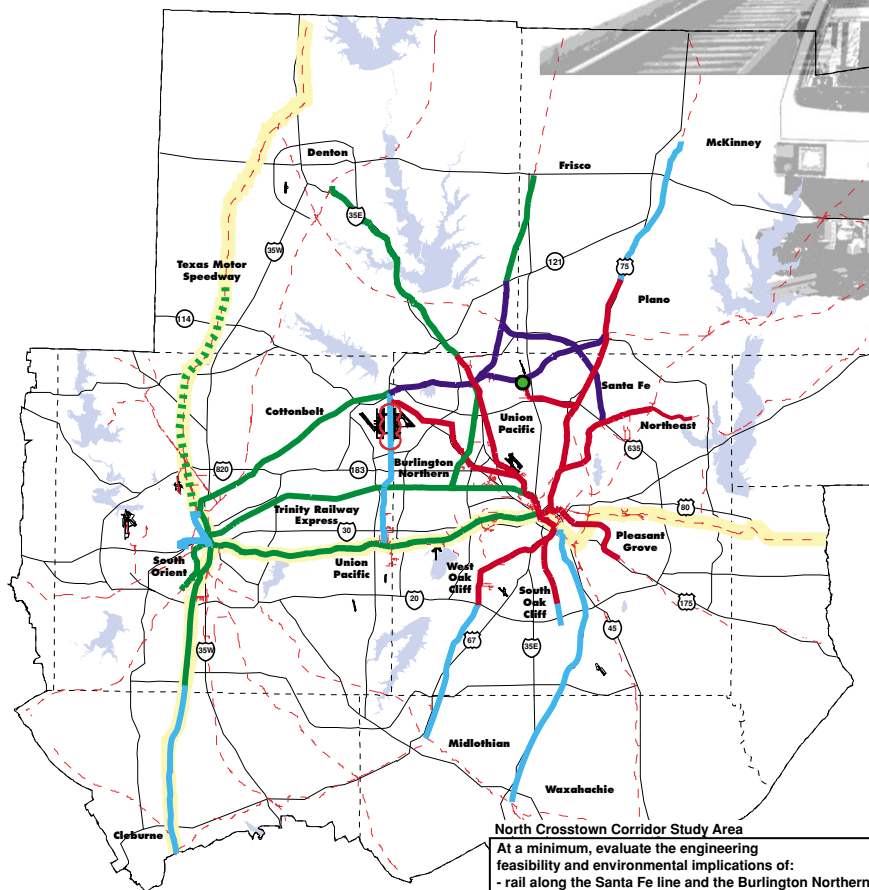




# Regional Rail and Bus Transit Systems

The transit component of the Plan includes local bus, express bus, commuter rail, light rail, and rail technologies yet to be determined. Currently, each one of these technologies exists in various parts of the region. The Fort Worth Transportation Authority and Dallas Area Rapid Transit currently provide traditional fixed-route transit service in their respective service areas. The City of Denton also operates limited fixed-route transit service. Currently, 34 miles of light rail service is available in the DART service area in the North Central Expressway corridor, the South and West Oak Cliff corridors, and in downtown Dallas. DART and the T jointly operate 25 miles of commuter rail service on the Trinity Railway Express. Analysis of the rail and bus transit systems for the Plan focused on the extension and expansion of each of these modes as appropriate.

A series of rail alternatives was developed and evaluated to arrive at the final recommendations which include 77 additional miles of light rail, 152 additional miles of commuter rail, and 141 miles of rail where the technology or institutional structure to implement and operate the service is undefined pending additional study. Also included is a recommendation for 25 miles of special events service to the Texas Motor Speedway from Fort Worth. In addition, a recommendation is made in the North Crosstown Corridor to continue to investigate the most appropriate route for rail service in that corridor. The total cost for the rail system construction is \$8.6 billion.



**North Crosstown Corridor Study Area**  
 At a minimum, evaluate the engineering feasibility and environmental implications of:  
 - rail along the Santa Fe line and the Burlington Northern line, including the feasibility of an alternative connection along S.H. 190;  
 - rail along the full Cottonbelt Corridor, from Parker Road to DFW Airport; and  
 - rail along the Cottonbelt Corridor from DFW Airport with an eastern transition to light rail along LBJ Freeway at an Addison Intermodal Center.

## Mobility 2025 Update Rail System

### Legend

- Commuter Rail
- Light Rail
- North Crosstown Corridor Study
- Possible Eastern Terminus
- Staged Rail \*
- - - Special Events
- Intercity Rail Corridor
- Freeways/Parkways
- - - Existing Rail Corridors

All existing railroad rights-of-way should be monitored for potential future transportation corridors.

New facility locations indicate transportation needs and do not represent specific alignments.

### \* STAGED RAIL

- (Must meet two of the following)
- Refined rail forecasts are necessary to determine technology and alignment
  - Extension into Olympic Village Site (South Oak Cliff LRT)
  - Institutional structure for implementation to be determined
    - DART and FFTA expansion (preferred) or New transit authorities will be created
    - Other sources of funding to be pursued



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# HOV and Managed Facilities

High Occupancy Vehicle (HOV) lanes are becoming a common solution toward reducing freeway congestion across the country, including the Dallas-Fort Worth Metropolitan Area. The key to a successful HOV facility is to manage the demand so that it never exceeds the capacity, thereby maintaining a high level-of-service. The HOV concept is to move the same, or more, people in fewer vehicles faster and more reliably than a typical congested freeway lane. However, one common criticism regarding HOV lanes is the perception that they do not carry as many vehicles as a mixed-flow lane and are often underutilized in the off-peak periods. In response to this issue, Mobility 2025 Update extends this managed concept to efficiently utilize the capacity in the off-peak periods by treating them as express lanes for non-HOV users, but still managing the demand by charging a user fee or toll.

Two types of HOV/Managed Facilities are identified in Mobility 2025 Update: Reversible and Two-Way. Reversible facilities are recommended in corridors

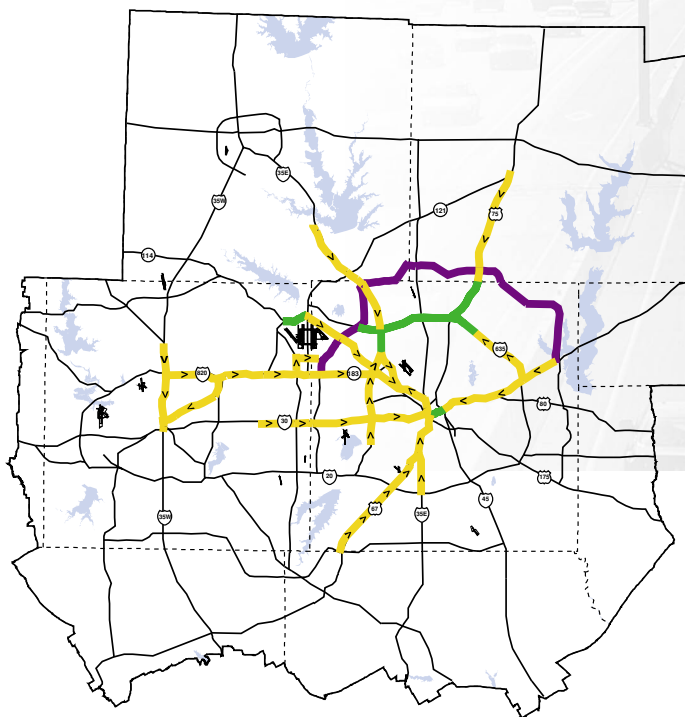
where the HOV demand is directional; heavy in one direction during the morning peak period and the opposite direction in the evening peak period. On these facilities the number of lanes required to accommodate the peak-period demand in the peak direction are constructed. They offer ramps and gates that only allow traffic to enter and exit in the proper direction during the appropriate time period. At some point during the day, the lanes are closed to allow those access points to close and those necessary to accommodate the traffic in the reverse direction to open. Two-Way facilities are recommended where the HOV demand warrants providing the capacity in both directions during the morning and evening peak periods. These facilities are available in both directions for the entire day.

The managed concept can also be applied to existing or proposed tollways through differential tolls charged by auto occupancy. In this scenario, a higher toll could be charged to non-HOV users, a lower or no toll could be charged to HOV users, and a toll plaza bypass lane could be offered

for qualified vehicles to avoid the delay at toll booths. This type of facility is identified in Mobility 2025 Update as a Managed HOV/Integrated Tollway.

This Managed Facility concept is proposed because a properly operated facility would provide relatively congestion-free travel through an auto occupancy and toll management approach. HOV facilities can be built which provide travel time advantages to those willing to carpool, vanpool, or take public transportation, while providing a revenue source to offset construction and operating costs. In addition, tollways can be built which generate revenue, and vehicle occupancies are increased through toll management strategies designed to encourage carpools and vanpools.

Mobility 2025 Update contains recommendations for an extensive HOV and Managed Facility system. The Plan Update calls for constructing the equivalent of over 600 lane miles of HOV/Managed Facilities at a cost of \$2.1 billion.



## Mobility 2025 Update HOV and Managed Facility System

### Legend

- Reversible
- Managed HOV/Integrated Tollway
- Two-Way
- Freeways/Parkways

Arrows represent the direction of travel during the morning peak period. Direction of travel is reversed during the afternoon peak period on these HOV facilities

Right-of-Way preservation should be encouraged in all freeway corridors to accommodate potential future HOV facilities.

New facility locations indicate transportation needs and do not represent specific alignments.

All HOV facilities will be managed for mobility efficiency.



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# Freeway/Tollway System

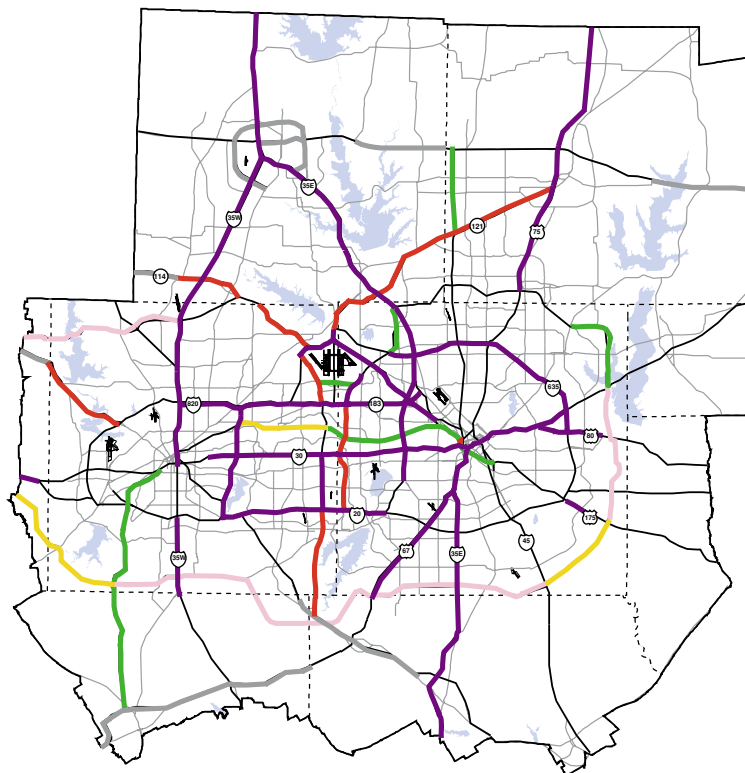
A major component of the Dallas-Fort Worth Metropolitan Transportation System is the regional freeway and tollway system. The system continues to carry nearly half of all vehicular travel in the area. Even considering the availability of other multimodal options and advanced traffic management strategies, there will still be significant demand placed on the region's roadway system. Mobility 2025 Update calls for the addition of 2,479 lane miles of new freeway/tollway capacity at a cost of \$11.5 billion and \$1.3 billion is expected to come from tolls and user fees. Mobility 2025 Update faces the challenge of balancing a huge demand on an already over-used system, with constrained funding resources from traditional fuel tax and vehicle registration fee revenues. Over the past few years, the idea of user-fee based roadways has been growing in popularity and acceptance. To that end, it is the Regional Transportation Council's policy to evaluate toll or congestion pricing feasibility for new

freeway capacity. The RTC is not considering conversion of existing free roadways to tollways.

There are six categories of improvements identified for the freeway and tollway system outlined in Mobility 2025 Update. Improving Existing Freeways includes the widening of existing freeways by adding two or more lanes or the reconstruction of existing freeways to add additional capacity through bottleneck improvements as well as accommodating other improvements. New Staged Freeways are in corridors where there is currently no freeway, but one is warranted by 2025 and could be constructed in stages as the demand warrants. The New Staged Tollway category identifies corridors where revenue estimates support for the construction of new tollway capacity by 2025. New Staged Parkway are facilities that have sufficient demand for a major transportation facility, but not a full freeway or tollway.

Service roads, interchanges, or grade separations could be constructed initially. In addition, these could be planned and designed in such a way to convert them to a freeway or tollway at some time after 2025. The Upgrade to Parkway category identifies corridors where an arterial roadway exists today, but demand by 2025 is sufficient to require the additional capacity offered by a regional facility. The final category is Preserve Right-of-Way," where demand is not expected to be strong enough to warrant the construction of a transportation facility, but the corridor should be preserved for future system capacity.

The development of the projects in these corridors will move forward toward implementation and will be refined as the corridors proceed through the advanced planning, design, and engineering phases.



## Mobility 2025 Update Freeway and Tollway System

### Legend

- Improve Existing Freeway
- New Staged Freeway
- New Staged Tollway
- New Staged Parkway
- Upgrade to Parkway
- Preserve Right-of-Way

Dallas CBD



Fort Worth CBD



Additional and improved freeway interchanges and service roads should be considered on all freeway facilities in order to accommodate a balance between mobility and access needs.

New facility locations indicate transportation needs and do not represent specific alignments.

The need for additional east/west capacity is identified in the corridor between Northwest Highway and Mockingbird Lane from US 75 to SH 183/IH 35E. Further study is needed to refine alignment and operational characteristics.



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# Regional Arterial System

The Regional Arterial System is a subcomponent of a broader regional thoroughfare system. The NCTCOG Regional Thoroughfare Plan (RTP) recognizes the network of arterial facilities having regional travel significance upon which the Regional Arterial System is based. The RTP includes all roadways classified as principal arterials through the TEA-21 functional classification effort, as well as the National Highway System (NHS). In addition to the basic framework of federally designated facilities, complementary local government principal arterials are incorporated to complete the 1,731 miles of regional arterials. The only changes incorporated since the January 2000 adoption of the regional arterials were those identified through the Mobility 2025 Update public meetings in spring 2001 where one modification was made to the Regional Arterial System at the request of a local government. Another six regional arterials incorporated minor changes to the proposed number of lanes that

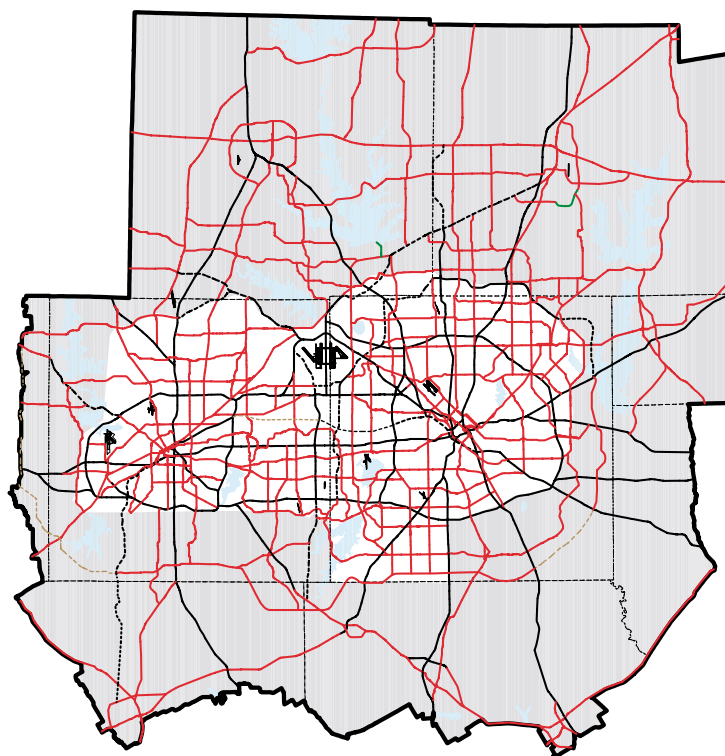
have been included in the amendment of the Regional Thoroughfare Plan arterial network.

The Regional Arterial System is a critical component of the Plan Update in providing transportation support and access. The importance of regional arterials to the overall Plan Update becomes increasingly essential as reliever facilities to parallel freeways and tollways, as well as, supporting accessibility to other regional facilities to and from local land uses. Travel on regional arterials is expected to rise almost 48 percent over current levels by the year 2025.

The Regional Arterial System has evolved as a tool to quantify the amount of future arterial capacity needed to support the Metropolitan Transportation System (MTS). Based on the importance of providing user mobility and access throughout the region, a total of \$5.7 billion in arterial capacity funds is expected to be available to maintain existing regional

arterials and build new components. The Plan Update identifies \$3.1 billion committed to the 1,731 mile designated Regional Arterial System and \$2.6 billion of additional local funds for other arterial improvements through the year 2025, as reflected in the Financial Plan.

The updated Regional Arterial System map shows a shaded area surrounding the urban core in recognizing that the regional arterial network must be expanded in the future to support long-term growth. At present, the future arterial needs have not been fully studied for all of the shaded area shown on the map. The main purpose for showing the shading is to identify the need for a more comprehensive regional arterial network in the outlying areas to support the growth that is being forecast in those areas. Additional studies will be needed to substantiate the magnitude and extent of improvements that may be warranted beyond 2025.

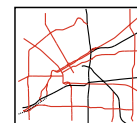
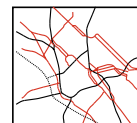


## Mobility 2025 Update Regional Arterial System

### Legend

- Regional Arterials
- Existing Freeways and Tollways
- - - Proposed Freeways and Tollways
- Preserve Right-of-Way
- Local government thoroughfare plans vary in these corridors
- Thoroughfare Spacing Review

New facility locations indicate transportation needs and do not represent specific alignments.  
Based on NCTCOG's Regional Thoroughfare Plan



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# Intermodal/Freight Transportation

The North Central Texas region represents one of the largest “inland ports” in the nation where freight is moved, transferred, and distributed to destinations across the State and around the world. North Central Texas has one of the most extensive surface, air, and rail transportation networks in the world, providing trade opportunities for the more than 600 motor/trucking carriers and almost 100 freight forwarders that operate out of the Dallas-Fort Worth Metropolitan Area. The region is the primary economic engine in Texas, representing about one-third of the State’s total economic output. As a measure of the region’s strategic geographic position for goods movement, 41 million people in 80 major cities can be reached overnight from the DFW Metropolitan Area by truck or rail. The nation’s largest rail lines operate in the region and coordinate with trucking shippers at four intermodal freight centers located on or near significant highway corridors. Overall, the region is considered by most economic and

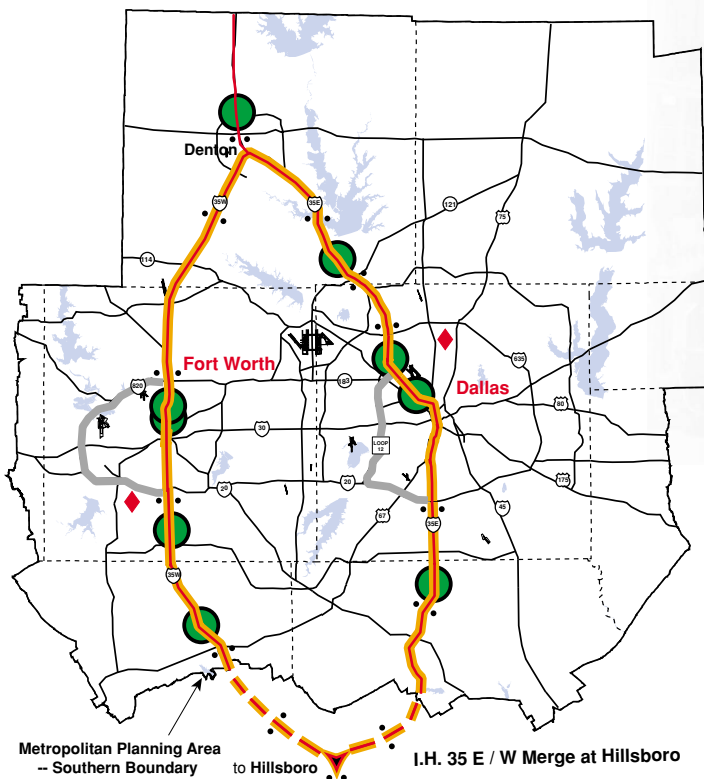
logistics experts as the primary trucking/rail/air cargo center in the Southwest and will grow in importance as a principal international marketplace in the 21st century.

Furthermore, the significance and impact to the regional economy and goods movement of the North American Free Trade Agreement (NAFTA), which was enacted in 1993, cannot be understated. Trade from the DFW Metropolitan Area to Mexico and Canada has more than doubled to \$2.3 billion. Interstate Highway 35 has grown in importance, as it extends from the Texas-Mexico border to northern Minnesota. Referred to as the NAFTA Superhighway, this major north-south route also serves both the Fort Worth Central Business District and the Dallas Central Business District.

Two critical goals of the Intermodal/Freight Transportation Planning process in the region is increased mobility and improved safety. By working with local governments and

private-sector partners, strategic projects that address these goals can be identified, and consequently, funding opportunities for these improvements can be sought. The Strategic Routing System, for instance, identifies the NAFTA corridor and other major freight corridors as roadways that should be targeted for improvements. The Hazardous Materials Truck Route is another important element of the freight route system. In addition, a program that identifies and prioritizes at-grade highway-railroad crossings will assist in guiding improvement funds.

Mobility 2025 Update recognizes the importance of goods movement in this region. As transportation funds are made available, careful consideration will be given to projects that impact the mobility and safety of the transportation system, particularly in the context of freight transportation and intermodal accessibility.



## Mobility 2025 Update Interstate Highway 35 NAFTA Corridor Technology Deployment

### I.H. 35 Intelligent Transportation System Components

- Dynamic Message Signs (Potential/Existing Sites)
- Speed Detection
- Incident Bypass Routes
- Freeways/Parkways
- Truck Stop/NAFTA Kiosk (Potential Sites)
- ◆ TxDOT Transportation Management Center



# System Performance

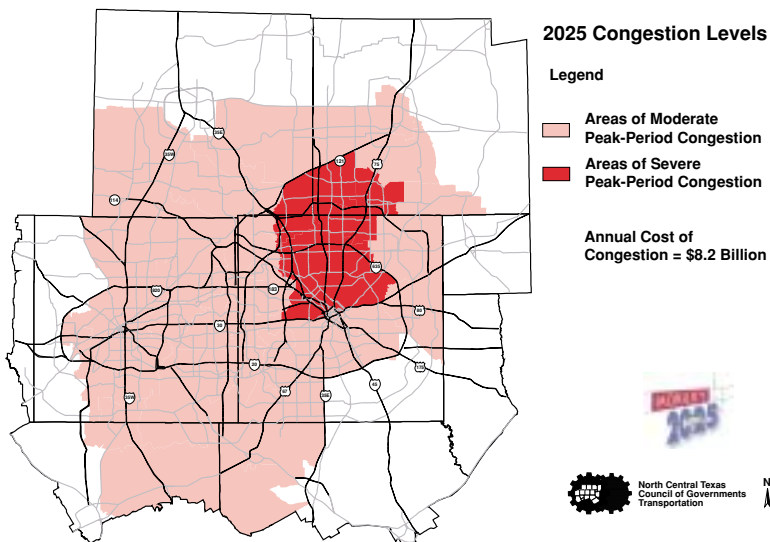
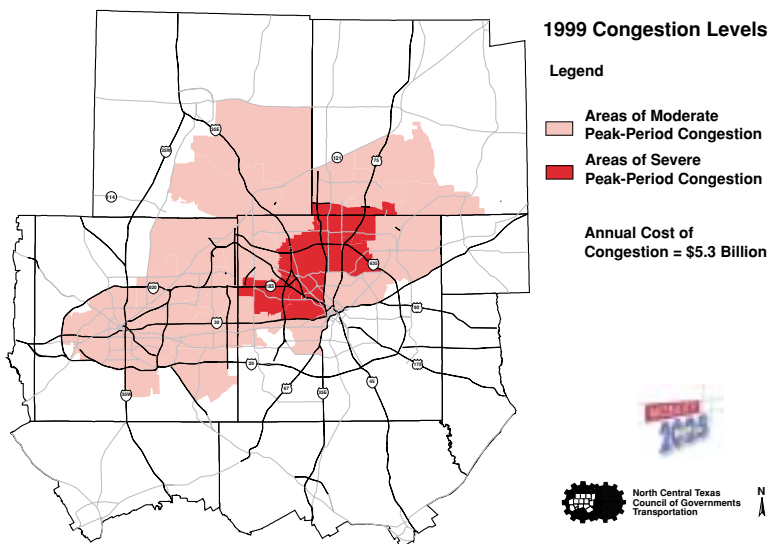
A transportation system's performance can be measured in many ways, especially when talking about a multimodal transportation system. It is often measured in terms of how successful the system is in reducing roadway traffic congestion. If multimodal options, trip reduction programs, system management projects, and other travel policies are effective, the result will be reflected through reduced congestion on the roadway system. However, demographic growth may increase faster than transportation system capacity can be provided, either due to implementation issues or financial constraint.

In 1999, the daily vehicle miles of travel was 125 million in the region. Regionwide, 38 percent of all roadways were congested during the peak hour, resulting in \$5.3 billion in lost productivity due to traffic congestion annually. Travel and congestion is not uniform throughout the region. In 1999, the most severe congestion was in the north Dallas County/south Collin County area around I.H. 635 (LBJ), I.H. 35E (Stemmons), and the Dallas North Tollway. If the expected demographic growth were to occur, and there were no major transportation improvements through the year 2025, there would be over



200 million vehicle miles of travel in the region with 65 percent of the roadways congested in the peak hour, resulting in \$15.6 billion in congestion costs. This, of course, is an unrealistic scenario since some transportation improvements will certainly occur, and if they did not, the region would not attract the expected demographic growth. However, it is a good indication of how much impact the population and economic growth will have if we do not provide significant transportation system capacity to accommodate it.

If the projects, programs, and policies contained in Mobility 2025 Update are implemented, 45 percent of the roadways will be congested with an annual congestion cost of \$8.2 billion – over 50 percent more than the cost in 1999. Severe congestion will spread to include southeast Denton County and additional portions of north Dallas and south Collin Counties. Financial, environmental, and social constraints will make it very difficult to accommodate the increased demand for travel resulting from the regional growth. If we are to meaningfully reduce congestion levels, we must continue to aggressively pursue additional congestion mitigation strategies aimed at reducing vehicular travel and making the transportation system more efficient, as well as additional revenue to implement those strategies.



# The Role of Major Investment Studies

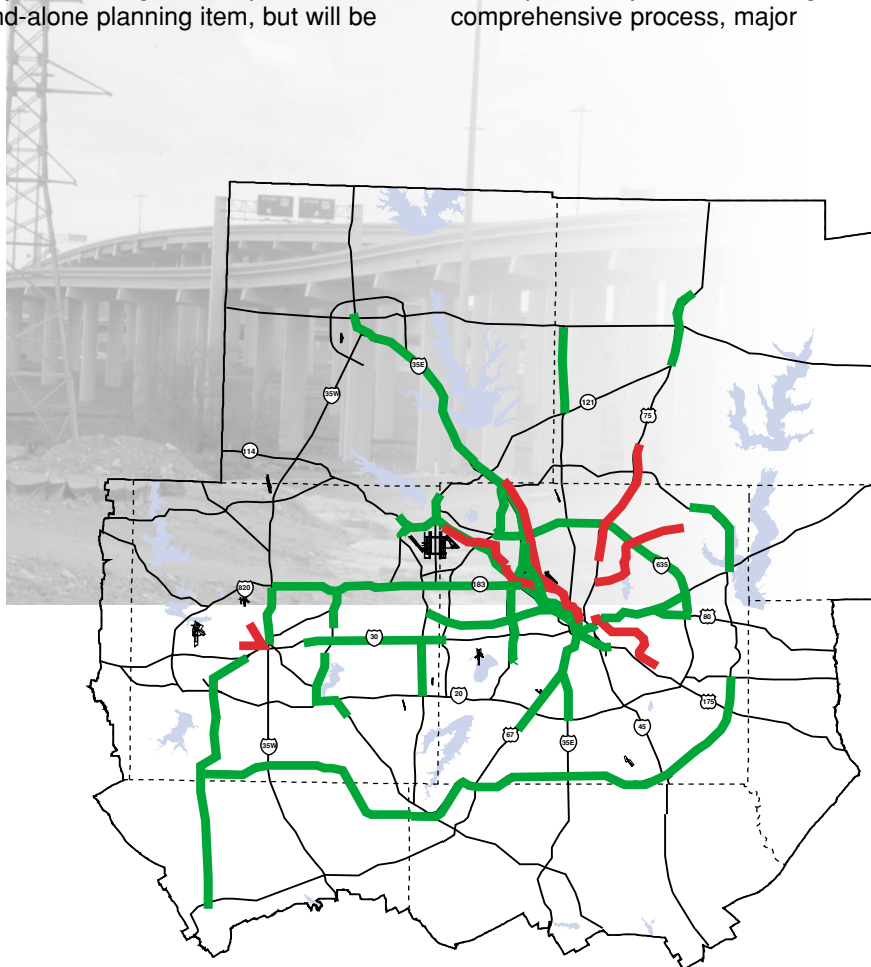
As part of the development of Mobility 2025 Update, corridors are evaluated from a regional, system-level perspective for major transportation improvements such as freeways, tollways, high occupancy vehicle lanes, and rail facilities. The Plan Update makes general recommendations in each corridor to meet the increasing demand on the roadway and transit systems. For each specific corridor recommended for improvement in the Plan Update, federal regulations developed under the Intermodal Surface Transportation Efficiency Act of 1991, and proposed under the Transportation Equity Act for the 21st Century, require that a comprehensive and detailed analysis be conducted. Under ISTEA, these analyses were called major investment studies. Under TEA-21, a major investment study will no longer be required as a stand-alone planning item, but will be

integrated into the metropolitan transportation planning process as a corridor refinement study. These corridor refinement studies serve as a bridge between the regional planning process and the more detailed environmental analysis and project design and engineering phases.

The goal of these studies is to achieve local consensus on a preferred alternative and investment strategy. This is accomplished through a comprehensive and aggressive agency and public involvement process. These studies include more than simply solving the mobility needs in the corridor, they also achieve additional goals by integrating local government land-use policies, neighborhood and community goals, environmental issues, and economic development objectives. Through this comprehensive process, major

transportation facilities can enhance a community's quality of life rather than detracting from it.

Several major investment studies have been completed under the ISTEA regulations. The recommendations from these studies are reflected in Mobility 2025 Update. There are also major investment studies which were underway at the time Mobility 2025 Update was developed. For those studies, the recommendations in the Plan Update reflect the latest information available for each corridor at the time the Plan Update was developed. As each study is completed, specific recommendations within each corridor may change. If this occurs, the new recommendations will be incorporated into Mobility 2025 Update or in the development of subsequent Plans, as appropriate.



## Preferred Major Investment Studies Alternatives

### Legend

- Mobility 2025 Update Freeways/Parkways
- Rail
- Roadway

The major investment studies on this map represent general corridor improvements as identified in Mobility 2025 Update. Recommendations for specific facility improvements are pending completion of each MIS.



# Sustainable Development

Mobility 2025 Update establishes sustainable development as a strategic approach to transportation planning, programming, and construction. Sustainable development leverages the land-use/transportation relationship to improve mobility, enhance air quality, and support economic growth in ways that utilize the existing and planned transportation system in an efficient manner.

By providing planning support for a diverse range of mobility options such as rail, automobiles, bicycling, transit, and walking, the Plan Update helps local governments present a range of development opportunities to the private sector. The Plan Update recognizes four categories of

sustainable development: the utilization of existing system capacity, the mixing/integration of land uses, increased rail mobility, and improved access management.

Overall, the objectives of these practices are to: respond to local initiatives for town centers, mixed-use growth centers, transit oriented developments, infill/brownfield



## Sustainable Development Categories

### Sample Activities

#### Strategic Urban Development

- Provide access to urban and older suburban areas with undeveloped land.
- Encourage sensitive intensification of existing neighborhoods through increased housing densities supported by a greater mix of compatible activities.
- Establish incentives to promote infill and brownfields development.
- Encourage development in the urban and suburban core.

#### Integrated Land-Use Planning/Urban Design

- Provide diverse housing types in balance with employment distribution.
- Reduce the segregation of land uses in appropriate areas (mixed-use development).
- Provide an equitable distribution of public social and cultural services and facilities.

#### Transit-Oriented Development

- Increase residential and employment densities near transit stations.
- Establish mixed-use zones around transit stations.
- Increase the number of cities belonging to a transportation authority.

#### Access Management

- Require shared access (driveways) and shared parking for new developments, expansions, or redevelopments.
- Provide access to major arterials or heavily traveled corridors via secondary roads (instead of access points directly on major arterials).
- Restrict left-turn conflicts on thoroughfares with a high volume of traffic.
- Limit signal spacing along major thoroughfares.
- Locate school zones away from major arterials.

developments, and pedestrian oriented projects; complement rail investments with coordinated investments in park-and-ride facilities and pedestrian and bicycle facilities; and promote economic development appropriately throughout the region while improving air quality and traffic congestion by reducing vehicle miles traveled per person.

Private developers and local governments are leading the way with a collection of existing sustainable development projects including: Addison Circle, Downtown Fort Worth, and the DART Light Rail Stations. In one example, current construction at the Mockingbird light rail station features developer sponsored pedestrian linkages to the adjacent station and retail office and multifamily areas. Mobility 2025 Update builds on these successes by recommending strategies to meet financial constraints, diversify mobility, and improve air quality regionwide.



# Ultra Low-Emitting Vehicles

The use of alternative fuels and ultra low-emitting vehicles are important to the United States and the Dallas-Fort Worth Metropolitan Area. It can lessen dependence on foreign products, create domestic jobs, and have a positive impact on air quality. Currently, there are 7,000 publicly and privately owned alternative fuel vehicles (AFVs) operating on the roadways of North Central Texas, which are powered by propane, natural gas, and electricity.

In the DFW Metropolitan Area, federal and State financial incentives have been available for several years to encourage fleets to adopt ultra low-emitting vehicle technologies. Transit agencies and public-sector fleets have benefited greatly from these incentives.

The recommendations outlined in Mobility 2025 are flexible and targeted toward taking advantage of available incentives, both current and future, to encourage the continued



advancement of vehicle technologies and equipment availability to fleets and for private use.

Between 1994 and 2001, more than \$5 million was used to pay a portion of the incremental cost of alternative fuel vehicles for public fleets, resulting in more than 3,000 light-duty AFVs being placed into public fleets during this time period. Area transit agencies also received financial assistance in building a total fleet of 300 alternative fuel buses in the region.

The DFW Metropolitan Area participates in the U.S. Department of Energy's Clean Cities Program. Since 1995, Dallas-Fort Worth Clean

Cities has been promoting the use of alternative fuels in the area. The organization hosts events, demonstrations of alternative fuel and advanced technology vehicles, and regularly scheduled informative meetings. Clean Cities members also work with national and Statewide coalitions to coordinate vehicle purchases, education and training, and infrastructure needs in order to support the growing industry.

The Ultra Low-Emitting Vehicles Program will continue to play an important role in the mobility and air quality considerations of the region. As existing technologies change and new technologies evolve, policies to capitalize on their benefits should be put in place.

## Recommendations

Encourage less reliance on petroleum fuels.

Facilitate the public/private sharing of refueling stations and the installation of new stations.

Consider feasibility of using electric vehicles in conjunction with transit facilities.

Facilitate the adoption of emerging advanced technologies.

Continue to fund the incremental costs of alternative fuel vehicles.

Expand funding opportunities for private fleets.

Begin to expose the general public to alternative fuel vehicles.

Continue to seek financial and non-financial incentives necessary to promote the purchase of ultra low-emitting vehicles.



# Elderly and Persons with Disabilities

The goal of the Elderly and Persons with Disabilities Program is to provide efficient, reliable, comprehensive, and coordinated transportation services to meet the special transportation needs of the elderly and persons with disabilities. Funding for the Program is available for metropolitan, small urban, and rural areas through federal, State, and local sources. This funding can be used for the purchase of replacement vehicles, new vehicles for service expansion, and auxiliary equipment to transport the elderly and persons with disabilities.

The Mobility 2025 Update financial plan includes \$80 million in funding for currently programmed or future Elderly and Persons with Disabilities projects. In accordance with State rules,

projects are selected annually by the TxDOT Dallas and Fort Worth District Offices. As the MPO for the Dallas-Fort Worth Metropolitan Area, the North Central Texas Council of Governments provides input as appropriate for the inclusion of projects in the Transportation Improvement Program (TIP).

Existing rural and urban transit districts and metropolitan transit authorities are the primary recipients of funds, for their respective service areas, under this Program. For those areas not currently served by transit providers, or in cases where the existing provider is unable to provide the service, TxDOT may choose an alternative primary recipient. Private, nonprofit organizations and associations are eligible to receive funds as secondary recipients. In addition, local public agencies approved by the State to coordinate transportation services, and any public agency that certifies that nonprofit organizations in the area are not readily available to carry out the services, may also receive funds as secondary recipients. Issues continue to be raised regarding the lack of transportation services for elderly and persons with disabilities. NCTCOG has assumed a leadership role in the efforts to improve and coordinate transportation services for the region's elderly and persons with disabilities. This should be accomplished through the program recommendations shown at left.

## Recommendations

Increased access should be provided to existing elderly and persons with disabilities services, where feasible.

New services and service expansions should be reviewed to identify and eliminate the duplication of services whenever possible.

All services should comply with the Americans with Disabilities Act and support federal guidelines.

New and existing services should be coordinated with Access to Jobs initiatives where feasible.

Regular need assessments are recommended in order to identify opportunities to guide the establishment of additional services and the provision of needed service refinements.

Additional funding sources for operational expenses and capital equipment should be identified.



# Financial Plan

One of the most important aspects of Mobility 2025 Update is the identification and analysis of the financial resources available to implement its recommendations. Not only is this financial analysis a sound planning practice, it is also required by federal law. TEA-21 requires that the Plan Update be constrained to available financial resources. The cost of Mobility 2025 Update is estimated at \$49 billion over the 24-year life of the Plan Update. Thirty seven percent, \$18.1 billion, of the Plan's financial resources is directed toward operation and maintenance of the system while \$30.9 billion is allocated across the various multimodal transportation system improvements based on need and eligible funding programs.

As part of the development of Mobility 2025 Update, the mobility needs for each program area based on the adopted goals and objectives were identified; then the costs were estimated and summed. An in-depth analysis of the historical and current transportation funding was carried out including investigation of the sources of funds, funding formulas, and the administrative processes that result in taxes and fees being collected and expanded for specific transportation improvements.

The primary sources of revenue for transportation maintenance, operation, and capital improvements include federal and State motor fuel taxes, State vehicle registration fees, dedicated transportation authority sales taxes, tollway revenue, and local government bond programs. The analysis revealed that if the rates associated with these revenues remain at their current levels, or status quo, there would not be sufficient funding to construct the recommendations of this Plan Update. This is particularly critical in the area of freeway and

thoroughfare construction, as the primary source of revenue for these improvements is motor fuel taxes. This source of revenue continues to be eroded by the diversion of funds to non-transportation purposes. The impacts of inflation, and improved vehicle efficiency resulting in less available revenue per mile driven by commuters also reduce this revenue. At risk is an estimated \$3.3 billion of needed funds if status quo conditions remain. While the Regional Transportation Council and other transportation partners have made significant strides in reducing the projected shortfall in recent years, additional efforts are needed to reduce the deficit even more.

Since the Plan Update is not tied to any specific revenue generation strategy such as gas tax increases or percentage of gas tax revenue returned to the State, it puts an increasing burden on the RTC to monitor the financial situation of the Plan Update on a regular basis and make adjustments accordingly. Because implementation is contingent upon the need for additional revenue, the RTC will continue to monitor State and federal legislative initiatives to ensure that funding is available to implement Mobility 2025 Update.

Metropolitan Transportation System Components	Cost (Millions/2001\$)
Operation and Maintenance	\$18,078
Congestion Mitigation Strategies	\$ 2,014
Bicycle and Pedestrian Facilities	\$ 960
Rail and Bus Transit System	\$ 8,653
HOV and Managed Facilities	\$ 2,115
Freeway and Tollway System	\$11,528
Regional Arterial and Local Thoroughfare System	\$ 5,677
<b>Total</b>	<b>\$49,025</b>

Dedicated local sales tax revenue combined with federal formula and discretionary funding and passenger fares are used to build and operate public transportation systems. The transit agencies prepare operating and financial plans to ensure continued system operation and expansion. These plans which assume continued growth in transit readership, transit fares, and sales tax revenue, were integrated into this effort.

## Cost-Saving Strategies

- Pursue Tollway, Congestion Pricing, and Managed Facilities
- Reduce Premature Maintenance Through Capital Assets Inventory
- Reduce Project Costs Through Value Engineering
- Stage-Construct Major Transportation Facilities
- Streamline Project Development Process
- Improve System Capacity Through Bottleneck Removal Program
- Pursue Innovative Cost-Sharing Arrangements



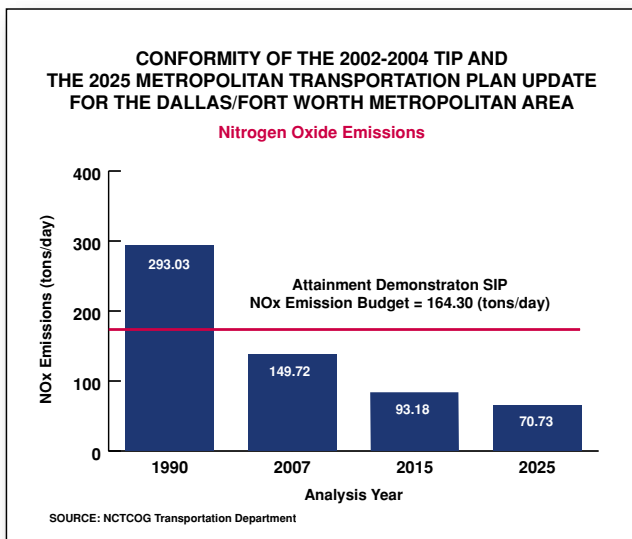
# Air Quality Conformity

Conformity is the mechanism in the Clean Air Act (CAA) that requires the Plan Update to be consistent with State and local air quality objectives and goals. Conformity also mandates that the Plan Update meet federal clean air standards through implementation strategies contained in the State Implementation Plan (SIP). To meet the requirements of the CAA and SIP, the Plan Update shall be consistent with established mobile emission budgets, contribute to mobile source emission reductions, and provide for the timely implementation of transportation control measures.

emissions must be below the established budgets identified in the SIP, and second, they must be below the base year 1990.

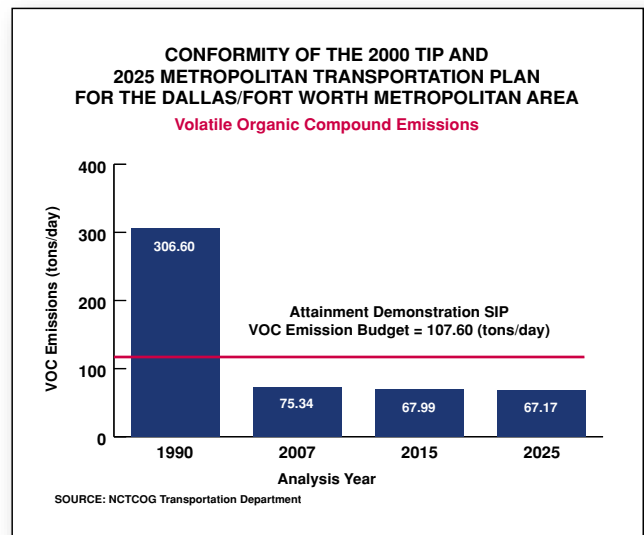
The result of the air quality conformity analysis conducted on the Plan Update indicates that the Plan Update is consistent with both the VOC and NOx emission budgets in the attainment demonstration SIP and contributes to emission reductions when comparing the analysis years 2007, 2015, and 2025 to 1990 emission estimates. This allows projects, programs, and policies contained in the Plan Update to move forward to advance planning and implementation within the region.

In order for the region to continue to thrive economically, efforts must be focused on the commitments to implement transportation improvements with positive air quality benefits. Failure to do so will jeopardize the region's quality of life, public health, environment, and the ability to implement the projects and programs in the Plan Update.



Transportation Control Measures (TCMs) are projects and programs specifically designed to reduce the region's congestion and improve air quality. Typical TCMs include intersection and signal improvements, freeway corridor management projects, HOV lanes, and travel demand reduction strategies, all of which are components of the Plan Update and inventoried in the Transportation Improvement Program.

Transportation strategies included in the Plan Update shall be subjected to an intensive air quality conformity review due to the serious ozone nonattainment status of the Dallas-Fort Worth Metropolitan Area. The air quality conformity analysis focuses on the principle ozone-causing pollutants of Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx). Two specific emission tests are conducted in the conformity analysis. First, future year VOC and NOx



# What is NCTCOG?

The North Central Texas Council of Governments (NCTCOG) is a voluntary association of local governments within the 16-county North Central Texas region. The agency was established in 1966 to assist local governments in planning for common needs, cooperating for mutual benefit, and coordinating for sound regional development. North Central Texas is a 16-county region with a population of 4.6 million and an area of approximately 12,800 square miles. NCTCOG has 232 member governments, including all 16 counties, 163 cities, 26 independent school districts, and 27 special districts.

Since 1974, NCTCOG has served as the Metropolitan Planning Organization (MPO) for transportation in the Dallas-Fort Worth Metropolitan Area. The Regional Transportation Council is the policy body for the Metropolitan Planning Organization. The Regional Transportation Council consists of 37 members, predominantly local elected officials, overseeing the regional transportation planning process. NCTCOG's Department of Transportation is responsible for support and staff assistance to the Regional Transportation Council and its technical committees, which comprise the MPO policy-making structure.

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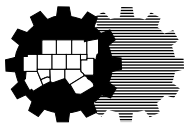
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