

6. Mobility Options: Active Transportation

Introduction

Active transportation, or bicycle and pedestrian modes, is an integral component of the Mobility 2045 Update. Active transportation offers numerous options to improve the existing transportation system efficiently and cost-effectively through a variety of systematic enhancements. Active transportation also includes micromobility; as defined by the Federal Highway Administration, micromobility is any human- or electric-powered transportation device, including bicycles, scooters, electric-assist bicycles (e-bikes), electric scooters (e-scooters), and other small, lightweight, wheeled conveyances.

Active transportation benefits all road users and creates more livable, safe, cost-efficient communities. The region's active transportation network is used as a mode of transportation by people of all ages and abilities to walk and bicycle. The network is not only for recreational use; it is also used for non-recreational trips and a variety of purposes such as traveling to work or school, and as first/last mile connections with transit services, including bus stops and rail stations. A current federal statute, United States Code, Title 23, Chapter 2, Section 217 (23 USC 217), mandates that *"bicycle transportation facilities and pedestrian walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities, except where bicycle and pedestrian use are not permitted."*

The USDOT (United States Department of Transportation) policy statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations signed on March 11, 2010 is *"to incorporate safe and convenient walking and bicycling facilities into transportation projects. Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. Because of the numerous individual and community benefits*

that walking and bicycling provide—including health, safety, environmental, transportation, and quality of life—transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes."

The USDOT policy emphasizes that active transportation accommodations should be given the same priority as other transportation modes. Walking and bicycling facilities should meet accessibility requirements and provide safe, convenient, and interconnected transportation networks that ensure transportation choices are available for people of all ages and abilities, especially children. With this stronger emphasis for multimodal transportation facilities by USDOT, the Texas Department of Transportation has also established guidance, updated on April 2, 2021, to proactively plan, design, and construct facilities to safely accommodate bicycles and pedestrians.

Mobility 2045 Update Supported 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.

Preserve and enhance the natural environment, improve air quality, and promote active lifestyles.

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.

Providing Traveler Choice

The following are considerations that should be given when planning and implementing active transportation facilities:

- All trips less than two miles in length in the urbanized area should have options available to be accomplished by nonmotorized, transit, or micromobility modes of travel.
- All roadways in the urbanized area should be designed and constructed to accommodate at least three modes of transportation.
- Roadway projects should implement context-sensitive design approaches compatible with the community and neighborhood in which the roadway is located.

Policies, Programs, and Projects

This section describes the policy framework that guides the implementation of the regionwide network of urban and rural active transportation facilities. This includes the integration of context-sensitive Complete Streets, context-sensitive solutions, and other relevant initiatives into roadway planning, design, implementation, and maintenance policies. This multimodal network vision of the Mobility 2045 Update will create a seamless and interconnected transportation network that safely accommodates users of all ages and abilities, including pedestrians, bicyclists, transit riders, and motorists.

Three policies form the foundation of the Mobility 2045 Update active transportation vision; these policies are supported by a variety of programs and projects. Each element plays an integral role in meeting shared regional goals and needs. Policies guide decision-making processes, programs compose the policy framework, and performance measures maintain accountability. See

the **Mobility Options** appendix for a complete listing of policies, programs, projects, and maps related to active transportation.

Policy BP3-001: Support the planning and design of a multimodal transportation network with seamless interconnected active transportation facilities that promotes walking and bicycling as equals with other transportation modes.

The active transportation network must be interconnected with transit services and integrated as part of Complete Streets to connect key destinations, including employment centers; education, medical, retail, and entertainment centers; and other destinations for daily activities. The Mobility 2045 Update promotes roadways in the urbanized area that are designed and constructed to accommodate at least three or more modes of transportation.

Program BP2-001: Active Transportation Planning and Design

- A. Multimodal Transportation Plans:** Encourage development of local pedestrian and bicycle plans, as well as modifications to local transportation plans and standards that provide for pedestrian accommodations, on-street bikeways, and the network of off-street trails.
- B. Context-Sensitive Complete Streets:** Facilitate and support the adoption of local policies and the implementation of context-sensitive Complete Streets projects with bicycle and pedestrian facilities as routine accommodations for new roadway construction and reconstruction projects.
- C. Context-Sensitive Design:** Incorporate bicycle and pedestrian modes in all transportation corridor studies, support the adoption of regional and local policies, and implement context-sensitive Complete Streets projects and roadway projects that are sensitive in design to the context of their surroundings.
- D. Corridor Studies:** Integrate bicycle and pedestrian mobility in all transportation corridor studies, incorporate bicycle and pedestrian modes in corridor studies, and support the funding

and construction of bicycle and pedestrian elements of final corridor studies.

- E. Active Transportation Safety Plans:** Implement the regional Pedestrian Safety Action Plan and develop a regional Bike Safety Action Plan.
- F. Americans with Disabilities Act Transition Plans:** Encourage local agencies to adopt and implement Americans with Disabilities Act transition plans.
- G. Local Regulations:** Encourage local jurisdictions to adopt ordinances, zoning standards, engineering standards, and guidelines that accommodate bicycle and pedestrian modes of travel through such means as context-sensitive Complete Streets policies, thoroughfare technical specifications, right-of-way and easement preservation, bicycle parking ordinances, bicycle passing ordinances, and end-of-trip facilities.
- H. Data Collection and Analysis:** Monitor and evaluate the North Central Texas region's bicycling and walking efforts by collecting bicycle and pedestrian count data, analyzing bicycle and pedestrian crash data, conducting regional nonmotorized travel surveys, developing an appropriate methodology indicating active transportation's modal share goal, and publishing findings.
- I. Technical Support/Resources/Research:** Collect relevant research materials regarding bicycle and pedestrian transportation to utilize in regional initiatives and provide as resources to local governments and area stakeholders.

Policy BP3-002: Implement pedestrian and bicycle facilities that meet accessibility requirements and provide safe, convenient, and interconnected transportation for people of all ages and abilities.

The Mobility 2045 Update promotes bicycle and pedestrian projects that connect multiple jurisdictions and expand the regional network by improving coordination, connectivity, and continuity between counties and communities. To realize the potential of active

transportation, special attention must be paid to the current barriers and safety issues the region is experiencing. These include:

- An incomplete network of bicycle and pedestrian facilities, including those that serve environmental justice and transit-dependent populations.
- High rates of pedestrian and bicycle crashes and fatalities involving motor vehicles.
- Limited funding for safe routes to school projects.
- Infrastructure that is not compliant with Americans with Disabilities Act.
- Significant barriers to safe active transportation travel; these barriers include freeways, major streets with high traffic volumes and speeds, and waterways.

Improving safety is a top priority for USDOT, and the Mobility 2045 Update is committed to reducing fatalities and serious injuries on the transportation network throughout North Central Texas.

Program BP2-002: Active Transportation Network Implementation

- A. Complete the Regional Active Transportation Network:** Continue the Regional Transportation Council Local Funding Program initiatives and Sustainable Development Funding Programs. The Local Funding Program initiatives include the Local Air Quality Transportation Alternatives Program. Sustainable Development Funding Programs direct funds to local governments to improve, expand, and complete the bicycle and pedestrian facilities network and related programs throughout the region. Implementation priorities include:
 - 1. Close Gaps and Improve Connectivity in the Regional Veloweb, On-Street Bikeway Network, and Pedestrian Network:** Eliminate major gaps in the regional network and complete connections to address major barriers such as freeways, railroads, and waterways.

2. **Linkages to Transit and Major Destinations and Areas with Highest Demand:** Support and complete the development of pedestrian and bicycle facilities that provide access from neighborhoods to public transportation services, education facilities, employment centers, medical, retail, and other destinations.
 3. **Environmental Justice Areas and Transit-Dependent Populations:** Improve accommodations for pedestrians and bicyclists in environmental justice areas and improve connections for transit-dependent populations.
 4. **Safety Improvements:** Implement Regional Pedestrian and Bike Safety Plans and related projects that improve accommodations and safety for pedestrians and bicyclists, with special attention given to vulnerable road users and disadvantaged communities.
 5. **Safe Routes to School:** Coordinate with Independent School Districts, municipalities, public safety officials, and other agencies throughout the region to ensure safe and accessible walking and bicycling corridors to education facilities.
- B. Safety Improvements:** Support efforts to reduce crashes and fatalities between motor vehicles and pedestrians and bicyclists, including the implementation of Proven Safety Countermeasures outlined by the Federal Highway Administration Office of Safety. Prioritize infrastructure design techniques and safety countermeasures projects in areas with high rates of pedestrian and bicycle crashes and fatalities.
- C. Americans with Disabilities Act Compliance:** Support efforts to identify American with Disabilities Act accessibility needs and incorporate improvements into the overall transportation network.

Policy BP3-003: Support programs and activities that promote pedestrian and bicycle safety, health, and education.

Walking and bicycling are legitimate forms of transportation that have the potential to positively impact the region by shifting travel modes, resulting in reduced congestion and improved air quality and public health. The Mobility 2045 Update promotes enhanced safety for active travel by increasing education and training opportunities for cyclists, pedestrians, motorists, and professionals who are designing and implementing roadway facilities, implementing safety infrastructure projects, and promoting enforcement of traffic laws to reduce bicycle and pedestrian-related conflicts.

Program BP2-003: Active Transportation Education and Outreach

- A. Safety Education Programs and Campaigns:** Support and create programs and campaigns that educate bicyclists, pedestrians, and the general public about bicycle operation, bicyclists' and pedestrians' rights and responsibilities, and lawful interactions between motorists, bicyclists, and pedestrians to increase safety for all road users. Support programs aimed at increasing bicycle and walking trips by providing incentives, recognition, or services that make bicycling and walking more convenient transportation modes.
- B. Healthy and Livable Communities:** Create healthier and more livable communities by encouraging the use of bicycle and pedestrian facilities for work and non-work trips, and for daily physical activity.
- C. Enforcement:** Encourage enforcement efforts of traffic laws and target unsafe bicyclist, pedestrian, and motorist behaviors to improve safety and reduce collisions and conflicts between motorists, bicyclists, and pedestrians.
- D. Technical Training and Education:** Provide pertinent training to transportation-related professionals.
- E. Mapping Facilities and Plans:** Maintain a regional database and provide information regarding existing and planned active transportation facilities and related amenities throughout the region.

Active Transportation Context in North Central Texas

Many cities and counties in the region have developed and adopted bicycle master plans, trail master plans, or a combination of both. Various communities are also developing plans for local pedestrian networks and programs to provide safe routes to schools. In addition, numerous cities and transportation agencies have adopted local policies for bicycle accommodations to encourage bicycling as a form of transportation. The number of locally adopted community bicycle and trail master plans in the region grows each year. These documents are used in the development of the Mobility 2045 Update to ensure regional connectivity and continuity.

The types of pedestrian and bicycle facilities available differ from community to community, and their conditions vary based on the context and density of the surrounding area where they are located. These projects provide for nonmotorized modes of transportation, and enhance travel and tourism throughout the region, including access to destinations of statewide significance such as the Fort Worth Stockyards National Historic District, the Arlington Entertainment District, Fair Park in Dallas, and others.

In urban areas, the active transportation network typically includes a wide mix of interconnected sidewalks, off-street shared-use paths, and on-street bikeways, including designated or separated bike lanes and cycle tracks and marked shared lanes. The network concentration is the greatest in higher density urban areas and where there are high volumes of users requiring connections to transit and major destinations. These areas also have a significant number of short trips that can be achieved by walking, bicycling, and micromobility devices.

In suburban areas, the active transportation network typically includes similar facilities to those in urban areas. However, the overall network and mix of the active transportation network may

vary from urban areas due to differences in the physical design and density of land uses and the opportunities for short walking, biking, and micromobility trips.

In rural unincorporated areas, the active transportation network may consist of signed wide shoulders on roads for safe bicycle travel between rural towns.

In order to support regional goals related to mobility, land use, the environment, the economy, and public health, the Mobility 2045 Update recognizes the active transportation network in the region cannot be treated as stand-alone facilities. Sidewalks, off-street shared-use paths, and on-street bikeways should be integrated as part of context-sensitive Complete Streets, and they should be interconnected with transit services and other modes of transportation such as micromobility devices. This seamless multimodal transportation network can connect housing and key destinations, including employment centers, education, medical, retail and entertainment centers, and others. Much of the region's 2045 active transportation network of pedestrian facilities and on-street bikeways will be implemented through context-sensitive Complete Streets designed and operated to enable safe access and travel for users of all ages and abilities.



The Mobility 2045 Update supports the development of local context-sensitive Complete Streets policies and the implementation of context-sensitive Complete Streets infrastructure on both new and reconstructed streets; such design will safely accommodate all users in the region. Additional information on context-sensitive Complete Streets can be found in the **Sustainable Development** section of the

Operational Efficiency chapter, the **Healthy Communities** section of the **Environmental Considerations** chapter, and in the **Roadway** section of this chapter. According to the 2017 National Household Travel Survey for households located in urban areas, 45 percent of all trips were three miles or less in distance, and 18 percent of all trips were one mile or less.

These trips are ideal for biking, walking, transit, micromobility, or a combination of these modes of travel. By encouraging investment in facilities that support these forms of transportation, the region has the opportunity to shift short trips to walking and bicycling modes, resulting in more transportation choices and improved air quality. Therefore, the Mobility 2045 Update aims to provide options for nonmotorized or transit modes of travel for all trips in the urbanized area that are less than two miles in distance.

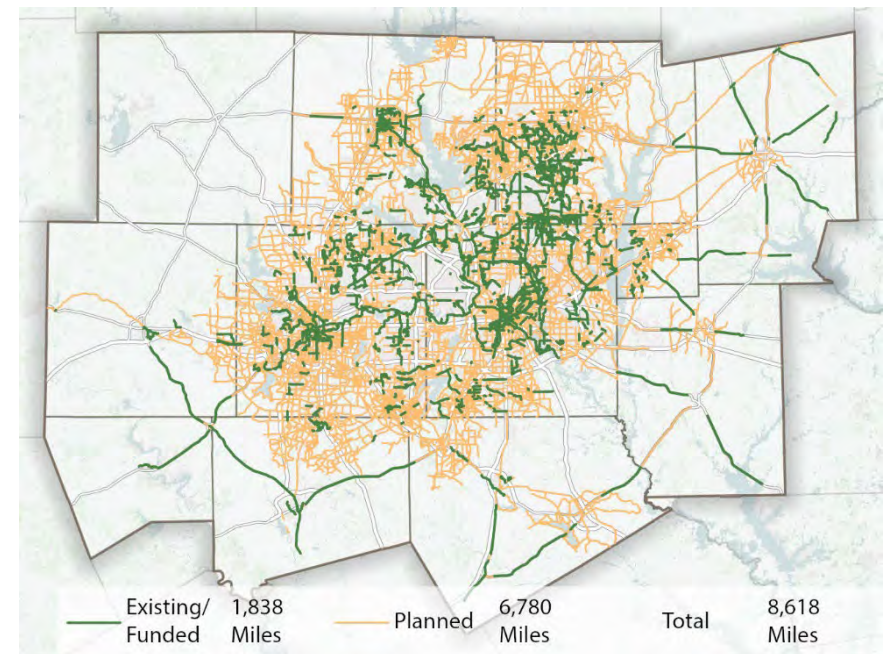
Combined Regional Paths and Bikeway Network

The active transportation network in the region consists of regional shared-use paths (Regional Veloweb), supporting community shared-use paths, and the on-street bikeway network (including on-street wide shoulders in rural areas). This network is reflected in the map in **Exhibit 6-13** and the table in **Exhibit 6-14**. This network plays a key role in supporting the Mobility 2045 Update and the implementation



of the multimodal context-sensitive Complete Streets and transit infrastructure that safely accommodate all travelers throughout the region.

Exhibit 6-13: Combined Regional Veloweb, Community Paths, and On-Street Bikeway Network



- The Regional Veloweb and Community Shared-Use Path network does not include recreational paths/loops, private paths, equestrian or nature trails, or wide sidewalks less than 10 feet in width.
- On-street bikeways in the urbanized area include separated or protected bike lanes/cycle tracks, bike lanes, marked shared lanes, and marked bicycle boulevards. On-street bikeways in the urbanized area do not include signed bike “routes,” signed “share the road,” unmarked wide outside lanes, or signed wide shoulders.
- The use of wide shoulders is included on various roadways linking rural communities outside of the urbanized area.
- Facility recommendations indicate transportation need. Corridor-specific alignment, design, and operational characteristics for the network will be determined through ongoing project development.
- Regional Veloweb and Community Path facility mileages are based on linear miles. On-street bikeway facility mileage is based on centerline miles.

Exhibit 6-14: Combined Regional Veloweb, Community Shared-Use Paths, and On-Street Bikeways Network Miles by Facility Status
(February 2022)

Facility Type	Miles
Regional Veloweb Paths¹	
Regional Veloweb, Existing	538
Regional Veloweb, Funded	131
Regional Veloweb, Planned	1,496
Total Regional Veloweb Paths	2,165
Community Shared-Use Paths¹	
Community Shared-Use Paths, Existing	470
Community Shared-Use Paths, Funded	94
Community Shared-Use Paths, Planned	3,135
Total Community Paths	3,699
Total Regional Veloweb and Community Paths	5,864
On-Street Bikeways²	
On-Street Bikeways, Existing	276
On-Street Bikeways, Funded	82
On-Street Bikeways, Planned	2,051
Total On-Street Bikeways (Urbanized Area)	2,409
On-Street Wide Shoulders, Existing (rural areas between communities)	247
On-Street Wide Shoulders, Planned (rural areas between communities)	98
Total On-Street Wide Shoulders (Rural Area)	345
Total On-Street Bikeways	2,754
Total All Facilities	8,618

¹ The Regional Veloweb and Community Shared-Use Path network does not include recreational paths/loops, private paths, equestrian or nature trails, or wide sidewalks less than 10 feet in width. Regional Veloweb and Community Shared-Use Paths facility mileages are based on linear miles.

² On-street bikeways in the urbanized area include separated or protected bike lanes/cycle tracks, bike lanes, marked shared lanes, and marked bicycle boulevards. On-street bikeways in the urbanized area do not include signed bike “routes,” signed “share the road,” unmarked wide outside lanes, or signed wide shoulders. The use of wide shoulders is included on various roadways linking rural communities outside of the urbanized area. On-street bikeways facility mileage is based on centerline miles.

The Mobility 2045 Update includes extensive research on and the compilation of the locally adopted master plans for active transportation infrastructure throughout the region. By working with local and regional stakeholders, the plan prioritizes corridors for improvement as represented by the Regional Veloweb, areas of highest demand for active transportation travel, and other policies for active transportation infrastructure investment and safety. The Mobility 2045 Update represents the compilation of 71 locally adopted plans with shared-use paths (trails) and 37 locally adopted plans that include on-street bikeway facilities. Various new or updated plans are adopted each year throughout the region, and the North Central Texas Council of Governments regularly coordinates with local jurisdictions to update a database of existing, funded, and planned active transportation facilities.

Recommended Off-Street Network: The Regional Veloweb

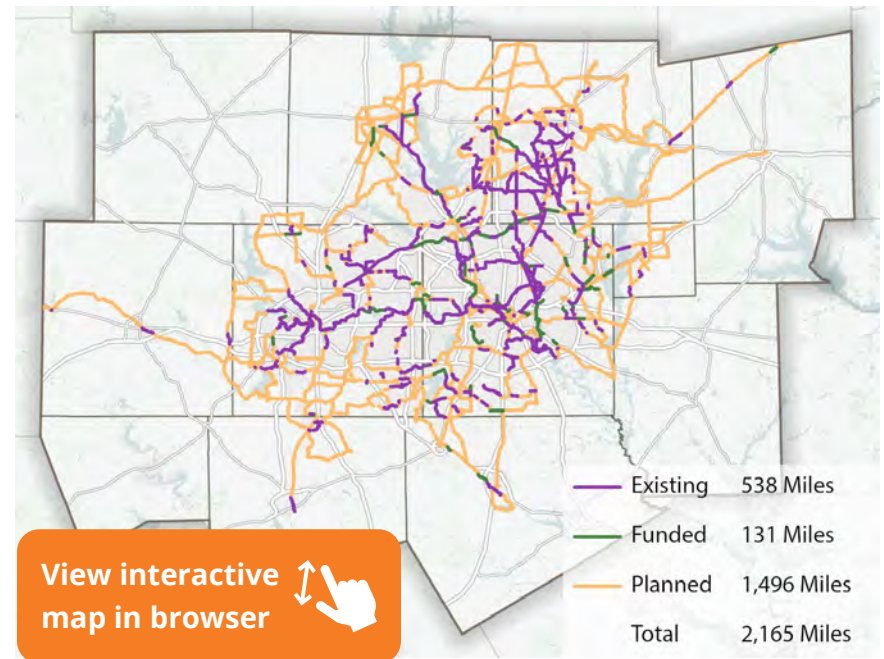
The Regional Veloweb is a network of off-street shared-use paths (trails) designed for non-recreational trip purposes by bicyclists, pedestrians, and other nonmotorized forms of transportation. The Regional Veloweb serves as the regional expressway network for active transportation, and it extends the reach of the region’s roadway and passenger rail transit network for nonmotorized transportation. The Regional Veloweb has planned connections in 10 counties and 105 cities in North Central Texas. Alignments were determined through the cooperative efforts of local governments and North Central Texas Council of Governments staff by:

- Identifying existing and funded facilities
- Reviewing locally planned bicycle and pedestrian facilities
- Locating routes that would provide air quality benefits and access to transit stations and major destinations
- Identifying corridors that provide the greatest potential for regional connectivity

- Identifying routes that provide opportunities to enhance travel and tourism

The Regional Veloweb is reflected in **Exhibit 6-15** and includes approximately 2,165 miles of shared-use path facilities in various stages of development. These shared-use paths are expected to be consistent with the recommendations and design guidance set forth by AASHTO's (American Association of State Highway and Transportation Officials) *Guide for the Development of Bicycle Facilities, 4th edition*. The primary design considerations of Regional Veloweb paths typically include wider cross sections (minimum 12-foot width) and grade-separated crossings of roadways with significant traffic flows. They may have wider 16- to 24-foot sections or separated facilities for pedestrians and bicyclists in areas experiencing high-peak user volumes due to the proximity to transit stations, employment and education centers, and/or other major venues. Design considerations for regional and community pathways are described in more detail in **Exhibit 6-16**. The Regional Veloweb network incorporates certain alignments that are reflected as state-wide priorities in the Texas Department of Transportation statewide Bicycle Tourism Trails Study. The statewide network is comprised of cross-state spines, connecting spurs, and regional routes which extend throughout the North Central Texas region. As such, these corridors are prioritized in the plan for implementation. These alignments are reflected in the **Mobility Options** appendix.

Exhibit 6-15: The Regional Veloweb



Facility recommendations indicate transportation need. Corridor-specific alignment, design, and operational characteristics for the Regional Veloweb network will be determined through ongoing project development.

**Exhibit 6-16: Regional Veloweb 2045 Pathways
Classifications and Primary Design Considerations**

Regional Pathways 2045 Primary Design Considerations	Community Pathways Primary Design Considerations
Consistent with the guidance set forth by AASHTO for the development of bicycle facilities.	Consistent with the guidance set forth by AASHTO for the development of bicycle facilities.
<u>Minimum width:</u> 12 to 14 feet (typical) with 16- to 24-foot-wide sections or separated facilities for pedestrians and bicyclists in areas with high-peak user volumes.	<u>Minimum width:</u> 10 to 14 feet (typical) with wider sections where warranted due to high-peak volumes.
Typically, independent right-of-way corridors such as greenways, along waterways, freeways, active or abandoned rail lines, utility rights-of-way, and unused rights-of-way.	May include more alignments adjacent to local collector and arterial roadways, and through neighborhoods and areas where right-of-way is more constrained and user volumes are lower.
Continuous linear corridors that provide long-distance connections through cities and across counties; provide connections to major destinations, including transit stations, employment and education centers, and/or other major activity venues with high volumes of users.	Corridors generally shorter in length and may terminate within a community, may supplement adjacent on-street bikeways along roadways with higher traffic speeds and volumes not suitable for less experienced bicyclists, and may provide short connections between on-street bikeways and neighborhoods.
Grade-separated crossing of roadways with significant traffic flows. Few, if any, driveway crossings and signalized or stop sign intersections.	May include more at-grade crossings of roadways with signalized or stop sign intersections while minimizing any conflicts with motor vehicles and associated operational and safety issues.
Supported by a network of local community paths, sidewalks, and on-street bikeways that provide connections to local neighborhood destinations.	Serves as an extension of the regional pathway network by providing connections to local neighborhood destinations.
Constructed with a long-lasting impervious surface.	Constructed with a long-lasting impervious surface.

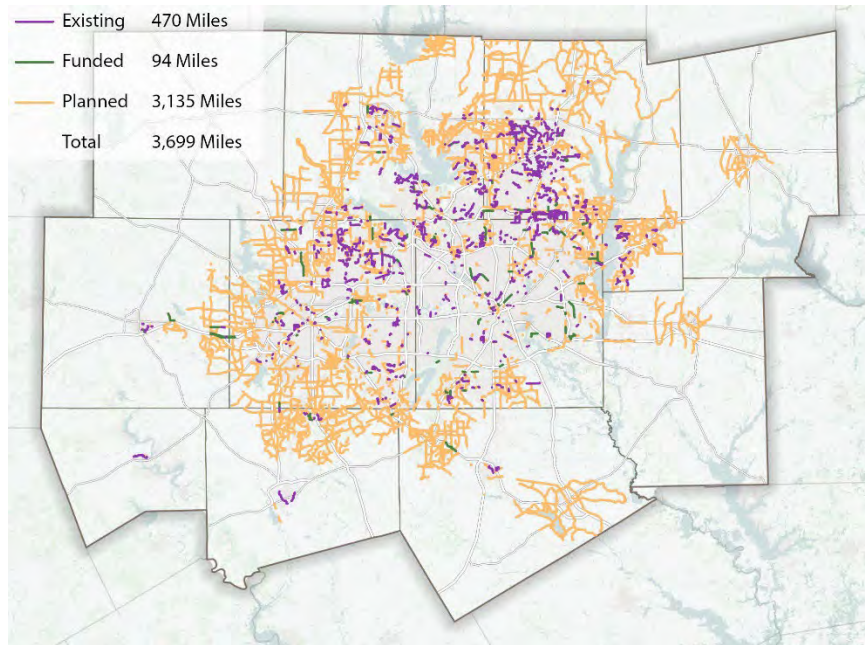
Off-Street Network: Community Shared-Use Paths

Community shared-use path facilities support the Regional Veloweb and help extend the reach of the regional network by connecting it to local and neighborhood destinations. Approximately 3,699 miles of these paths, shown in the map in **Exhibit 6-17**, are in various stages of development. These facilities are also expected to be consistent with the recommendations and guidance set forth by AASHTO's *Guide for the Development of Bicycle Facilities, 4th edition*. This network of facilities does not include recreational park loops, private paths, equestrian or nature trails, or wide sidewalks less than 10 feet in width. The Mobility 2045 Update forecasts that a portion of the network of community shared-use paths will be implemented. The paths that will be constructed are primarily located in corridors that serve as extensions of the Regional Veloweb and provide connections to transit facilities and other local major destinations. While not fully funded by the Mobility 2045 Update, community shared-use paths provide important connections within communities and will be implemented as funding is available.

Regional On-Street Bikeway Network

On-street bikeways facilitate safe and convenient travel for bicyclists, and they serve as extensions of the Regional Veloweb and community shared-use path network by providing nonmotorized travel connections between housing, employment, major destinations, and transit facilities. The existing and planned on-street bikeway network, shown in **Exhibit 6-18**, provides the densest network of bicycle facilities in a growing number of communities throughout the region. Currently more than 37 locally adopted plans include on-street bikeway facilities representing more than 2,754 linear miles in various stages of development.

Exhibit 6-17: Community Shared-Use Paths

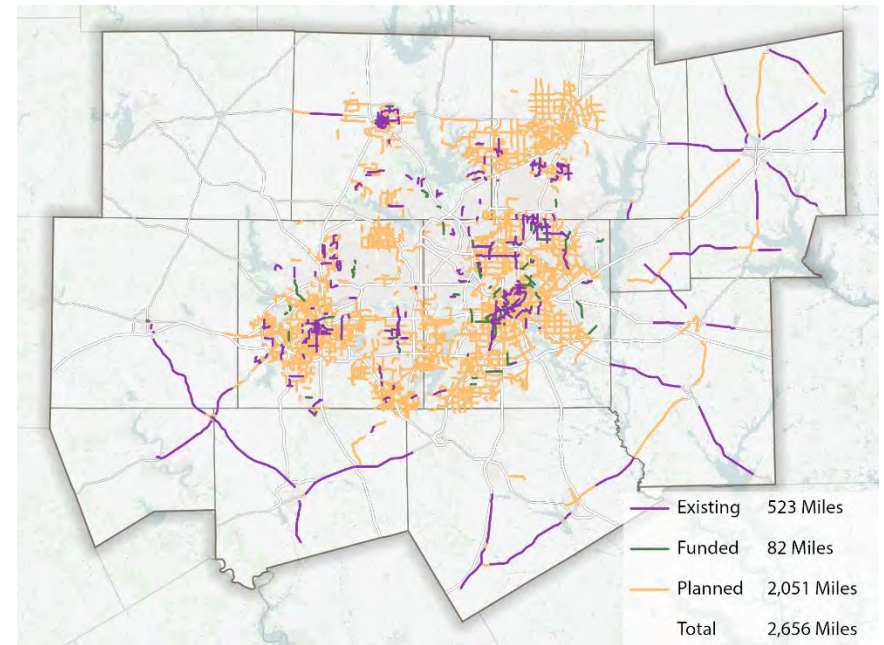


- Community Shared-Use Paths supplement the Regional Veloweb network. These paths do not include recreational paths/loops, private paths, equestrian or nature trails, or wide sidewalks less than 10 feet in width.
- Facility recommendations indicate transportation need. Corridor-specific alignment, design, and operational characteristics will be determined through ongoing project development.
- Community Path facility mileages are based on linear miles.

Consistent with guidance from AASHTO, National Association of City Transportation Officials, and the Federal Highway Administration’s *Separated Bike Lane Planning and Design Guide*, the type and design of on-street bikeways can vary based on the community and context in which they are located. Bikeways in urban and suburban areas of the region are recommended to include the following:

- Separated or protected bike lanes/cycle tracks
- Bike lanes
- Marked shared lanes
- Marked bicycle boulevards

Exhibit 6-18: On-Street Bikeway Network



- On-street bikeways in the urbanized area include separated or protected bike lanes/cycle tracks, bike lanes, marked shared lanes, and marked bicycle boulevards. On-street bikeways in the urbanized area do not include signed bike “routes,” signed “share the road,” unmarked wide outside lanes, or signed wide shoulders.
- The use of wide shoulders is included on various roadways linking rural communities outside of the urbanized area.
- Facility recommendations indicate transportation need. Corridor-specific alignment, design, and operational characteristics for the network will be determined through ongoing project development.
- On-street bikeway facility mileage is based on centerline miles.

Communities may also provide on-street bicycle accommodations that include signed bike routes and signed shared roadways without designated bikeway pavement markings, including wide outside lanes. However, these facilities are not represented in the Mobility 2045 Update. Bikeways between communities in rural unincorporated areas of the region generally consist of paved shoulders, particularly on roadways with higher speeds or traffic

volumes. Paved shoulders in these rural areas provide opportunities for travel between small communities.

Pedestrian Network

Pedestrian facilities must accommodate a diverse group of travelers of all ages and abilities, including people who walk, jog, use wheelchairs or walkers, or push strollers. Pedestrians tend to be the most vulnerable road users; therefore, pedestrian facilities should be designed and implemented to increase their safety and effectiveness.

The pedestrian network provides a primary mode of travel for short trips and it supports other transportation modes. The network of pedestrian facilities should be complete, direct, safe, and enjoyable to use. This can be accomplished by addressing the continuity of the sidewalk network, the streetscape, and the physical context in which the sidewalk is located.

Planning for the pedestrian network requires similar consideration and analysis as planning for roadways. The pedestrian network enhances economic development by connecting places where people like to live and visit, and it improves safety by supporting safe routes to school. When fully developed, the pedestrian network should provide safe links between destinations such as schools, employment, and transit facilities. Programs that invest in this network should prioritize improvements that connect to major destinations, improve safety, and help promote community livability and a healthy lifestyle.

The primary considerations of the pedestrian network include:

- Completing gaps in the sidewalk network
- Completing first/last mile connections to transit services
- Providing safe routes, including crossings of busy streets and major barriers, that are compliant with the Americans with Disabilities Act
- Providing context-sensitive streetscapes

Americans with Disabilities Act and Transition Plans

The ADA (Americans with Disabilities Act) of 1990 is a civil rights statute that prohibits discrimination against people with disabilities. Title II of the ADA addresses public services and the accessibility of public transportation to people with disabilities. After the ADA became effective, public facilities were required to be designed and constructed to be accessible by people with disabilities. Failing to design and construct facilities accessible by people with disabilities constitutes discrimination and is prohibited by law. Title II of the ADA applies to facilities built after 1990, pre-existing facilities, and any organization with 50 or more employees.

State and local governments are required to perform self-evaluations of current facilities and develop a transition plan to address deficiencies by building new projects and by altering existing projects, including performing reconstruction, major rehabilitation, widening, resurfacing, signal installation, and upgrades. This affects pedestrian facilities in the public right-of-way, including sidewalks, curb ramps, and warnings detectable by a range of users. In the case of noncompliance for state or local governments, the Federal Highway Administration will seek a voluntary compliance agreement. If an agreement cannot be met, the Federal Highway Administration will send the case to the Attorney General for action.

The North Central Texas Council of Governments is helping local jurisdictions comply with ADA through policy, funding, and training for officials.

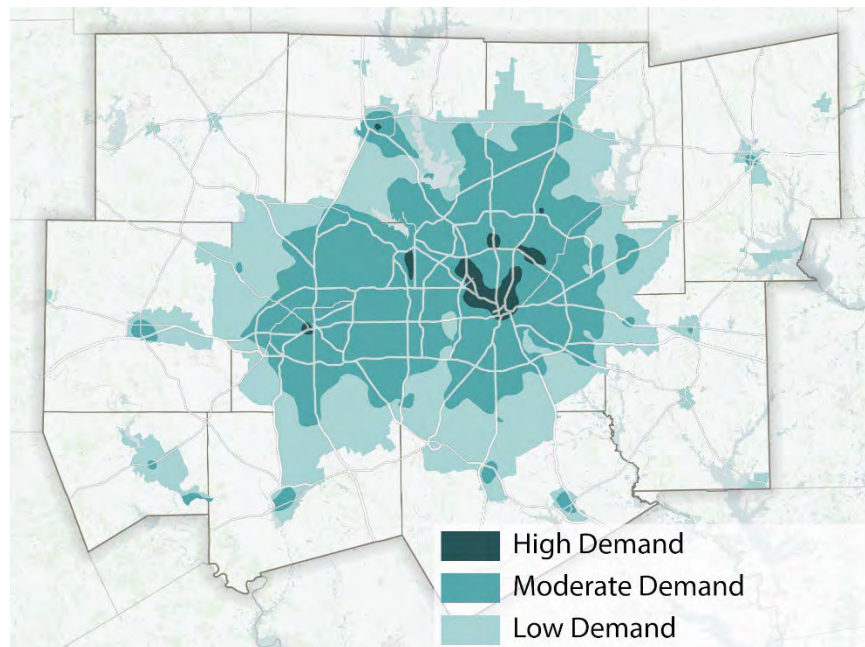
Demand Zones for Walking and Bicycling Travel

Demand for pedestrian and bikeway facilities varies across the region, with multiple factors affecting where people can and will walk and bicycle as a means of travel. To identify the demand for walking and bicycling travel, a variety of criteria were used to identify geographic areas of the region with the greatest demand to walk or bicycle for transportation. Those criteria include:

- Employment and population density
- Density of short trips
- Density of low-income populations
- Density of zero-car households
- Areas with high vehicle congestion

The general areas represented in **Exhibit 6-19** are expected to have the highest demand for walking and bicycling travel, thus also have the greatest demand for active transportation infrastructure. As such, these areas with the highest demand should be prioritized for future infrastructure investment, particularly those suited for an urban environment such as on-street bicycle accommodations and sidewalks.

Exhibit 6-19: Demand Zones for Walking and Bicycling Travel



Demand Zones depict areas with greater demand for walking and bicycling infrastructure. Areas shown as high demand are not project recommendations. These areas have high population/employment density, density of short trips, density of low-income populations, density of zero-car households, and vehicle congestion. As such, these areas with the highest demand should be prioritized for future infrastructure investment, particularly those suited for an urban environment such as on-street bicycle accommodations and sidewalks.

Priority Areas to Improve Facilities and Accessibility

The Mobility 2045 Update recommends prioritizing improvements to active transportation facilities to close gaps within the larger network, increase the use of facilities, improve safety and the level of comfort for pedestrians and bicyclists, and create easier access to destinations in areas with the highest demand for walking and bicycling trips.

In addition to the criteria used in developing the Demand Zones for walking and bicycling travel, prioritization of pedestrian and bicycle facilities improvements should be based on:

- Access to public transportation facilities (transit stations and bus stops)
- Destination density (e.g., mixed-use/transit-oriented development areas, employment centers, central business districts, education institutions, neighborhood services, community centers)
- Safe crossings of existing travel obstacles (e.g., major roadways, Interstate interchanges, railroads, and bodies of water)
- Neighborhoods with transit-dependent populations
- Areas with pedestrian and bicycle safety concerns and high rates of crashes
- Routes of statewide and regional significance identified by the Texas Department of Transportation Bicycle Tourism Trails Study

These destinations and routes are places that generate higher than average pedestrian and bicycle traffic. Prioritizing improvements in these areas and corridors will create the greatest benefit for people who travel by walking or bicycling. Other factors to consider when prioritizing projects include community support, cost/benefit analysis, sharing of construction costs, and geographic balance to ensure facilities are evenly constructed throughout the region.

Map Your Experience: Accessibility Assessment

NCTCOG (North Central Texas Council of Governments) has established the Map Your Experience tool in order to receive public comments on the issues affecting travelers in our region. Using these comments, NCTCOG has identified several areas of concern for improving transportation throughout the region. This section highlights findings from feedback submitted through the Map Your Experience tool related to accessibility of the bicycle/pedestrian system.

Accessibility Definition

Accessibility is traditionally defined as the ability of mobility-impaired populations (such as persons with disabilities and the elderly) to reach destinations. NCTCOG has taken a broader definition for the purposes of this section. Using guidance from the Transportation Research Board’s report NCHRP 08-121, accessibility is defined as “the ease with which people can reach desired destinations.” Accessibility can vary by mode; a convenient five-minute drive can be a difficult and dangerous 20-minute walk. Studying accessibility allows transportation planners and providers to understand how travelers utilize transportation facilities and identify deficiencies in the transportation network across various modes.

Furthermore, the report defines multiple dimensions by which accessibility can be assessed. One dimension is impedance, or “the ease or difficulty of traveling through space.” Traditional analyses typically consider travel times or distances, but the report includes factors such as sidewalk width, curb cuts, street lighting, and parking availability. Perceptions of safety and security are important factors but can be more difficult to quantify. Put simply, measurements of impedance can help answer the question, “How easy is it to get from A to B via different modes of transportation?”

Assessment

Using responses to the Map Your Experience tool between May 2020 and January 2022, NCTCOG has compiled qualitative feedback from residents of the region in order to identify areas of improvement. Comments in the tool are entered in three different maps: a Bike/Ped (bicycle/pedestrian) map, a Roadway map, and a Transit map. Each comment may be assigned to one of several categories classifying the type of comment such as bike/ped safety, a need for crosswalks, roadway traffic signal timing, or transit frequency. NCTCOG reviewed each comment to determine if it pertained to accessibility concerns and totaled them across the various categories, locations, and map types.

It should be noted that while this is not a quantitative, representative sample, the information gathered from the Map Your Experience tool helps NCTCOG and members of the Regional Transportation Council identify patterns and hotspots for accessibility issues reported by users of the transportation network—those with intimate knowledge of their travel experiences and the difficulties they face. Thus, these results should be interpreted as guidance for further analysis and research, focusing on accessibility issues in North Central Texas.

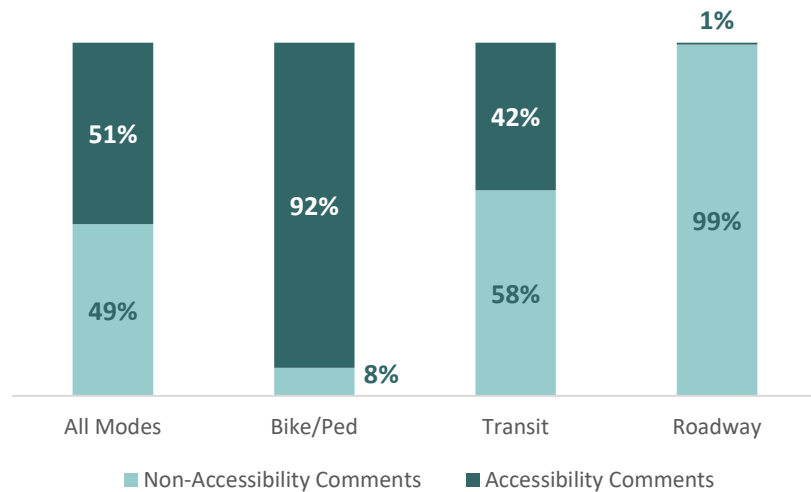
Findings

	Total Comments*	Total Accessibility Issues	% of Total Comments	% of Accessibility Comments
All Modes	531	273	51%	-
Bike/Ped	265	244	92%	89%
Transit	67	28	42%	10%
Roadway	199	1	1%	0%

*Includes responses to parent comments; total comments on dashboard may be lower due to exclusion of response comments in that platform

For total comments overall, 92 percent of bike/ped comments raised accessibility concerns; 42 percent of transit comments addressed accessibility, and 0.4 percent of roadway comments were about accessibility, as shown in **Exhibit 6-20**. Of all reported accessibility issues, 89 percent were related to the bike/ped mode of transportation, while 10 percent were for transit and 0.5 percent were for roadway. Overall, out of 531 comments (including both original comments and responses to comments) received in the Map Your Experience tool, 51 percent were identified as accessibility concerns.

Exhibit 6-20: Percentage of Accessibility Comments by Mode



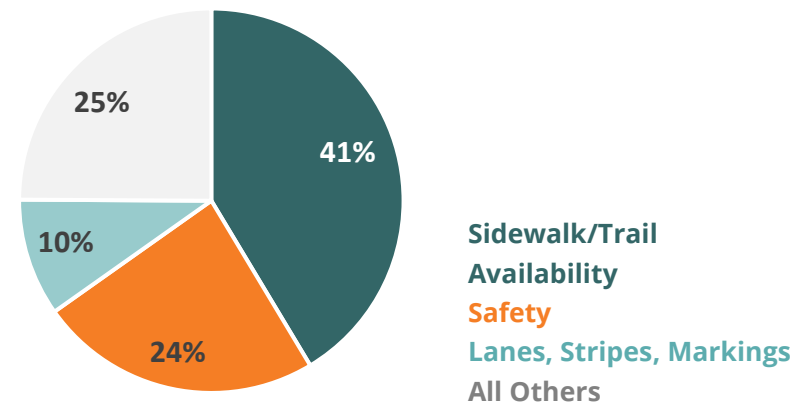
It should be noted that the tally for roadway-related accessibility issues is low because traffic congestion was not counted as an impedance toward mobility. This is not to suggest that congestion is unimportant; rather, NCTCOG measures and addresses congestion and congestion management through existing programs and policies.

[View interactive dashboard in browser](#)



Out of the various subcategories for each comment, 75 percent (205 comments) fell under three categories: sidewalk or trail availability; bike and pedestrian safety; requests for lanes, stripes and markings for bikes and pedestrians (see **Exhibit 6-21**).

Exhibit 6-21: Share of Accessibility Issues by Category



Finding Solutions/Next Steps

In reviewing the comments from the Map Your Experience tool, a general theme emerged: there is great potential for improvement to pedestrian accessibility throughout the region. Many comments identified a need for wider sidewalks, completion of sidewalks, protected bicycle lanes, and safer speeds on non-arterial roads. Crosswalks across arterial streets would benefit from higher visibility markings and signals.

Improving the experiences of pedestrian and transit users is a joint effort across multiple stakeholders. Cities, counties, transit authorities, NCTCOG, and the Texas Department of Transportation each have roles to play in the implementation of changes. NCTCOG recommends that governments and governing bodies use the inputs

from Map Your Experience as starting points for further outreach and study to understand the accessibility issues they face. Departments of transportation should consider developing bike/ped toolkits that would serve as a quick guide to solving different types of accessibility problems such as incomplete sidewalks or unsafe road crossings. Accessibility improvements can be implemented as a focus area for capital improvement programs, with funds allocated specifically to address these problems.

NCTCOG is committed to improving the transportation experience for all users throughout our region and supporting our regional partners in finding solutions for transportation issues. The Mobility 2045 Update addresses many of these issues in the **Mobility Options** and **Social Considerations** chapters.

Impacts of Emerging Technology

In the future, the multimodal network and related policies, programs, and projects may be considered in the context of automated vehicles. Such vehicles have the potential to both benefit (through vehicle safety features) and harm (through infrastructure such as dedicated lanes) efforts to safely implement active transportation. Appropriate policies could help ensure automated vehicles improve safety for bicyclists and pedestrians. More information on automated vehicles can be found in the **Transportation Technology** chapter.

Performance Measures

Federally required performance measures for Metropolitan Planning Organizations are addressed in the **Regional Performance** chapter. Additional performance dimensions related to active transportation include:

- Number of pedestrian fatalities
- Number of pedestrian serious injuries
- Number of bicyclist fatalities
- Number of bicyclist serious injuries
- Number of miles of existing Regional Veloweb
- Number of miles of existing community shared-use paths
- Number of miles of existing on-street bikeways

Summary

Active transportation is an important element in providing for the region's diverse needs and enhancing transportation choice. Walking and bicycling provide low-cost mobility options that place fewer demands on local roads and highways. Increased commitment to, and investment in, walking networks and bicycle facilities can help meet goals for cleaner, healthier air; less congested roadways; and more livable, safe, cost-efficient communities. The recommendations made in the Mobility 2045 Update seek to increase active transportation as a viable transportation mode for the residents of North Central Texas.