Regional Bicycle Safety Action Plan

For the 12-County Dallas-Fort Worth Metropolitan Planning Area






Adopted October 8, 2026

Regional Transportation Council

What is Regional Transportation Council?

The Regional Transportation Council (RTC) has served as the Metropolitan Planning Organization (MPO) independent policymaking body for regional transportation planning in the Dallas-Fort Worth area since 1974. The RTC works in cooperation with the region's transportation providers to address the complex transportation needs of the rapidly growing metropolitan area. The Dallas-Fort Worth metropolitan area includes Collin, Dallas, Denton, Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, Tarrant and Wise counties. The area of the region is approximately **9,448** square miles, which is larger than **8** states, and the population of the region is over **8.8 million**, which is larger than **38** states. The RTC's 45 members include local elected or appointed officials from the metropolitan area and representatives from each of the area's transportation providers.

- The RTC oversees the metropolitan transportation planning process and is responsible for the following primary activities.
- Guiding the development of multimodal transportation plans and programs.
- Determining the allocation of federal, state and regional transportation funds.
- Selecting transportation projects in some programs and recommending projects to the Texas Transportation Commission for other programs.
- Ensuring transportation providers coordinate services.
- Ensuring the metropolitan area complies with state and federal laws and regulations regarding transportation and air quality.

The RTC is housed at the North Central Texas Council of Governments, with offices located in Arlington in the Centerpoint Two Building at 616 Six Flags Drive.

Regional Transportation Council
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Arlington, Texas 76005-5888

RTC's Department of Transportation Staff

The RTC's Department of Transportation staff is responsible for the regional planning process for all modes of transportation. The RTC staff provides technical support and staff assistance to the Regional Transportation Council and its technical committees, which compose the MPO policy-making structure. In addition, the RTC staff provides technical assistance to the local governments of North Central Texas in planning, coordinating, and implementing transportation decisions.

Prepared in cooperation with the Texas Department of Transportation. The contents of this report reflect the views of the authors who are responsible for the opinions, findings, and conclusions presented herein. The contents do not necessarily reflect the views or policies of the Federal Highway Administration, the Federal Transit Administration, or the Texas Department of Transportation.

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On October 8, 2026, the Regional Transportation Council adopted the Regional Bicycle Safety Action Plan, directing staff to implement the recommendations of the Regional Bicycle Safety Action Plan as consistent with the programs and policies of the existing Metropolitan Transportation Plan (Mobility 2050) and incorporate the recommendations of the Regional Bicycle Safety Action Plan into future metropolitan transportation plans.

Bicycle Safety Action Plan Stakeholders

The development of this Plan was guided by representatives of the agencies listed below acting as the Bicycle Safety Action Plan Stakeholder Workgroup. The participants in the planning process provided expertise in a range of bicycle-related fields and their time and participation in development of the Plan is appreciated.

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Dallas Area Rapid Transit

Dallas Bicycle Coalition

Federal Highway Administration

Richardson Bicycle and Pedestrian Advisory Committee

Richardson Bicycle Coalition

The Loop Dallas

Town of Flower Mound

Town of Prosper

Transportation Consultants

Trinity Metro

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Table of Contents

1. Introduction 4
   1.1. Purpose of this Plan 5
   1.2. Regional Crash Data Infographics 6
   1.3. Goals 8
   1.4. Guiding Principles 10
      1.4.1. The Safe System Approach 10
      1.4.2. Designing for All Ages and Abilities 11
   1.5. Development of the Plan and Public Engagement 12
      1.5.1. Bicycle Safety Action Plan Stakeholder Workgroup 12
      1.5.2. Bicycle and Pedestrian Advisory Committee 13
      1.5.3. Public Engagement 14
      1.5.4. Regional Bicycle Opinion Survey (2017) 15
      1.5.5. Regional Bicycle Safety Survey (2025) 17
      1.5.6. Map Your Experience 25
2. Existing Conditions 27
   2.1. Bicycle Safety in the United States 27
      2.1.1. Bicycle Safety Education in the U.S. 27
      2.1.2. Bicyclist Crash Trends in the U.S. 28
   2.2. Bicycle Safety in Texas 29
      2.2.1. Bicycle Safety Legislation in Texas 29
      2.2.2. Bicycle Safety Education in Texas 31
      2.2.3. Bicyclist Crash Trends in Texas 32
      2.2.4. Statewide Bicycle Planning 33
      2.2.5. Micromobility Devices (Electric Bicycles and Electric Motorcycles) 35
   2.3. Bicycle Safety in the North Central Texas Region 36
      2.3.1. Existing Bicycle Network in the North Central Texas Region 36
      2.3.2. Future Bicycle Network in the North Central Texas Region 39
      2.3.3. Regional Pedestrian and Bicycle Traffic Count Program 40
      2.3.4. Bicycle Safety Legislation and Policy in the North Central Texas Region 41
      2.3.5. Bicycle Safety Education in the North Central Texas Region 43
      2.3.6. Regional Cooperative Purchase Program for Bicycle Safety Infrastructure 44
      2.3.7. Bicyclist Crash Trends in the North Central Texas Region 45
      2.3.8. Bicycle Crash Density Analysis 50
      2.3.9. Economic Impacts of Bicyclist Fatalities and Serious Injuries 51
      2.3.10. Performance Measures and Targets 53
   2.4. Crash Investigation 54
3. Recommendations 56
   3.1. Priority Emphasis Areas 56
      3.1.1. Priority Emphasis Area Methodology 57
      3.1.2. Priority Emphasis Areas Findings and Application 59

3.2. Priority Bicycle Safety Corridors and Intersections 61
3.2.1. Priority Bicycle Safety Corridors and Intersections Methodology 61
3.2.2. Priority Bicycle Safety Corridors and Intersections Findings 62
3.3. Data Collection, Monitoring, and Evaluating 63
3.3.1. Data Collection 63
3.3.2. Monitoring 64
3.3.3. Evaluations 65
3.4. Planning and Policy 66
3.4.1. Multimodal Planning Analysis 66
3.4.2. Special Plans 66
3.4.3. Policies 68
3.4.4. End of Trip Facilities 68
3.5. Bikeway Design Best Practices 69
3.5.1. Intersection Safety Countermeasures 70
3.5.2. Separated Bicycle Lanes on Higher Speed Roadways 74
3.5.3. Design Considerations for Bikeways at Driveways and Unsignalized Intersections 77
3.5.4. Design Considerations for Shared-Use Path Midblock Roadway Crossings 79
3.5.5. Bicycle Boulevards 82
3.5.6. Federal and State Guidance for Rural Bicycle Safety 86
3.6. State Legislation 87
3.6.1. Statewide Safe Passing Distance 87
3.6.2. Universal Helmet Usage by Bicyclists 87
3.6.3. Speed Limits under 30 MPH without Conducting Traffic Studies 88
4. Recommended Action Items 89
4.1. Action Items 89
5. Conclusion 95
References 97

List of Figures

Figure 1: USDOT Safe System Approach Principles and Elements 10
Figure 2: Types of Bicycle Facility Users as a Percentage of the General Population 11
Figure 3: How often do you bicycle during optimal weather? 18
Figure 4: How interested are you in bicycling more often? 19
Figure 5: Primary Reason for Not Bicycling More Often 20
Figure 6: How safe or dangerous is it to bicycle in your community? 22
Figure 7: What is the TOP reason you feel it is unsafe to bicycle in your community? 23
Figure 8: National Pedalcyclist Fatalities (2019-2023)..... 28
Figure 9: Impact Speed and a Pedestrian's Risk of Death 30
Figure 10: Bicyclist Fatalities and Serious Injuries in Texas (2019-2023) 32
Figure 11: Statewide Trails Network..... 33
Figure 12: State Bikeway Network Alignments in North Texas 34
Figure 13: E-Bicycle and E-Motorcycle Characteristics..... 35
Figure 14: Inventory of Existing/Funded Bicycle Facilities in the MPA..... 36
Figure 15: Shared Use Path Providing Access to a Rail Station 38
Figure 16: Combined Regional Veloweb, Community Paths, and On-Street Bikeway Network.. 39
Figure 17: Texas Bicycle and Pedestrian Count Exchange (BP|CX) 40
Figure 18: Look Out Texans Safety Tip #8..... 43
Figure 19: Bicycle Crash Location in the MPA (2019-2023)..... 45
Figure 20: Fatal and Suspected Serious Injury Crashes in the MPA (2019-2023) 47
Figure 21: Bicycle Crash Density in the MPA (2019-2023) 50
Figure 22: Bicycle and Pedestrian Safety Action Plan Methodology Overview Diagram 57
Figure 23: Priority Emphasis Areas 59
Figure 24. Priority Bicycle Safety Corridor Identification Process 61
Figure 25: Priority Bicycle Safety Corridors and Intersections 62
Figure 26: North Carolina DOT Non-Motorist Crash Dashboard 64
Figure 27: Protected Intersection 72
Figure 28: Dedicated Intersection 73
Figure 29: Recommended Bicycle Facility Selection for Urban, Urban Core, Suburban, and Rural Town Context 74
Figure 30: Examples of Forms of Bicycle Facility Separation..... 76
Figure 31: Sight Triangles for Motorists Exiting Driveways and Alleys..... 77
Figure 32: Raised Driveway Crossing 78
Figure 33: Shared-Use Path Midblock Design Strategies 80
Figure 34: Midblock Crossing Treatments 81
Figure 35: Design Options for Bike Boulevards, NACTO Urban Bikeway Design Guide 82
Figure 36: Typical Geometry for a Speed Cushion..... 83

List of Tables

Table 1: Mobility 2050 Active Transportation Policies 3
Table 2: Barriers to Bicycling More Often 21
Table 3: Desired Bicycle Safety Improvements 24
Table 4: Bicyclist Fatalities, Serious Injuries, and Total Crashes in Texas 2019-2023 32
Table 5: Bicycle Crashes by Crash Severity in the MPA (2019-2023) 46
Table 6: Bicyclists Injuries in the MPA (2019-2023) 46
Table 7: Total Unit Cost of Bicyclist Crashes by Severity (2019 - 2023) 52
Table 8: Five-Year Rolling Average for the Number of Nonmotorized Fatalities and Serious Injuries as shown in Mobility 2050 53
Table 9: Crash Results per Priority Emphasis Area 60
Table 10: Priority Bicycle Safety Corridors and Intersections 62
Table 11: Potential Intersection Safety Countermeasures 71
Table 12: Contextual Guidance for Selecting All Ages & Abilities Bikeways 75
Table 13: Recommended Ongoing Action Items 90
Table 14: Recommended Short Term Action Items (1 - 5 Years) 2027 - 2031 93

Appendices

Appendix A: Mobility 2050 Bicycle-Related Programs and Projects

Appendix B: Detailed Crash Tables

Appendix C: Summary of Public and Stakeholder Feedback

Appendix D: 2017 Regional Bicycle Opinion Survey

Appendix E: 2025 Regional Bicycle Opinion Survey

Appendix F: Priority Emphasis Areas Analysis Methodology

Appendix G: Project 0-6983: North Texas Bicycle and Pedestrian Crash Analysis (2020)

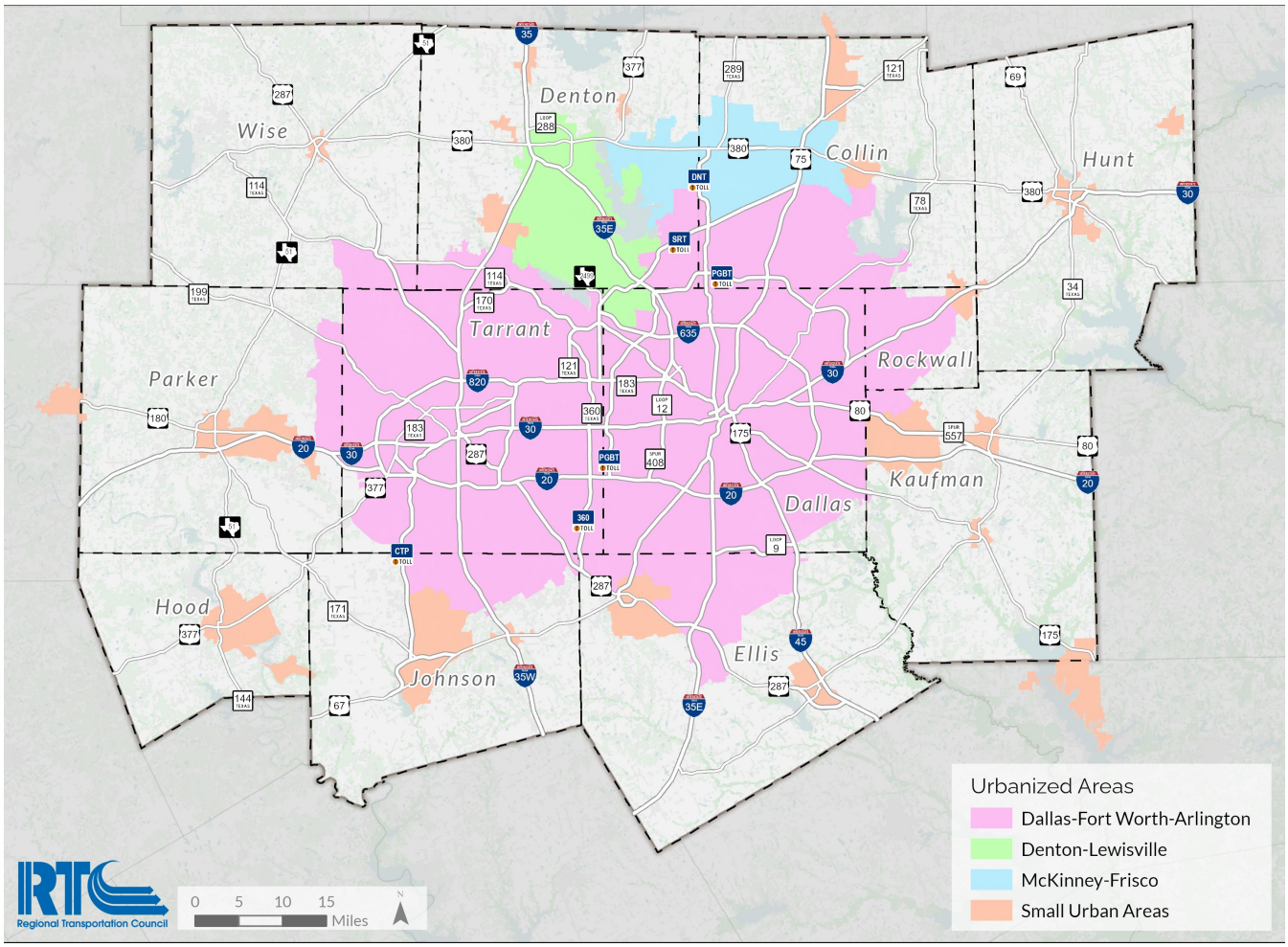
Appendix H: Priority Bicycle Safety Corridors and Intersections Methodology

Appendix I: Priority Bicycle Safety Corridors and Intersections

About the Metropolitan Planning Area

The Metropolitan Planning Organization (MPO) for the Dallas-Fort Worth area works in cooperation with the region's transportation providers to address complex transportation needs of the rapidly growing region. The scope of this Plan is the 12-county Metropolitan Planning Area (MPA), comprised of Collin, Dallas, Denton, Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise Counties. The MPA includes three urbanized areas as defined by the Texas Department of Transportation (TxDOT): Dallas-Fort Worth-Arlington, Denton-Lewisville, and McKinney-Frisco.

North Central Texas is a dynamic and rapidly growing region centered around the cores of Dallas and Fort Worth. As the region continues to grow, from a population of more than 8.8 million today to an estimated 12.3 million by 2050, it is critical to meet the demands of this growth and ensure all North Texans have access to vital resources, such as jobs, healthcare, healthy food, and education. This will require a safe, efficient transportation system for all users, including roads, rail, public transit, and active mobility facilities, along with local policies that drive infrastructure improvements.



Bicycle Transportation Background

Bicycle transportation is a nonmotorized mode of travel used in lieu of walking, transit, or using a motor vehicle with an engine. Bicycle transportation benefits all road users and creates more livable, safe, cost-effective communities. The region's bicycle network is used as a mode of transportation by people of all ages and abilities for trips of a variety of purposes, including traveling to work or school and as first mile/last mile connections with transit services, including bus stops and rail stations.

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 United States Department of Transportation (USDOT) policy statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations signed on March 11, 2010 states:

> *The DOT policy 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.*

RTC and TxDOT Safety Statements

Through the Regional Transportation Council guidance in the development of multimodal transportation plans and programs, the 44-member council approved a regional safety position on December 14, 2017, which states:

> *Even one death on the transportation system is unacceptable. Staff will collaborate with our partners to develop projects, programs, and policies that assist in eliminating serious injuries and fatalities across all modes of travel.*

The RTC's safety position aligns with the Texas Transportation Commission's minute order from May 30, 2019, which states:

> *The Texas Transportation Commission (commission) directs the Texas Department of Transportation (department) to work toward the goal of reducing the number of deaths on Texas roadways by half by the year 2035 and to zero by the year 2050. The commission acknowledges a majority of motor vehicle crashes can be prevented, thereby reducing fatalities.*

Metropolitan Transportation Plan Bicycle Safety-Related Policies

The Metropolitan Transportation Plan for the North Central Texas region, *Mobility 2050*, includes three policies for active transportation planning as listed in Table 1. A list of programs and projects from *Mobility 2050* are provided in **Appendix A.**

Table 1: Mobility 2050 Active Transportation Policies

Description
BP3-001: Support the planning and design of a multimodal transportation network with seamless interconnected active transportation facilities that promote walking and bicycling as equals with other transportation modes. The active transportation network must be interconnected with transit services and integrated as part of context-sensitive solutions to connect key destinations, including employment centers; education, medical, retail, and entertainment centers; and other destinations for daily activities. *Mobility 2050* promotes roadways in the urbanized area that are designed and constructed to accommodate at least three or more modes of transportation.
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. Mobility 2050 promotes bicycle and pedestrian projects that connect multiple jurisdictions and expand the regional network by improving coordination, connectivity, and continuity between counties and communities. Improving safety is a top priority for the US Department of Transportation and *Mobility 2050* is committed to reducing fatalities and serious injuries on the transportation network throughout North Central Texas. To realize the potential of active transportation, special attention must be paid to the current barriers and safety issues the region is experiencing, including: • An incomplete network of bicycle and pedestrian facilities, including facilities that serve 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 the 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.
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. *Mobility 2050* 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.

1. Introduction



Residents and visitors across the Dallas-Fort Worth metropolitan area rely on bicycle connections to major destinations. The MPO is dedicated to the development of a safe, comfortable, and accessible bicycle network that connects people to jobs, schools and essential services through organizational policies, programs, and collaborative efforts with local governments. Directives within *Mobility 2050* support a safe, regional active transportation network that promotes bicycling as an equal with all other transportation modes, for people of all ages and abilities. Support for a safe, regional bicycle network is incorporated within the policies and programs supported by the Regional Transportation Council (RTC) for many years and is included in *Mobility 2050* which was adopted by the RTC on June 12, 2025.



This Bicycle Safety Action Plan (the Plan) was developed in response to the increasing number of bicyclist fatalities across the metropolitan area and to align with the safety positions adopted by the RTC and the Texas Transportation Commission. It is intended to provide guidance for our regional partners as well as the development of more detailed local plans, in support of the aspirational goal to reduce the number of bicyclist fatalities to zero. The Plan was formed in collaboration with local governments, the Texas Department of Transportation (TxDOT), and a multidisciplinary group of stakeholders. The following sections summarize the development of the Plan, including current conditions, public engagement, the identification of Priority Emphasis Areas, recommended policies, and actionable items for implementation.



1.1 Purpose of this Plan

The purpose of this Plan is to provide a framework to state, regional, and local governments for reducing bicyclist crashes and fatalities in the 12-County MPA. The primary focus of this Plan is on the urban areas of the region, as 95 percent of documented crashes and 92 percent of serious and fatal crashes in the region have occurred in these urban areas.

This Plan identifies current conditions and targeted areas for improvements, as well as recommended actions involving engineering, education, enforcement, and evaluation. The Plan is intended to guide the enhancement of existing bicycle facilities and the programming of new projects and programs. The RTC encourages the implementation of all reasonable bicycle safety countermeasures that enable the region to achieve adopted safety performance targets. A summary of all related bicycle safety policies and programs included in *Mobility 2050* are provided in **Appendix A.**



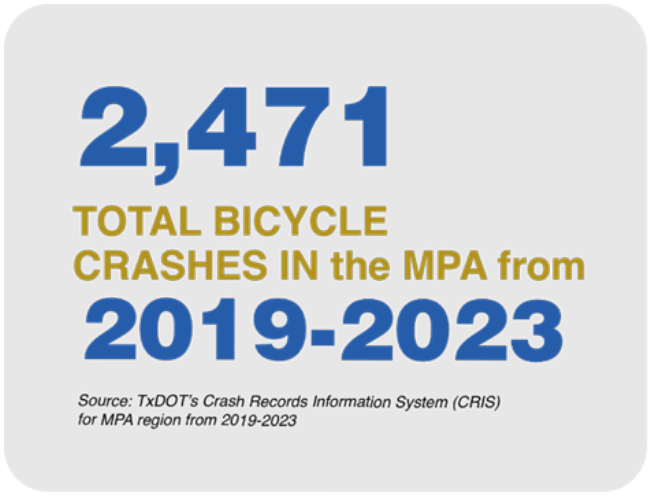


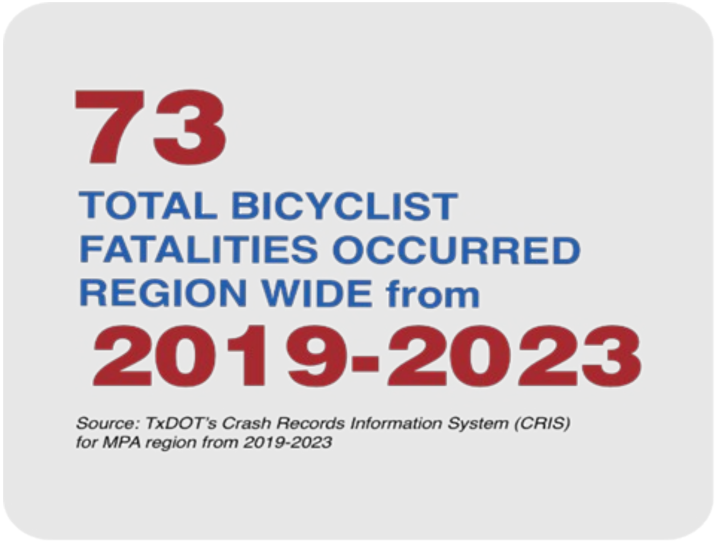


1.2 Regional Crash Data Infographics

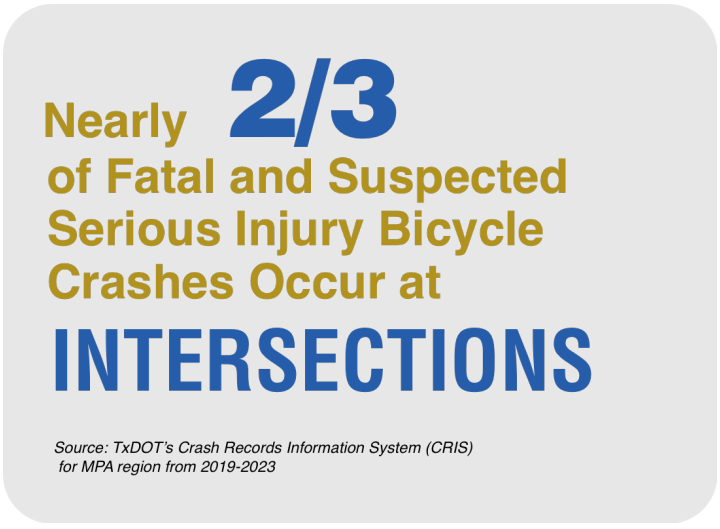
The Texas Department of Transportation maintains the statewide Crash Records Information System (CRIS) records for all reportable "pedalcyclist" crashes from bicycles and other human-powered conveyances, including tricycles, unicycles, and electric bicycles that have operable pedals and attain a top speed of 28 miles per hour or less (see **Section 2.2.5** for State e-bike classification definitions). Since most crashes under the "pedalcyclist" classification are bicycle crashes, these crashes are henceforth in this Plan referred to as "bicyclist crashes."

The following infographics highlight key findings of the bicycle crash data analysis for the North Central Texas region based on reported crashes that occurred from 2019-2023. Additional details related to bicycle crashes are provided in **Section 2.3.7** and **Appendix B.**









Source: TxDOT's Crash Records Information System (CRIS) for MPA region from 2019-2023

97%
of Fatal and Suspected Serious Injury Bicycle Crashes Occur in
URBAN AREAS



Source: TxDOT's Crash Records Information System (CRIS) for MPA region from 2019-2023

92%
of bicyclist crashes occur within
1 MILE
of a school



Source: TxDOT's Crash Records Information System (CRIS) for MPA region from 2019-2023

Over
1/3
of bicyclist crashes occur within a 2-mile radius of a
TRANSIT STATION



Source: TxDOT's Crash Records Information System (CRIS) for MPA region from 2019-20123

81% of bicyclists killed were not wearing
HELMETS

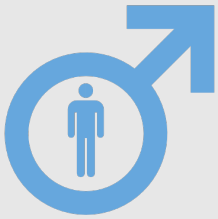
Source: TxDOT's Crash Records Information System (CRIS) for MPA region from 2019-2023

7 out of 20
Female Bicyclist Deaths Involve
WOMEN
Over the Age of
35



Source: TxDOT's Crash Records Information System (CRIS) for MPA region from 2019-2023

MEN
over the age of
55
account for almost
50% of male bicyclist fatalities



Source: TxDOT's Crash Records Information System (CRIS) for MPA region from 2019-2023

1.3 Goals

The following five goals were developed through stakeholder and public engagement to shape the vision of the Plan and achieve the regional and State safety positions:



Eliminate All Serious Injury and Fatal Bicycle Crashes Across the Region by 2050.

Even one death or serious injury on the transportation system is unacceptable.

This plan supports the goals and timeframe of local Vision Zero and Comprehensive Safety Action Plans and encourages the adoption of local safety plans.



Address Critical Bicycle Safety Needs in Priority Locations

Bicycle crashes involving motor vehicles are sporadic.

As a region approaching nine million people, data must be strategically used to identify and monitor areas and corridors with the highest density of bicycle crashes. Targeting proven safety countermeasures in the areas with the greatest need will have the largest impact on improving safety.



Enhance Safe Connections to Daily Destinations

Safe connections to daily destinations are essential for reducing the number of bicycle crashes.

Providing an all ages and abilities bikeway network with safe and comfortable connections from neighborhoods to work, school, stores, entertainment, community facilities, and transit is critical in ensuring safe bicycle travel.



Balance the Safety and Needs of All Road Users

The most vulnerable road users, including but not limited to pedestrians, bicyclists, young children, older adults, individuals with disabilities, and less skilled bicyclists, are at risk of fatal and serious injury when involved in a crash.

Prioritizing the most vulnerable road users in transportation system design, operation, and maintenance is essential to reducing the number of fatalities and serious injuries.



Develop a Culture of Safety

Safety depends on how road users navigate the system and looking out for one another.

It is essential for public officials and community leaders to champion safety in implementing solutions, increasing awareness, and spearheading the shift to a culture of safety.

Providing training for transportation professionals to implement best practices and design solutions facilitates safe road behaviors.

Educating the public of their responsibilities and rights while navigating the road keeps everyone safe. Safety is everyone's responsibility whether walking, bicycling, or driving.

1.4 Guiding Principles

The following guiding principles support the Plan's goals and the recommended action items detailed in **Section 4.**

1.4.1 The Safe System Approach

As emphasized by the RTC Regional Safety Position, no death on the transportation system is acceptable. Thus, a multi-faceted approach is needed to address and mitigate safety risks of the complex transportation system. The Safe System Approach is the guiding paradigm adopted by the U.S. Department of Transportation (See Figure 1) and many state, regional, and local governments to create a safer transportation system for all with six principles:[1]

1. **Death and Serious Injuries are Unacceptable**
2. **Humans Make Mistakes**
3. **Humans Are Vulnerable**
4. **Responsibility is Shared**
5. **Safety is Proactive**
6. **Redundancy is Crucial**

Figure 1: USDOT Safe System Approach Principles and Elements.

The Safe System Approach promotes proactive transportation planning, design, and operation with the goal of protecting human life at the center. It is a holistic strategy and is implemented through five complimentary objectives to address all aspects of the transportation system: safe road users, safe vehicles, safe speeds, safe roads, and post-crash care.



1.4.2 Designing for All Ages and Abilities

According to the *Texas Roadway Design Manual*, most of the population has low stress tolerance for bicycling on the road with motor vehicle traffic.[2] Commonly classified as "interested but concerned" bicyclists, these individuals prefer to ride on a bicycle facility separated from vehicle traffic or on residential streets where vehicle traffic and speeds are low (See Figure 2). These individuals may choose not to bicycle if a facility does not meet their needs for perceived comfort.

Figure 2: Types of Bicycle Facility Users as a Percentage of the General Population



Comfort Typology of Bicyclists

Design User Profile	Non-Bicyclist	Interested but Concerned	Somewhat Confident	Highly Confident
Bicycling Preferences	Uncomfortable bicycling in any condition, have no interest in bicycling, or are physically unable to bicycle.	Often not comfortable with bike lanes, may bike on sidewalks even if bike lanes are provided; prefer off-street or separate bicycle facilities or quiet or traffic-calmed residential roads. May not bike at all if bicycle facilities do not meet needs for perceived comfort.	Generally prefer more separated facilities, but are comfortable riding in bicycle lanes or on paved shoulders if need be.	Comfortable riding with traffic, will use roads without bike lanes.
Percent of Population	31-37%	51-56%	5-9%	4-7%

Source: Texas Roadway Design Manual (2024)

A connected network of bicycle facilities designed with the "interested but concerned" bicyclist as the target user is referred to as an All Ages and Abilities (AAA) bikeway network.[3] These networks are planned and designed in a context sensitive manner considering local land use, road characteristics such as vehicle speed and volume, and the connectivity and accessibility needs of the community. AAA bikeway networks meet the safety and comfort needs of a diverse population of bicyclists-- young bicyclists, older adults, individuals with disabilities, less-skilled bicyclists, and other micromobility users, encouraging and granting more people the ability to travel by bicycle.

1.5 Development of the Plan and Public Engagement

This Plan was developed through a robust engagement process with community stakeholders and the public consisting of over 40 meetings and events. RTC staff solicited feedback from the public via a regional survey, attending numerous outreach events and bicycle group meetings, and collecting comments via the Map Your Experience tool. Additionally, technical expertise was solicited via the Regional Bicycle and Pedestrian Advisory Committee (BPAC), Regional Safety Advisory Committee (RSAC), a Bicycle Safety Action Plan Stakeholder Workgroup and hosting one-on-one meetings with local city and TxDOT staff.

The feedback obtained through this engagement and stakeholder technical knowledge guided the development of the Plan recommendations and priorities.



DART Bike to Work Day event (May 2025). RTC staff distributed bicycle safety materials and promoted the 2025 regional bicycle safety survey.

1.5.1 Bicycle Safety Action Plan Stakeholder Workgroup

A Stakeholder Workgroup comprised of regional professionals and bicycle advocates provided technical guidance and assisted in developing the Plan's purpose, goals, priority areas, and action items. The Workgroup members provided expertise and experience from a diverse array of bicycle-related fields, including federal, state, and local transportation planning, health agencies, and transit agencies amongst others.

The Workgroup met in March and July 2025. RTC staff presented the Workgroup with data analyzing regional trends, public opinion survey results, methodology for identifying priority areas and corridors in the region to address bicycle safety, and draft goals and action items.

1.5.2 Regional Bicycle and Pedestrian Advisory Committee

The Regional Bicycle and Pedestrian Advisory Committee (BPAC) serves as the regional technical committee comprised of representation from each membership organization (local governments and transportation providers) of the Surface Transportation Technical Committee.[4] The data analysis and draft recommendations of the Plan were shared at quarterly BPAC meetings during 2025 and 2026. At each of these meetings, committee members were asked to share their technical expertise by participating in polls and discussions related to bicycle safety concerns in their communities, intersection safety, and recommended action items for the Plan. Input received from BPAC members informed the goals and recommendations of the Plan. Results from the BPAC meeting polls are provided in **Appendix C**.

During the BPAC meetings, committee members identified the need for safe, connected bicycle infrastructure and bicycle safety related policies to protect vulnerable road users. Responses emphasized that bicycle safety challenges are infrastructure-related and there is a need for education for road users, public officials, and transportation officials on how to best address bicycle safety.

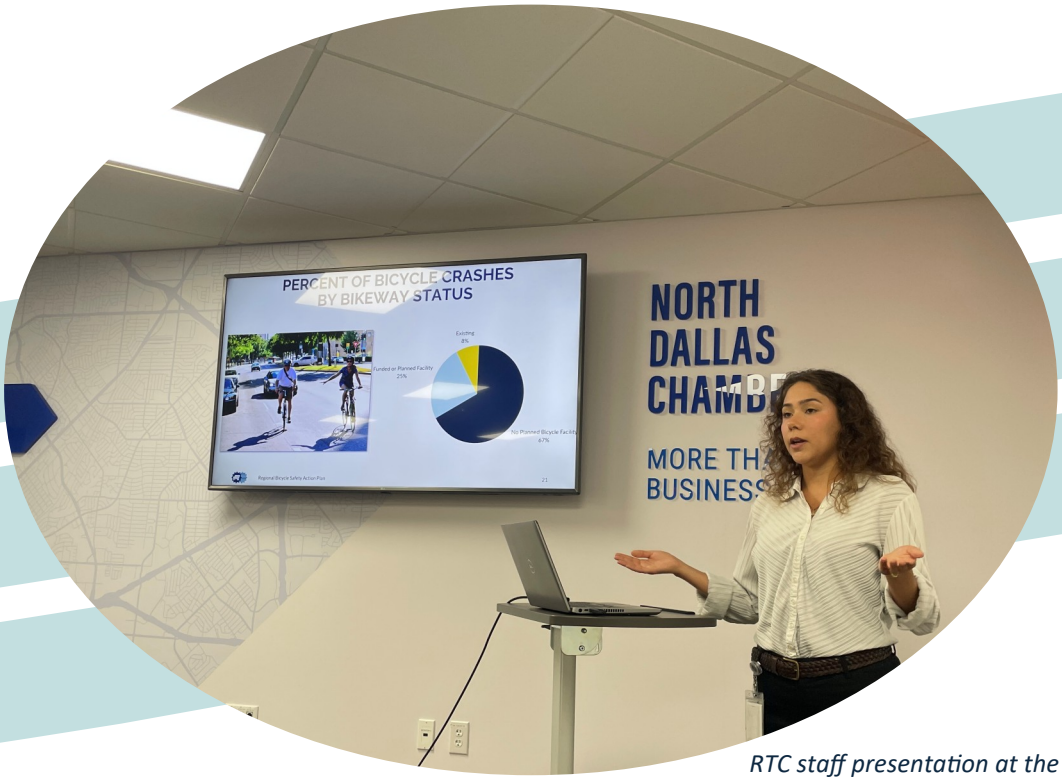
Key themes

- **Lack of connected bicycle network is the top community concern, followed by issues related to distracted drivers and riders, and traffic speed and congestion.**
- **Strong support for protected bike facilities and traffic calming.**
- **Intersections are viewed as a major safety risk.**
- **Preferred intersection solutions focus on separation and visibility.**
- **Education related to the importance of bicycle safety for the public, the benefits of safe bicycling for elected officials and bicycle planning and design best practices for transportation professionals.**

1.5.3 Public Engagement Feedback

In addition to advisory committee meetings and stakeholder workgroup meetings, RTC staff attended several local bicycle group and committee meetings and outreach events to gather public input related to bicycle safety and to promote the 2025 Regional Bicycle Safety Survey. These meetings and events are identified in **Appendix C**. At the local committee meetings, attendees were provided the existing conditions and crash data analysis and polled regarding bicycle safety concerns and possible recommended safety countermeasures.

Most of the attendees at the local public meetings identified themselves as confident or somewhat confident cyclists. Feedback from attendees was divided on their perceptions of how safe their community is for bicyclists, with their opinions of safety ranging from somewhat safe to dangerous. The top safety concerns identified in these meetings were related to driver behavior and roadways and intersections not designed to accommodate cyclists. When asked how bicycle safety could be improved at intersections, the most frequent responses cited were more protection for bicyclists by physically separating bicycle movement from vehicle traffic and signals for bicycles. A summary of the public feedback received is provided in **Appendix C.**



RTC staff presentation at the North Dallas Chamber of Commerce Surface Transportation Committee Meeting.

1.5.4 Regional Bicycle Opinion Survey (2017)

In 2017, RTC staff conducted a survey of residents within the 12-county region to capture the views of the public-at-large about bicycle use across the region. A statistically valid telephone survey was conducted to help guide future bicycle plans and projects affecting bicyclists, understand perceptions that help or hinder bicycle use, and understand perceived barriers to bicycling.

The following key findings from the 2017 opinion survey informed the development of this Plan:

- **Approximately half of respondents indicated impediments to bicycling more often includes the lack of bike lanes, trails and paths; the lack of connections between bike lanes, trails and paths; or not having showers or a place to freshen up at the end of trip destination.**
- **A majority of respondents identified several aspects to have a negative impact on bike access in their neighborhood by:**
    - **drivers exceeding neighborhood speed limits (66 percent),**
    - **lack of access to bike lanes (64 percent),**
    - **volume of traffic on nearby streets (59 percent) and**
    - **speed of traffic on nearby streets (58 percent).**
- **The type of bicycle facility design, location, and traffic volumes are significant influences on respondent's level of comfort bicycling.**
- **Bicyclist level of comfort riding on a street increases significantly if the street has designated bike facilities and safety improvements, including measures to slow traffic speeds.**
    - **Only nine percent of respondents indicated feeling comfortable riding on a major street with several lanes of traffic and speeds of 35 to 40 miles per hour, however 50 percent indicated feeling at least somewhat comfortable on the same street if it had a striped bike lane, and**
    - **78 percent of respondents indicated they would feel at least somewhat comfortable if the street had a wide bicycle lane separated from traffic by a raised curb.**
- **Most respondents considered it "essential" or "very important" for their community to make improvements to increase bicycle access.**
    - **72 percent supported providing traffic signals or crossing beacons at intersections and crossings to warn drivers of bike and trail users crossing the road**
    - **70 percent supported providing bike lanes separated from vehicles so bikes and cars do not have to share the same lane**
    - **56 percent supported providing bike trails separated from roadways**
    - **50 percent supported lower traffic speeds on community roadways to improve the safety of pedestrians and bicyclists sharing the road**
- **Most respondents indicated there are "too few" bicycle facilities in their communities.**
    - **75 percent indicated there are too few places to park bicycles such as bike racks and storage locations**
    - **73 percent indicated there are too few on-street dedicated bike lanes**
    - **63 percent indicated there are too few bicycle-friendly streets**
    - **62 percent indicated there are too few off-street bicycle paths and trails**

Survey respondents overwhelmingly indicated key improvements for safety and comfort include increasing the number of bicycle facilities, separating bicyclists from motor vehicle traffic, and implementing traffic calming measures. A detailed summary of the 2017 survey results is provided in **Appendix D.**



Bicyclist riding on the sidewalk along a major arterial street in Dallas that lacks bicycle facilities.

1.5.5 Regional Bicycle Safety Survey (2025)

While the 2017 opinion survey helped identify the accommodations bicyclists need to reach destinations comfortably, the survey did not comprehensively address perceptions of bicyclist safety. Therefore, an additional bicycle safety survey was administered during 2025 with the development of this Plan to better understand the safety challenges and concerns bicyclists face and the solutions residents want to see implemented.

The 2025 survey was a voluntary response survey administered online using the PublicInput survey tool. The survey targeted bicyclists and non-bicyclists of all ages and abilities in the 12-county region. To reach a broad audience, the survey was promoted through social media platforms, local publications, and outreach events and public meetings across the region. These events engaged groups interested in bicycle safety and accessibility, environmental issues, transportation, and education. All responses were recorded, regardless of whether the respondent completed the entire survey. A total of 1,621 individuals participated, of which, 81 percent completed every question. A detailed summary of the 2025 survey results is provided in **Appendix E.**

Determining the priorities of residents across the region aids in the decision-making process by local planners who must weigh the costs and benefits of potential solutions and their alternatives. As such, the 2025 bicycle safety survey was conducted to gather insight into public perception of bicycle safety and accessibility across the region, with the goal of informing recommendations in this Plan to eliminate all serious injuries and fatalities resulting from bicycle-related roadway crashes. The survey included questions designed to identify barriers to bicycling, perceptions of safety, and types of safety improvements respondents consider most important.





Bicycling Behavior

Respondents were asked how often they bicycle during optimal weather (see Figure 3) and how interested they are in bicycling more often than they are currently (see Figure 4).

Understanding the bicycling history of those surveyed helps reveal the extent of their experience and provides context for how they perceive safety. Both bicyclists and non-bicyclists contribute valuable perspectives and offer insight into local safety challenges as well as the behaviors and preferences of residents across the region.



Man and woman bicycling on a street in Downtown Denton.

Figure 3: How often do you bicycle during optimal weather?

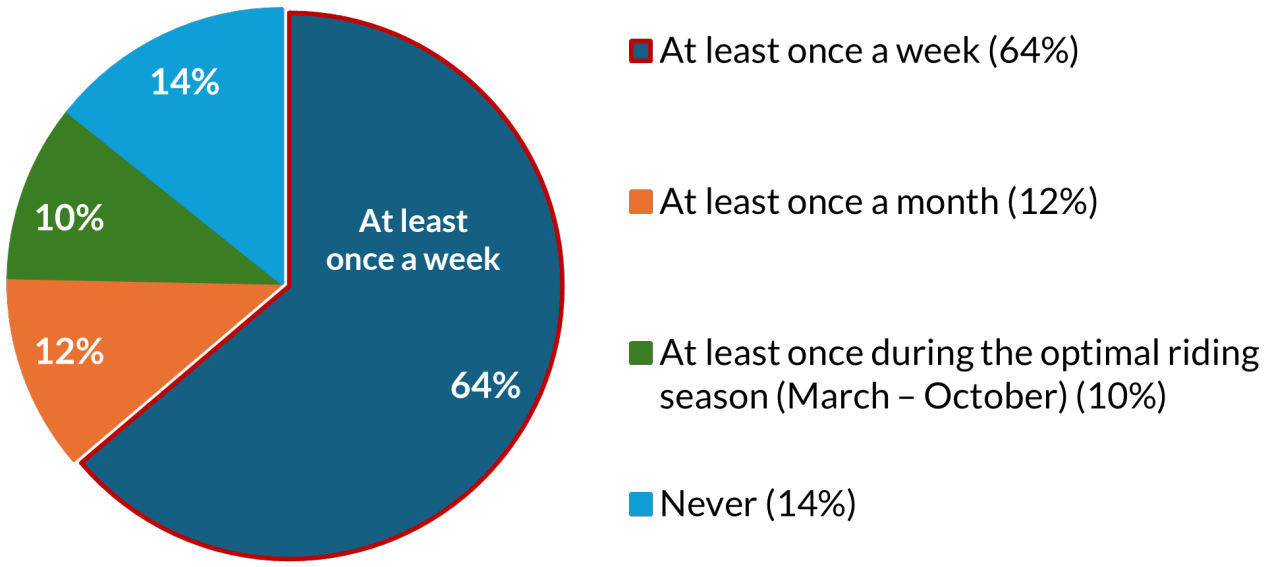
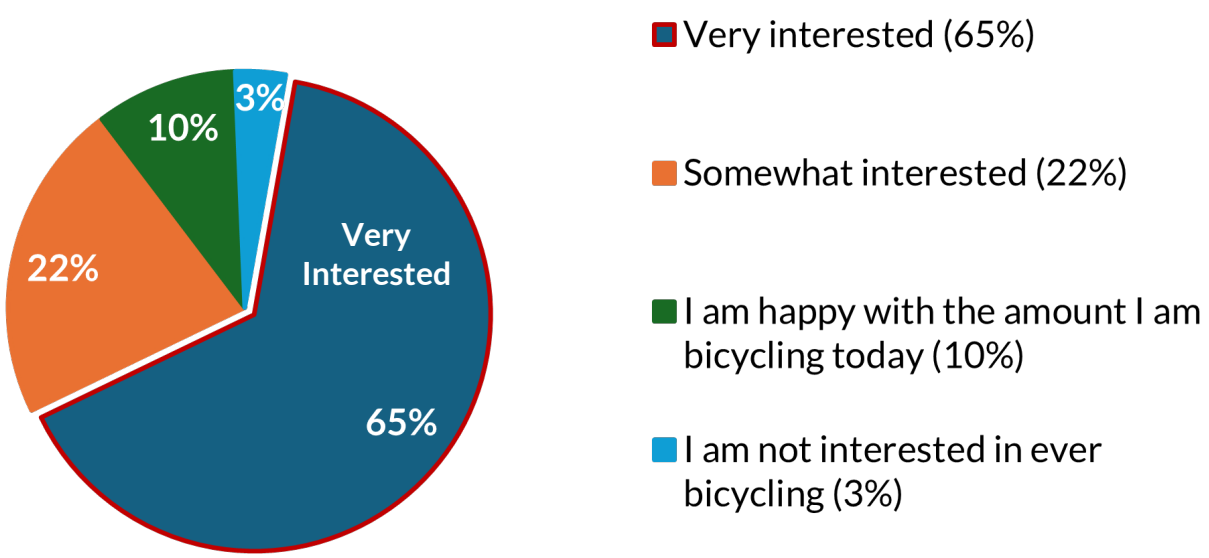


Figure 4: How interested are you in bicycling more often?



Many respondents (64 percent) indicated they bicycle at least once a week during optimal weather, and 87 percent of respondents indicated they are somewhat or very interested in bicycling more often. Fourteen percent of respondents reported they never bicycle; however, 64 percent of those respondents said they were either somewhat or very interested in bicycling. Only three percent of all survey respondents reported they never bicycle and are not interested in bicycling.

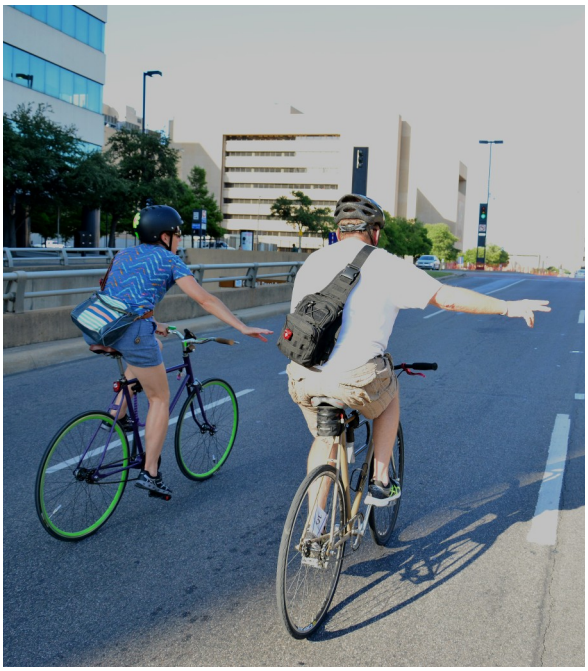


Bicyclists rent and ride e-bicycles through Trinity Metro Bikes bike share program.
Source: Trinity Metro Bikes

Barriers to Bicycling

Understanding the types of barriers preventing residents from bicycling is essential for prioritizing improvements to make cycling a safer, more practical, and more appealing option.

More than half of survey respondents said safety concerns are the primary reason they do not bicycle more often (see Figure 5). When asked to identify the top one to three barriers preventing survey participants from bicycling more often, the top responses referred to the lack of safe bicycle accommodations (see Table 2). These findings highlight safety perceptions as a central factor limiting bicycling in local communities. Understanding community concerns is critical for prioritizing investments. Closing network gaps, designing safer intersections, and ensuring safe routes are accessible where people live will allow local governments to address the existing conditions deterring residents from choosing bicycling as a preferred mode of transportation.



Bicyclists signaling a lane change while riding on a street in Downtown Dallas.

Figure 5: Primary Reason for Not Bicycling More Often

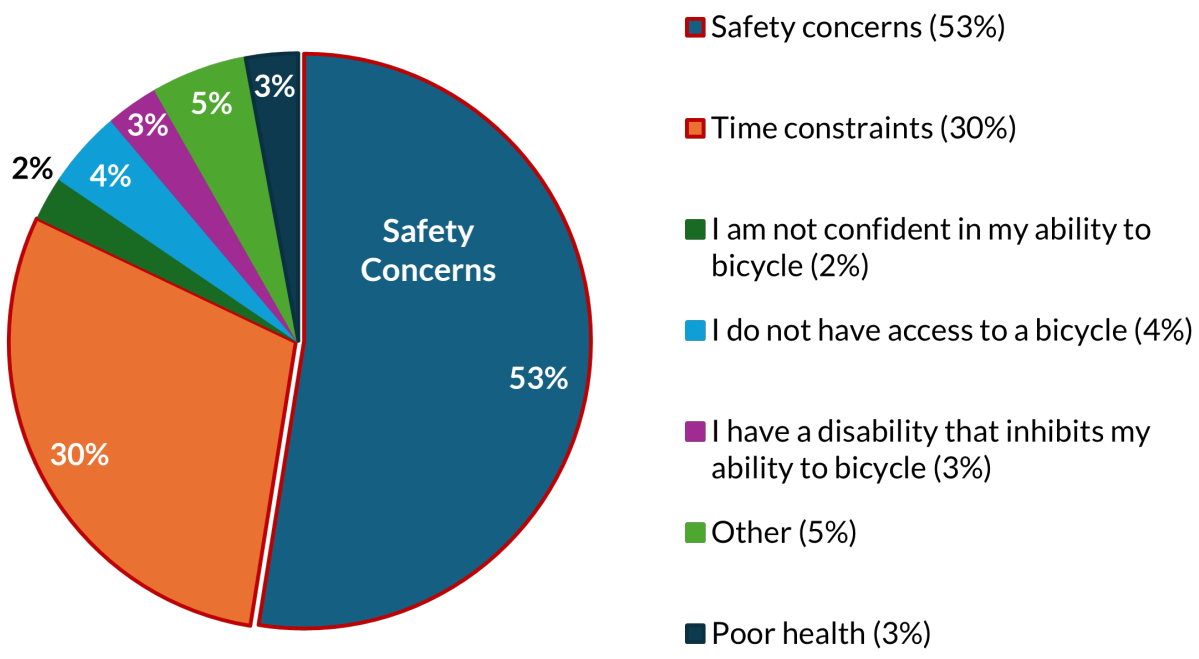


Table 2: Barriers to Bicycling More Often

What is the top 1-3 barriers preventing you from bicycling more often?	Rank	Percent of Responses
I do not have safe routes nearby	1	26.5%
There are too many gaps in safe routes to my typical destinations	2	18.6%
There are large intersections that lack bicycle accommodation along my route	3	17.1%
Potential harassment from other road users	4	8.1%
I live too far from my daily destinations to bike there	5	5.9%
There is no bike parking, showers, or changing rooms at my daily destinations	6	5.6%
Lack of traffic enforcement	7	5.6%
Weather conditions make it undesirable to bicycle	8	4.9%
There are no barriers preventing me from bicycling more	9	4.1%
I transport children or cargo on my way to/from my daily destinations	10	1.2%
I want to bike more often but don't know how to begin	11	1.2%
I am not confident enough in my bicycling abilities	12	0.9%
Traffic enforcement is too aggressive	13	0.4%
	Total	100%

Perceptions of Safety

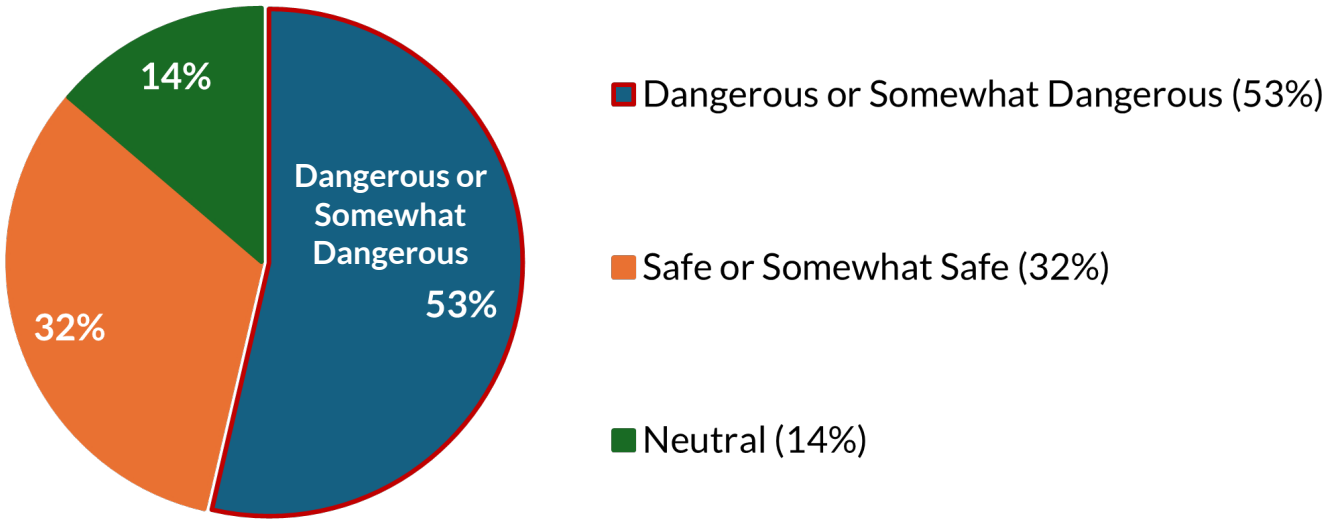
Safety concerns are one of the primary barriers to bicycling in the region, yet the specific reasons residents perceive roadways as unsafe require closer examination. Factors such as inadequate bicycle infrastructure, high-speed vehicle traffic, driver behavior, and large vehicles were identified as often contributing to a sense of vulnerability among bicyclists. Understanding the elements of a roadway making bicycling unsafe is essential to identifying the conditions discouraging bicycling and to developing targeted improvements addressing the region's most pressing safety needs.

Survey respondents were asked how safe it is to bicycle in their communities. A majority of respondents (53 percent) reported their communities were either dangerous or somewhat dangerous (see Figure 6).



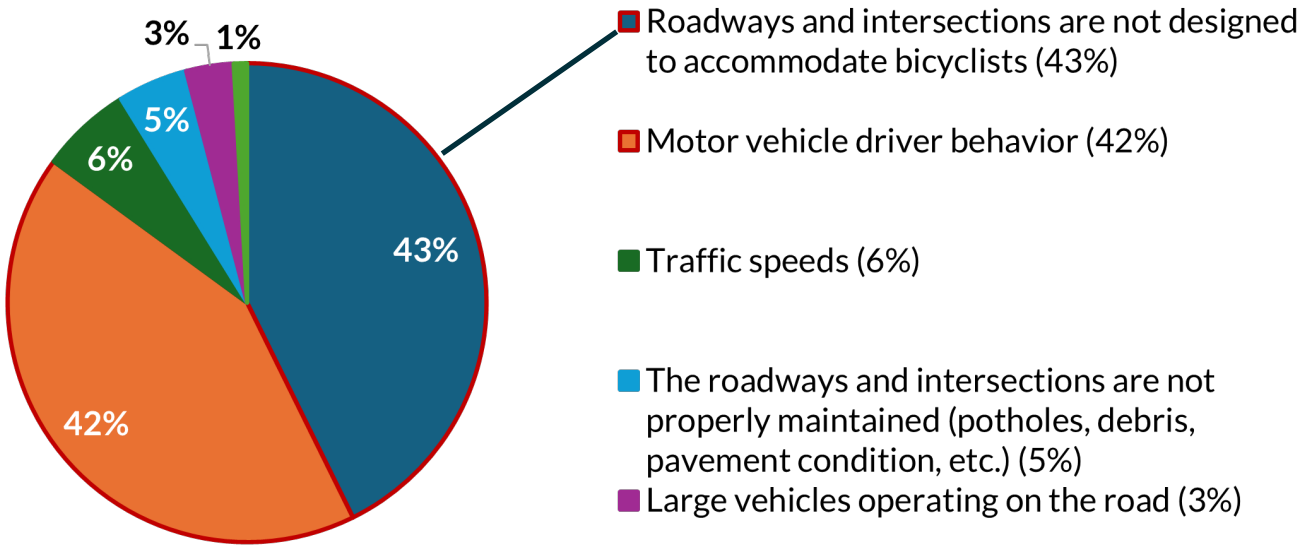
Bicyclist using hand signals to alert drivers of a right turn (Source NHTSA).

Figure 6: How safe or dangerous is it to bicycle in your community?



The respondents who reported their communities were not safe to bicycle in were subsequently asked for the top reason they felt their communities were unsafe. Of these respondents, 43 percent reported their top safety concern is roadways and intersections are not designed to accommodate bicyclists and 42 percent reported motor vehicle driver behavior was the top reason their communities were not safe for bicycling (see Figure 7).

Figure 7: What is the TOP reason you feel it is unsafe to bicycle in your community?





Woman bicycling through busy intersection (Source NHTSA).

Priority Safety Improvements

Given the expansive geographic size of the North Central Texas region, it is important for this Plan to prioritize the allocation of available funds towards implementing effective safety countermeasures. As such, survey respondents were asked to rank safety countermeasures for implementation (see Table 3). The respondents ranked constructing bike lanes as their top safety priority, followed by improving existing lanes and making intersections safer for bicyclists. These priorities highlight the critical role of roadway design with dedicated bicycle facilities for supporting bicyclist safety and level of comfort.

Table 3: Desired Bicycle Safety Improvements

Bicycle safety improvement you would like to see in your community in order from most (1 being the highest priority) to least (9 being the lowest) important.	Average Rank
Construct bike lanes (lane markings)	2.2
Improve existing bike lanes to protected bike lanes (physically separated from traffic)	3.0
Improve the safety of bicycle crossings at intersections (dedicated bike signals, designated bike lane markings through intersections, etc.)	3.5
Increase education for bicyclists and drivers	4.0
Increase bike lane maintenance (repair damaged barriers, restripe lanes, sweeping, etc.)	4.2
Reduce vehicle speeds through traffic calming measures (lower speed limits, speed bumps, narrow motor vehicle lanes, etc.)	4.6
Increase police enforcement of traffic laws	4.7
Increase and improve secure bike parking	6.3
No safety improvements are needed	8.2

Survey Conclusion

The 2025 survey results underscore the critical importance of investing in safe and accessible bicycle infrastructure to encourage bicycling across North Texas. While there is strong and sustained community interest in bicycling, many residents perceive it as unattainable due to roadway designs prioritizing motor vehicle traffic and associated unsafe driver behaviors. Designing roadways with bicyclist safety and comfort in mind not only benefits bicyclists but also enhances safety and efficiency for motorists. Although safety education, traffic calming measures, and enforcement remain vital components of a comprehensive safe system approach, respondents consistently emphasized the construction and improvement of bicycle accommodations as their highest priority. These findings from the citizen survey directly informed the development of recommended action items provided in **Section 4**.

1.5.6 Map Your Experience

Map Your Experience is an interactive online public input tool managed by the MPO. The tool allows residents from across the region to share comments about their daily travel experiences, and to specifically highlight transportation infrastructure they believe needs improvement. The primary purpose of this initiative is to gain meaningful insight into the transportation problems North Texans face when navigating their communities. Data collected through **Map Your Experience** is used by regional and local planners alike as they develop targeted transportation solutions informed by the lived experiences of residents.

Between May 2020 and May 2025, RTC staff collected over 700 comments specifically related to bicycle and pedestrian travel. These bicycle- and pedestrian-focused comments were the largest category of comments provided in the tool, totaling 44 percent of all comments, compared to roadway- (37 percent) and transit- (19 percent) specific comments. The large proportion of bicycle and pedestrian-related comments reflect the region's interest in improving active transportation infrastructure. These comments were analyzed to identify recurring trends and highlight community concerns.

Review of the comments revealed residents consistently emphasized the importance of connectivity, safe bicycle facilities, and equitable access to their daily destinations. These priorities are deeply interconnected, reflecting a broader call for safe and inclusive transportation systems supportive of diverse travel needs.

The following summarizes bicycle related comments through the **Map Your Experience** tool.

On-Street Bicycle Infrastructure Deficiencies

Many streets lack dedicated bikeway facilities, such as bike lanes separated from motor vehicle traffic, resulting in bicyclists having to share the street with vehicles. Residents reported existing bike infrastructure ends abruptly, lacks physical separation from fast-moving traffic, or is poorly maintained, and often filled with debris. Rumble strips, potholes, and cracked asphalt make riding on the shoulder of lower volume roadways dangerous, even for more experienced bicyclists. Feedback revealed a strong desire for protected, continuous bike lanes, especially across major barriers such as highways, railroads, and rivers.



Bicyclist riding on-street with traffic in Fort Worth.

Safety and Comfort Enhancements

Residents report poorly illuminated streets, sidewalks, trails, and intersections create unsafe conditions at night. Inadequate lighting discourages bicycling as respondents report feeling unsafe near major roadways due to low visibility and concerns about crashes.

A recurring theme from the feedback was the perceived danger posed by major arterials with high traffic volumes, multilane intersections, and high-speed traffic. Residents reported unsafe crossing conditions at intersections, especially at major roadways. Many respondents noted specific intersections where crashes and near-misses have occurred and advocated for enhanced safety infrastructure. Addressing these safety concerns is not only a matter of improving mobility but also of preventing future injuries and fatalities.



Bicyclist riding on-street with poor lighting conditions.

Trails Network Connectivity

Residents expressed widespread support to expand and create more connections within the trail network. Trails are viewed as some of the safest and most appealing infrastructure for bicycling, yet many trails do not connect to daily destinations. Trails often end abruptly or are missing short connections to neighborhoods, schools, and other trails, discouraging residents from bicycle commuting and recreational riding.

Community Concerns and Equity

Residents identified infrastructure gaps and unsafe conditions disproportionately affect vulnerable groups such as students, seniors, low-income residents, and people with disabilities. In areas near schools and universities, unsafe crossings were cited as areas of concern. Residents in historically underserved communities emphasized the need for affordable, safe, and accessible transportation alternatives to reach jobs, schools, and essential services. Addressing these inequities is viewed as vital for ensuring investments in infrastructure benefit all residents, not just those with access to private vehicles.

2. Existing Conditions

This section provides an overview of bicycle crash data, safety education, and legislation addressing bicycle safety. The measures undertaken and proposed at the federal, State, and regional level which are relevant to the Dallas-Fort Worth region are highlighted in the following sections.

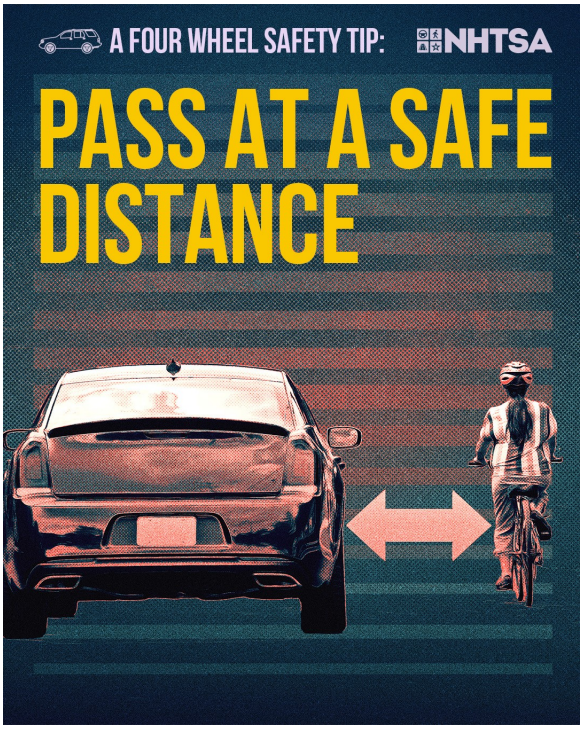
2.1 Bicycle Safety in the United States

The National Highway Traffic Safety Administration (NHTSA), part of the U.S. Department of Transportation, promotes a safety campaign and tracks pedalcyclist (bicycle, tricycle, and unicycle) crashes and fatalities nationwide, detailed as follows.

2.1.1 Bicycle Safety Education in the U.S.

NHTSA promotes campaigns and provides resources to local governments and advocates aimed at educating drivers, pedestrians, and bicyclists about various aspects of traffic safety. The bicycle safety program highlights the vulnerability of bicyclists when involved in a crash with a motor vehicle, and the importance of understanding the rules of the road, wearing a properly fitting helmet, and riding predictably and defensively.[5] NHTSA promotes safe motorists' and bicyclists' behavior through education by conducting public awareness campaigns like National Bike Month.





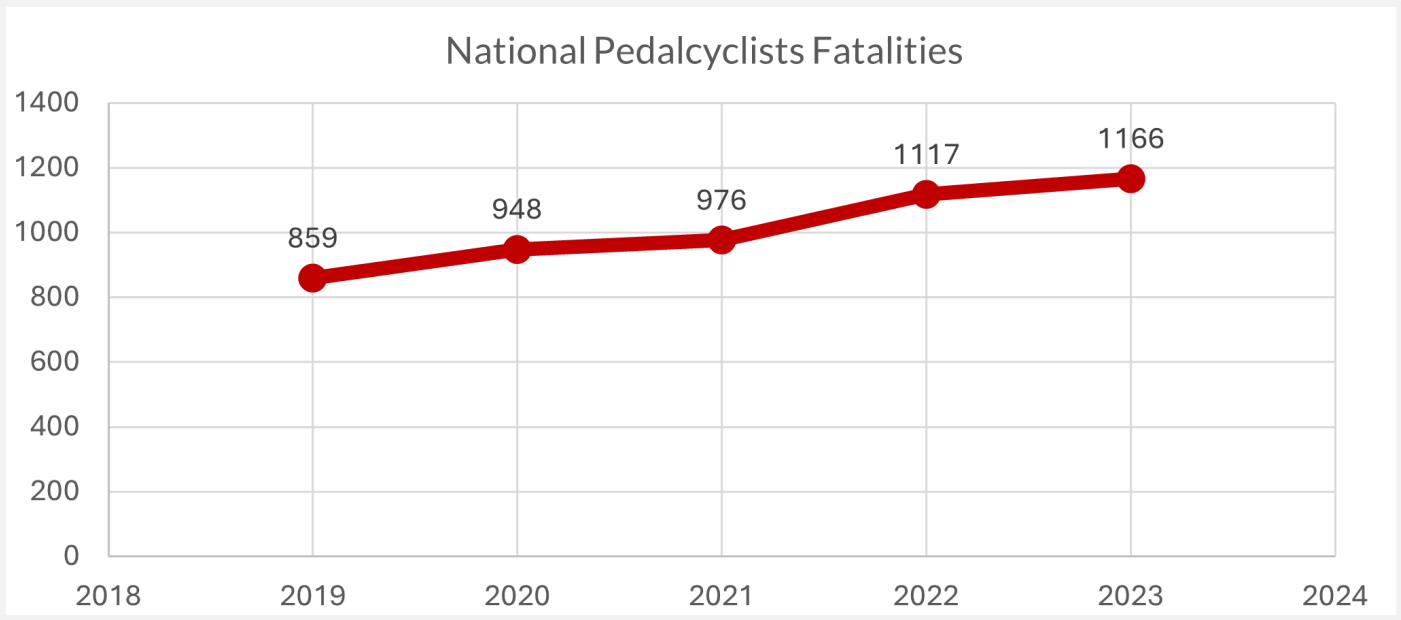
NHTSA bicycle safety campaign flyers (Source: National Highway Traffic Safety Administration).

2.1.2. Bicyclist Crash Trends in the U.S.

The number of bicyclists who died in traffic crashes nationwide has trended upwards for over a decade.[6] In 2023, bicyclist fatalities nationwide reached a decade-long high of 1,166 deaths, accounting for three percent of all traffic fatalities.[7] From 2019-2023, there were 5,066 bicyclist fatalities nationwide, averaging 1,013 deaths a year (See Figure 8).[8]

Bicyclist injuries are also disproportionately high compared to other modes of travel due to the lack of physical protections offered from a motor vehicle. Further, bicyclist injuries are generally more severe when involved in a crash with an SUV due to the large size and shape of the front of these vehicles.[9]

Figure 8: National Pedalcyclist Fatalities (2019-2023)



It is important to note research suggests bicycle and pedestrian crashes with motor vehicles are underestimated nationwide in State motor vehicle crash reporting systems due to underreporting, with many incident locations occurring outside the trafficway.[10] Additionally, State crash reporting systems do not account for "near miss" or "close call" scenarios between bicycles and motor vehicles. These experiences are often traumatic for cyclists and affect cyclists' behavior. Information about near misses could help illuminate additional dangerous areas and other contributing factors.[11]

Despite limitations associated with underreporting motor vehicle-bicycle incidents, and lack of information related to close calls, analysis of crash reports provides insight as to the crash locations, demographics, types of crashes, time of day when the incidents are occurring, and the contributing factors.

2.2 Bicycle Safety in Texas

Several strategies have been utilized and proposed to increase safety for bicyclists in Texas, including legislation, promoting a bicycle safety education campaign, and monitoring the number of bicyclist crashes and fatalities, which are further highlighted in this section.

2.2.1 Bicycle Safety Legislation in Texas

Traffic laws facilitate safe travel behavior for all roadway users by mandating everyone who uses the roads to learn and follow predictable traffic movements. The following are excerpts from the State transportation code pertaining to bicyclist travel behavior relevant to both motorists and non-motorists:

- Texas law classifies bicycles as vehicles, giving bicyclists the same rights and duties as motor vehicle drivers (Sec. 551.101).
- Bicyclists moving slower than the other traffic shall ride as near as practicable to the right edge of the roadway, unless the following conditions are met:
    - The bicyclist is passing another vehicle moving in the same direction
    - The bicyclist is preparing to turn left
    - The bicyclist is prevented from safely riding next to the edge of the roadway due to conditions or hazards (Sec. 551.103.)
- Bicyclists may ride in the center of the travel lane if the outside lane is less than 14 feet in width and does not have a bicycle lane or the travel lane is too narrow for a bicycle and motor vehicle to safely travel side by side (Sec. 551.103.).
- When riding at night, a bicycle is required to be equipped with a front white light and a rear reflector or red light (Sec. 551.104).

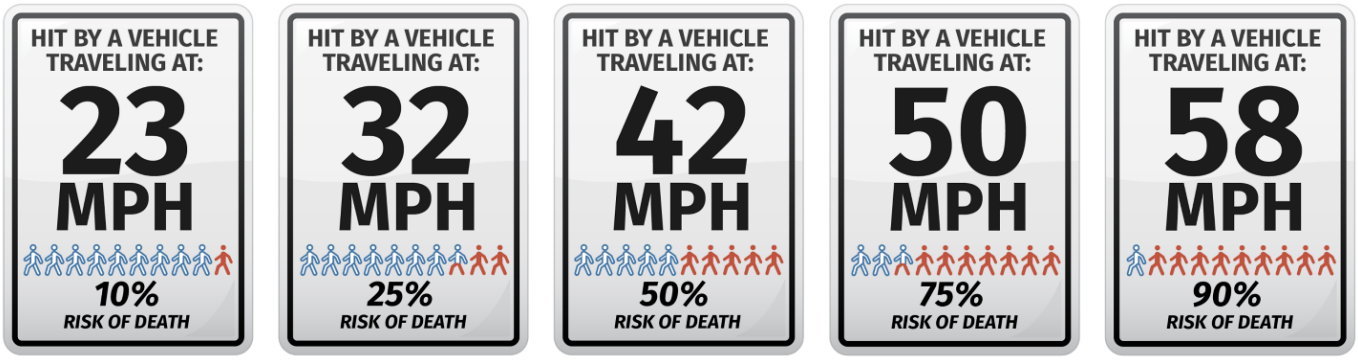
Additional legislative measures are desirable to further ensure the safety and comfort of bicyclists on roadways, with such recommendations for Texas State legislation to improve bicyclist safety as outlined in **Section 3.6** of this Plan.

Speed Limits in Texas

In Texas, prima facie (pry-muh-fay-shee) speed limits are defined under Section 545.352 of the Texas Transportation Code. The term "prima facie" means "on its face" or "at first glance," and under traffic law, refers to travel speeds that are presumed to be lawful unless proven otherwise. If a driver exceeds the designated limit, it is considered prima facie evidence the speed was unreasonable and therefore unlawful. On roads in urban areas the prima facie speed limit in Texas is 30 mph.

Bicyclists are sensitive to the speed of motor vehicles in the event of a crash similar to other vulnerable road users such as pedestrians. As shown in Figure 9, with a vehicle traveling at 32 mph, a pedestrian's risk of death is 25 percent, whereas the risk of death at 23 mph is reduced to 10 percent.[12] While no equivalent research findings are available specifically for bicyclists, these risk of death statistics are provided to illustrate how speed is a significant contributing factor to a bicyclist's level of injury when involved in a crash with a motor vehicle.

Figure 9: Impact speed and a Pedestrian's Risk of Death



Source: United States Department of Transportation

For an on-system roadway, local government staff may coordinate with TxDOT District staff and follow the agency's *Procedures for Establishing Speed Zones* document to evaluate decreasing the posted speed limit in locations with safety concerns.[13] TxDOT's resource outlines the steps for conducting a speed zone study, calculating the 85th percentile speed, and the approval process if a change is agreed upon.

Municipalities may reduce the posted speed limit on local streets to 25 mph per Section 545.356 of the Texas Transportation Code as discussed in **Section 3.6.3.**

2.2.2. Bicycle Safety Education in Texas

TxDOT promotes a Statewide bicycle safety campaign, *Be Safe. Bike Smart,* which includes video and print publications with a focus on encouraging safe bicyclist and motorist behaviors on the road. For bicyclists, the campaign centers on being safe and biking smart by following the rules of the roads such as riding with traffic, obeying stop signs and signals, using hand signals, and staying visible at night. For drivers, the campaign encourages passing a bicyclist at a safe distance, yielding the right of way to bicyclists, and obeying the posted speed limit and paying attention to the road.[14]



Bicycle Safety Campaign flyer (Source: Texas Department of Transportation)

2.2.3. Bicyclist Crash Trends in Texas

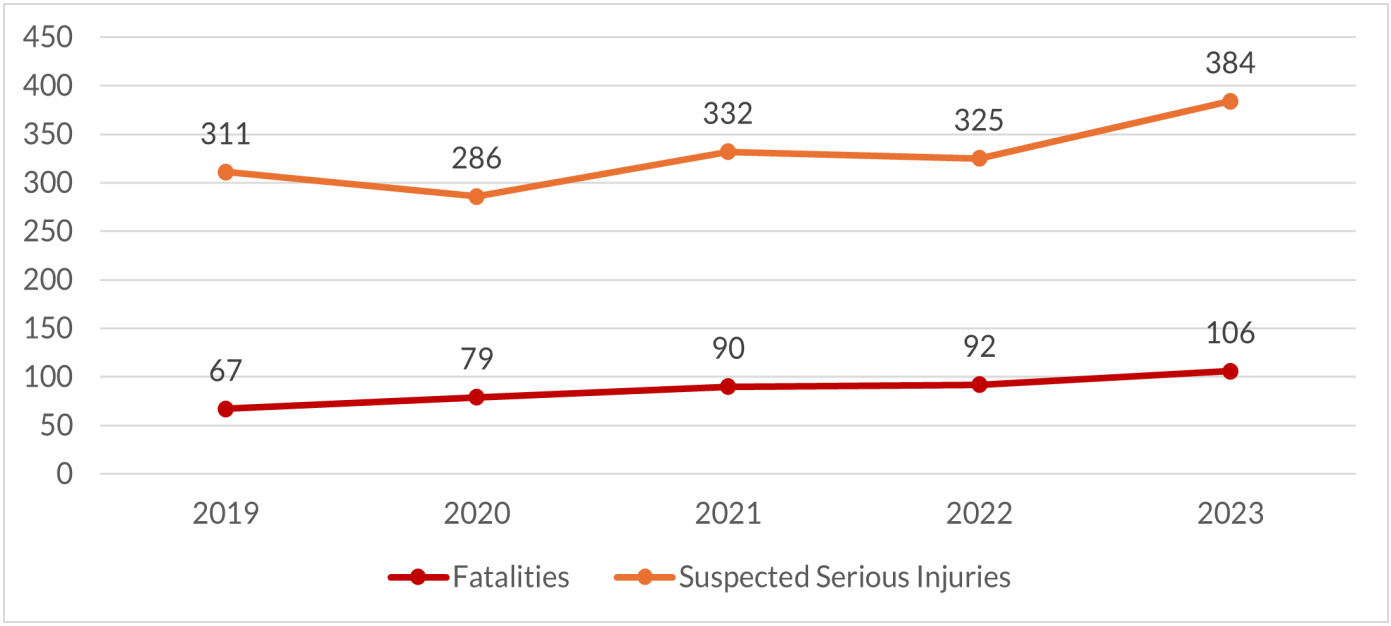
From 2019-2023 a total of 11,950 reported motor vehicle crashes involving bicyclists occurred in Texas. Of those reported crashes, 434 were fatal to bicyclists, accounting for nine percent of bicyclist fatalities nationwide, and 1,638 bicyclists experienced suspected serious injuries, as summarized in Table 4.

Table 4: Bicyclist Fatalities, Serious Injuries, and Total Crashes in Texas 2019-2023

Year	Fatalities	Suspected Serious Injuries	Total Crashes
2019	67	311	2,553
2020	79	286	2,175
2021	90	332	2,268
2022	92	325	2,349
2023	106	384	2,605
Total	**434**	**1,638**	**11,950**

Like the National trend, bicyclist fatalities steadily increased in Texas, peaking at 106 deaths in 2023. Suspected serious injuries follow a non-linear pattern to a peak in 2023 at 384 bicyclists, as summarized in Figure 10.

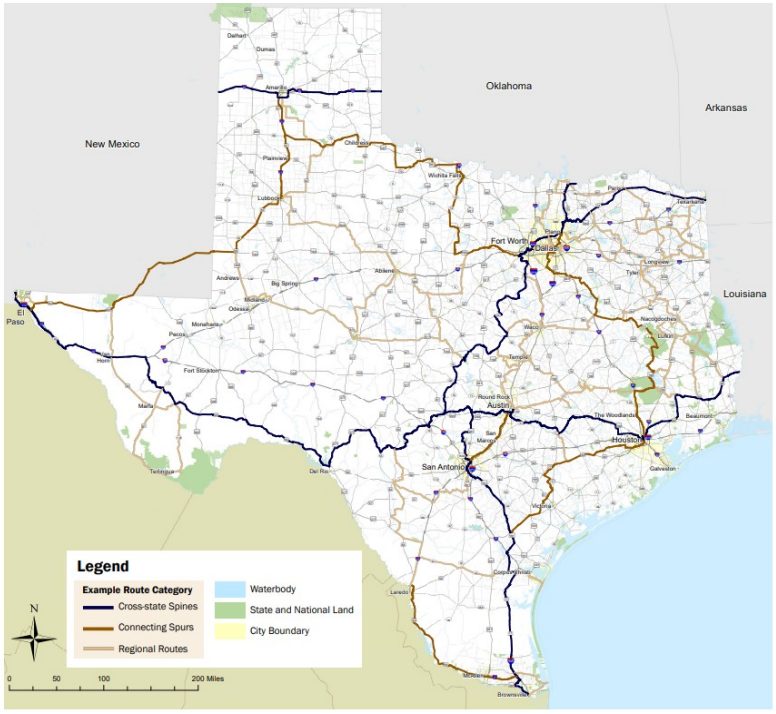
Figure 10: Bicyclist Fatalities and Serious Injuries in Texas (2019-2023)



2.2.4 Statewide Bicycle Planning

In 2018, TxDOT completed the Texas Bicycle Tourism Trails Study intended to investigate the development of a statewide bicycle tourism trails network.[15] The final report documents TxDOT's recommended bikeway accommodations and design criteria for bikeways developed as bicycle tourism trails in Texas. The Study also outlines bikeway design recommendations, challenges, and considerations for various bikeway types. TxDOT supports the development of safer bicycle tourism trails for users of all ages and all abilities. In addition to the economic benefits of the statewide network, the Study highlights the transportation and travel benefits of the statewide network to reduce congestion, improve access to transit stations, and increases to bicycle safety.

Figure 11: Statewide Trails Network



The recommended statewide network alignments are identified in Figure 11 and Figure 12 and include:

Cross-state Spines

- Routes of statewide significance which connect to other states and link major urban areas which may be candidates for US Bicycle Route System (USBRS)

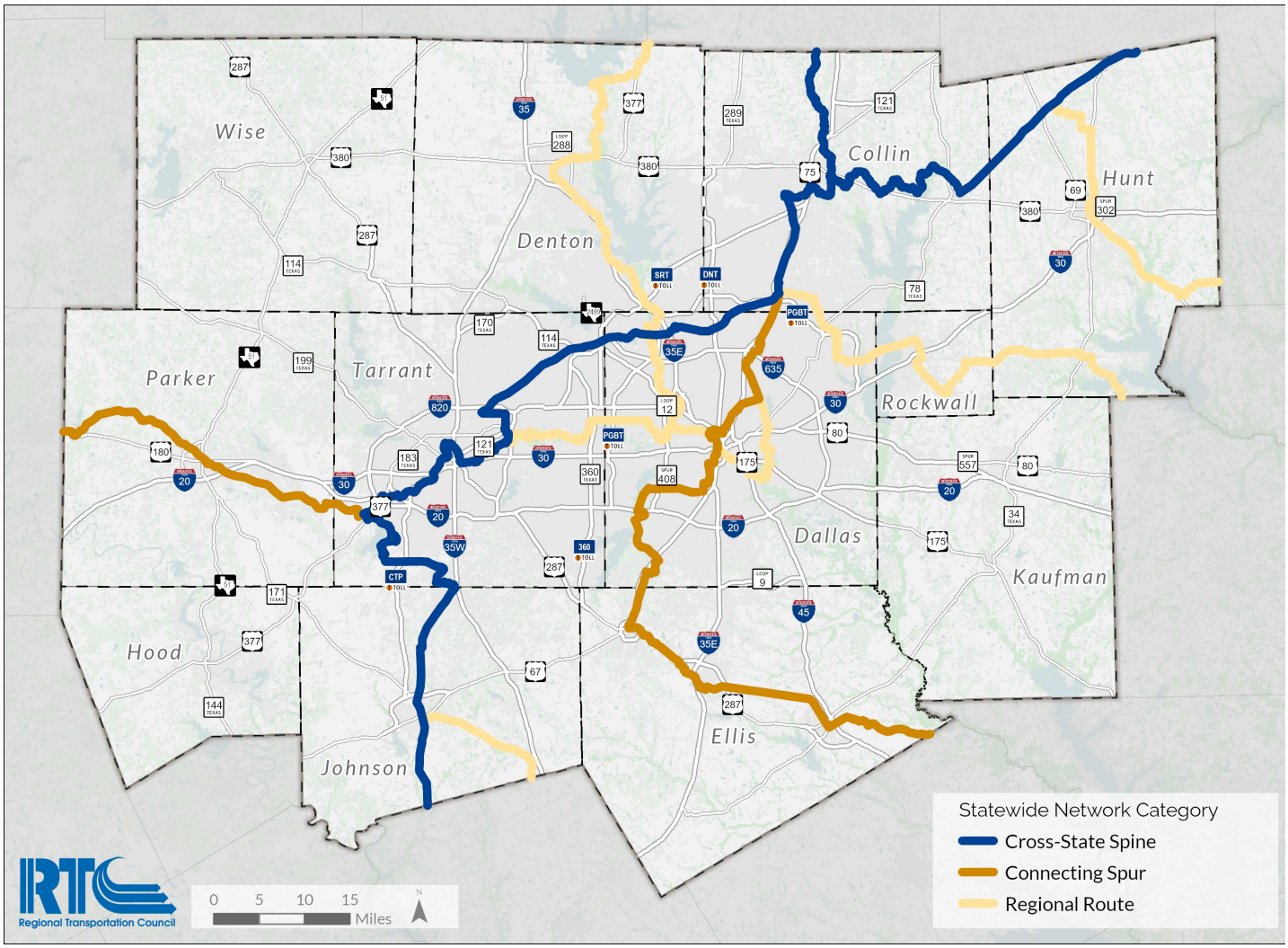
Connecting Spurs

- Routes of statewide significance which connect major urban areas, state/national parks, and other destinations, and provide important links between cross-state spines

Regional Routes

- Routes of regional significance that connect to scenic areas and frequently form regional loops

Figure 12: State Bikeway Network Alignments in North Texas



TxDOT District Bike Plans

In 2026, TxDOT initiated the development of district bicycle plans for the State's on-system transportation network - roads owned, operated, and managed by TxDOT – in the Dallas, Fort Worth, and Paris Districts.[16] These Plans are intended to guide the development of safe, thoughtfully designed well-maintained facilities for bicyclists within each district and between districts, providing connectivity across the state. Once completed, each District Plan will identify the needs for bicycle infrastructure on the state highway system, prioritize locations for bicycling improvements, and identify what role different routes should play in the bicycling network.

2.2.5. Micromobility Devices (Electric Bicycles and Electric Motorcycles)

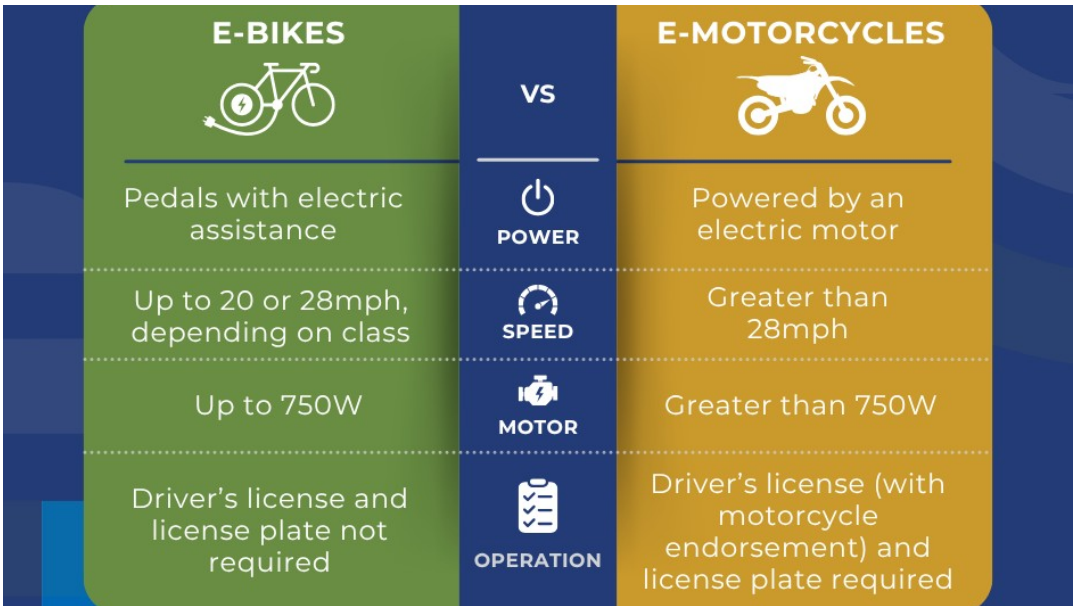
Electric bicycles are growing in popularity across Texas, as the electric motor assistance allows riders to travel farther and faster than on a traditional bicycle. Under the Texas Transportation Code § 664.001, an electric bicycle is defined as a bicycle equipped with pedals and an electric motor with an output of 750 watts or less. The State classifies electric bicycles into three categories based on the type of pedal assistance and maximum assisted speed:

- **Class 1: Equipped with a pedal-assist only motor that cuts off when the bicycle reaches 20 mph.**
- **Class 2: Equipped with a motor that may propel the bicycle without pedaling and cuts off when the bicycle reaches 20 mph.**
- **Class 3: Equipped with a motor that provides assistance only while the rider is pedaling, cutting off when the rider stops pedaling or when the bicycle reaches 28 mph.**

Electric bicycles are subject to the same rules of the road as traditional bicycles, with riders holding the same rights and duties as motor vehicle operators. Reportable motor vehicle crashes involving an electric bicycle are included in the crash analysis of this plan.

Also gaining popularity across the region are e-motorcycles, commonly known as e-motos. While e-motos may resemble e-bicycles, an e-moto is typically heavier, features motors with outputs exceeding 750 watts, and are capable of speeds above 28 mph and may exceed 60 mph (see Figure 13). Due to their higher speeds and minimal or absent pedal assistance, e-motos do not qualify for classification as electric bicycles in Texas. As such motor vehicle crashes involving e-motos are not included in this analysis.

Figure 13: E-Bicycle and E-Motorcycle Characteristics



Source: City of Mercer Island, WA

2.3. Bicycle Safety in the North Central Texas Region

The MPO promotes a regional safety campaign and publishes bicycle safety data as resources and tools to encourage safe bicyclist and driver road interactions and depicts areas with a high density of bicycle crashes and fatalities. RTC staff also tracks the progress towards achieving zero fatalities and serious injuries by 2050. Many local jurisdictions have a similar safety goal and have prepared comprehensive safety action plans, Vision Zero policies and manuals, and other ordinances related to bicycle and traffic safety to achieve fatality and crash reduction goals, as highlighted in the following sections.

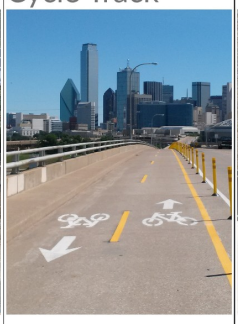
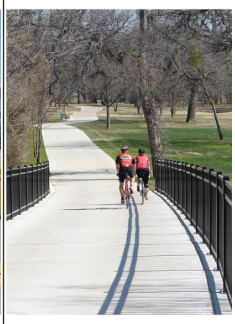
2.3.1. Existing Bicycle Network in the North Central Texas Region

RTC staff compiles locally adopted master plans for active transportation infrastructure (including bicycle facilities) throughout the region and coordinates with local jurisdictions to update the bikeway inventory of existing, funded, and planned facilities.

The existing regional bikeway network is over 1,755 miles and consists of both on-and off-street bicycle facilities (see Figure 14). Nearly 80 percent of bikeways are off-street facilities, or shared use paths, commonly known as trails or side paths (1,378 mi.). These facilities are physically separated from vehicle traffic, and generally extended through parks or natural open spaces or adjacent to the roadway, utility corridors, and rail lines. For shared use paths to be included in this inventory, they must be a paved path at least ten feet in width, per AASHTO guidelines, to accommodate bicycle, pedestrian, and micromobility travel.

Figure 14: Inventory of Existing/Funded Bicycle Facilities in the MPA

Bikeway Facility Inventory

On-Street Facility					Off-Street Facility
Shared Lane	Bicycle Lane	Buffered Bicycle Lane	Separated Bicycle Lane	Two-Way Cycle Track	Shared Use Path
					
Existing/ Funded Mileage					
132 mi	182 mi	34 mi	17 mi	11 mi	1,378 mi

Total Mileage: 1,755 (December 2025)

Existing on-street bicycle facilities currently account for 20 percent of the bikeway network (377 miles) in the region. These on-street facilities are categorized by the level of visual and/or physical separation they provide from vehicle traffic. More than one-third of bikeways are shared lane facilities which provide no form of visual or physical separation from vehicle traffic. These shared lanes consist of vehicle travel lanes with pavement markings alerting road users to the lateral position of where bicyclists are likely to occupy within the traveled way.[17] Depending on the vehicle volume and speed of the road, these facilities can be perceived to be unsafe or uncomfortable for bicycling by the general population (as discussed in **Section 1.4.2**).

Dedicated bicycle lanes constitute almost half (182 mi.) of the on-street bikeway network. Bike lanes provide an exclusive space for bicyclists designated by pavement markings and signage. They are located adjacent to motor vehicle lanes traveling in the same direction as the vehicular traffic.[18] Since striped bike lanes do not provide a physical barrier from vehicle traffic, they are also perceived by the general population to be less safe or more uncomfortable for bicycling, than bicycle facilities with more separation from vehicle traffic.

Buffered bicycle lanes (34 mi. of the regional bikeway network) are similar to dedicated bicycle lanes but provide more visual separation since they include a buffer of pavement markings between the vehicle travel lane and the dedicated bicycle lane. Depending on vehicle speed and volume, right of way constraints, and bicycle lane and buffer widths, buffered bicycle lanes may be a more comfortable design solution for the interested but concerned user. However, since buffered bicycle lanes do not provide a physical barrier, vehicle traffic may still encroach on the bicycle facility while driving or parking decreasing the effectiveness, safety, and comfort of the facility.

Separated bicycle lanes (17 mi.) and two-way cycle tracks (11 mi.) are on-street bicycle facilities which separate vehicle and bicycle traffic by way of physical barriers (delineator posts, concrete separators, planters, etc.). These types of facilities are often viewed as more comfortable facilities by the general population since they offer a dedicated space for bicyclists with a vertical element to discourage vehicles from entering the bicycle facility. More permanent barrier solutions are preferred by interested but concerned users; however, flexible delineator posts may be a more feasible and quick solution due to budget constraints and maintenance.

Shared use paths (trails) are typically identified by all ages and abilities of bicyclists to have the highest level of comfort and safety. While often used for recreation purposes, paths provide transportation utility for commute trips if they accommodate direct connections from home to daily destinations (see Figure 15). Supporting the regional trail network, on-street bikeway facilities can provide more direct connections to origins and destinations; yet public feedback indicated concerns about perceived unsafe or uncomfortable on-street facilities due to a lack of physical separation from vehicle traffic. To increase bicycle safety and encourage bicycling, existing on-street facilities should be enhanced to offer greater separation from vehicle traffic. Planning and implementation of new bikeway connections should consider local land use and road context, community need, and the target design user-- the interested but concerned bicyclist (see **Section 1.4.2**).

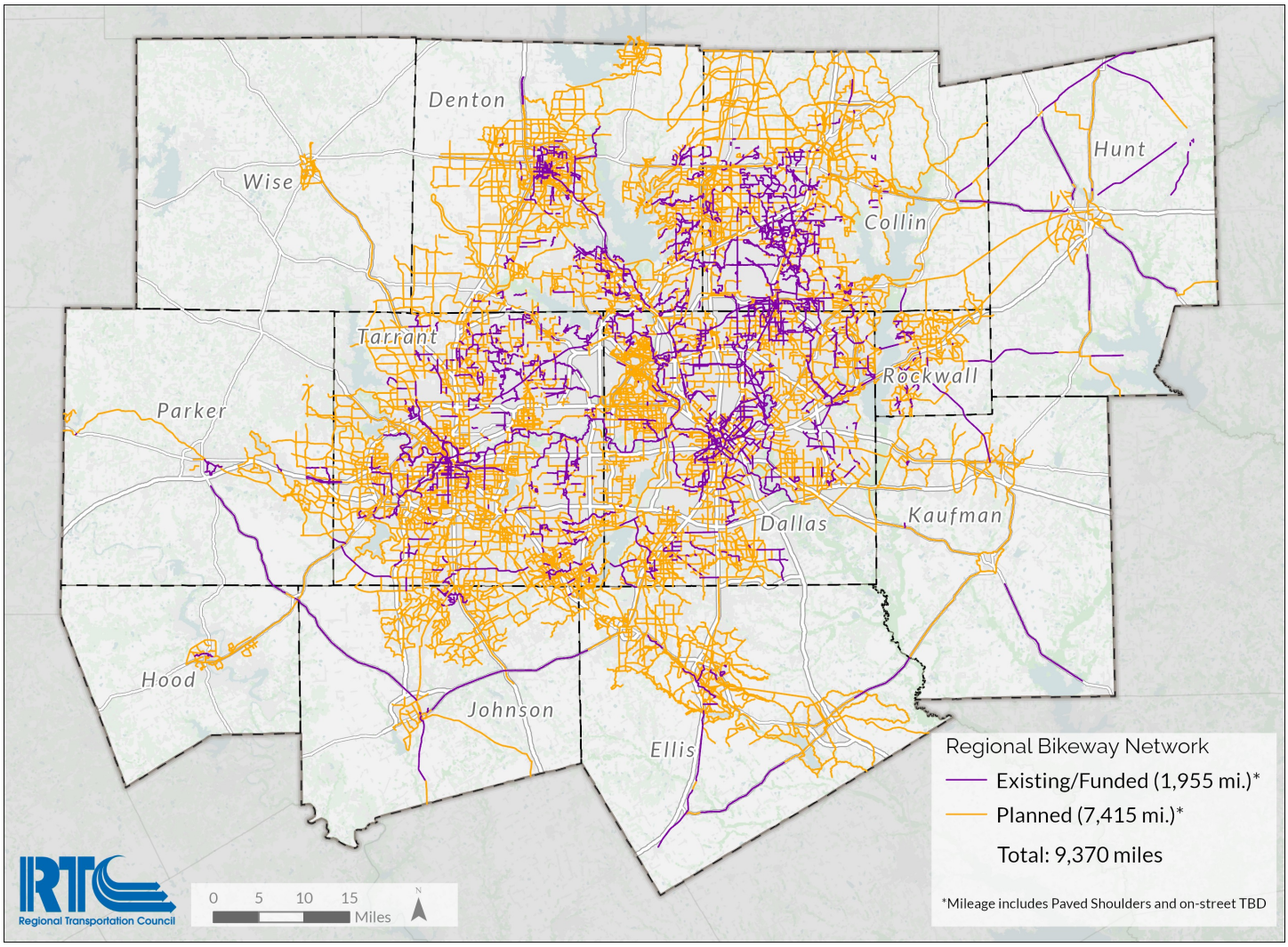
Figure 15: Shared Use Path Providing Access to a Rail Station



2.3.2 Future Bicycle Network in the North Central Texas Region

In addition to the existing/funded bicycle network in the region, there are over 7,400 miles of planned bicycle facilities in the MPA. The bicycle network consists of community shared use paths, regional shared use paths (also referred to as the Regional Veloweb), and the on-street bikeway network (including on-street wide shoulders in rural areas). This network identified in *Mobility 2050* (see Figure 16) is a compilation of more than 84 local adopted bicycle and trail master plans.

Figure 16: Combined Regional Veloweb, Community Paths, and On-Street Bikeway Network



2.3.3 Regional Pedestrian and Bicycle Traffic Count Program

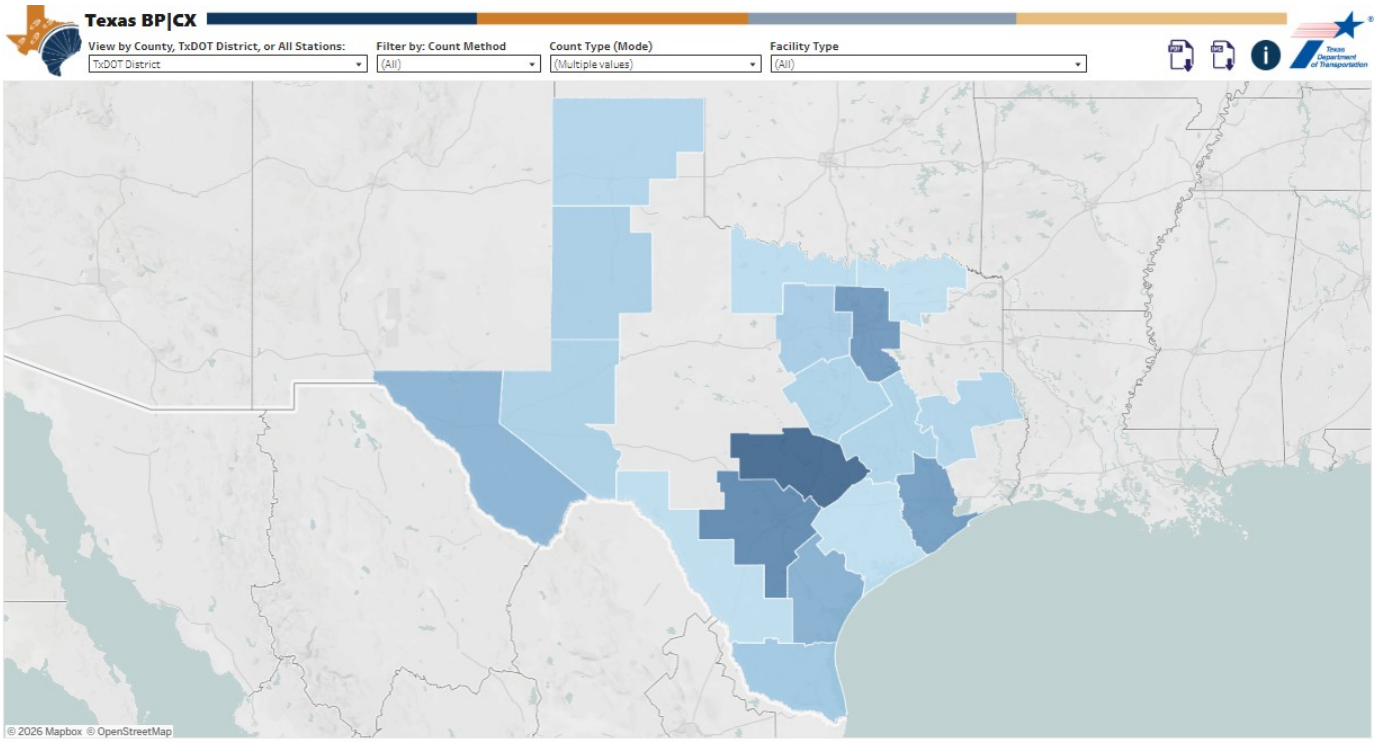
The MPO collects data on pedestrian and bicycle facility usage throughout the region to support effective pedestrian and bicycle planning. Data related to actual non-motorized travel volumes helps:

- Inform the public and decision makers about actual usage and travel patterns
- Analyze trends
- Evaluate the impacts of specific projects (before and after) with mobile counts

There are over 50 count stations installed on trails across the Dallas-Fort Worth region, spread across 14 cities in four counties. RTC staff actively monitors data collected at locations primarily used for transportation purposes, while the remainder of the count locations are located in parks and considered primarily recreational-oriented trips.

The most recent regional patterns and trends are highlighted in the regional Bicycle and Pedestrian Trail Use Summary, 2024-2025.[19] Additionally, RTC staff provides data for TxDOT's Texas Bicycle and Pedestrian Count Exchange, a centralized map-based interface to easily access and visualize count data across the state, including the North Central Texas region (see Figure 17).[20] The Bicycle and Pedestrian Count Program provides a wealth of best practices and guidance on bicycle and pedestrian count data collection.[21]

Figure 17: Texas Bicycle and Pedestrian Count Exchange (BP|CX)



2.3.4. Bicycle Safety Legislation and Policy in the North Central Texas Region

Several local governments in the region have taken steps to improve bicycle safety in their communities through policy, plans, and ordinances.

Many cities address bicycle safety through policy and safety action plans. Several cities have completed or are in the process of developing safety action plans. Currently, four of the region's largest cities by population have adopted Vison Zero and comprehensive Safety Action Plans to reduce fatalities and serious injuries, which include High Injury Networks to prioritize projects for vulnerable road users. These cities include:

- City of Dallas
- City of Denton
- City of Fort Worth
- City of Arlington

Through the USDOT Safe Streets for All (SS4A) competitive grant program, more cities in the region have been awarded funding to develop similar safety plans.

Several municipalities are working to improve bicycling safety and comfort through Complete Streets (Context Sensitive) and related policies.[22] As of December 2025, seven municipalities have adopted these policies to prioritize the needs of all road users, including bicyclists:

1. City of Dallas
2. City of Fort Worth
3. City of Lewisville
4. City of Richardson
5. City of Terrell
6. City of Weatherford
7. Town of Flower Mound

Addressing bicycle safety requires a comprehensive approach. Policy establishes the framework for bicycle safety improvements and plans provide actionable steps to achieve safety goals.

Another key provision municipalities can implement to enhance bicycle safety is through local ordinances. For example, the Town of Flower Mound enacted an ordinance to reduce the posted speed to 25 mph citywide in residential neighborhoods.[23] Streets where vehicles travel at a slower speed are more comfortable for bicyclists of all ages and abilities, but most importantly, reduce the risk of fatality and serious injury if the bicyclist is involved in a crash with a motor vehicle (see **Sections 1.4.2 and 2.2.2**).

Over a 15-year period (2006-2021), Flower Mound went through several iterations of the speed limit ordinance to reduce the posted speed limit to 25 mph in residential neighborhoods.

- In 2006, Flower Mound's Town Council, under House Bill 87, declared the prima facie speed limit as unreasonable or unsafe for roadways within one-quarter mile of a school or major street construction projects that were not included in the Thoroughfare Plan. Speed limits were lowered to 25 mph on a street-by-street basis.
- In 2010, the policy was updated to reduce speed limits on a subdivision-by-subdivision basis, and an exception process was developed for subdivisions that fell outside of the established one-quarter-mile radius.
- In 2021, the ordinance to reduce speed on residential streets passed. Over an 18-month period, new signage was installed at the entrance of residential neighborhoods to establish a 25-mph speed limit for all streets within the subdivisions.

This ordinance is unique to the Town of Flower Mound but can serve as an example of the process of reducing speed on residential streets to improve safety for vulnerable road users for local jurisdictions. That said, the process for reducing the prima facie speed at the local level can be long due to the current State legislation mandating traffic studies. Changing the State legislation to allow local jurisdictions to reduce speed limits under 30 mph without traffic studies is a more effective and efficient strategy to enhance safety for vulnerable road users (see **Section 3.6.3).**



Neighborhood with posted speed limit of 25 mph. Source: Getty Images

2.3.5. Bicycle Safety Education in the North Central Texas Region

The Look Out Texans safety campaign promoted by the MPO aims to increase safety for all road users by educating North Texans on their rights and responsibilities when walking, biking, or driving. Campaign messaging consists of 21 safety tips to promote safe travel for all North Texans. Other campaign activities include paid advertising, outreach events, local social media campaign coordination, and online educational resources.

The safety tips recommend safe and predictable behaviors while using the road, being alert and looking out for other users, and being visible.

- Tip #8: Bicyclists are required to stop and yield at traffic signals and stop signs (Figure 18).
- Tip #9: Use hand signals to let others know when you're turning, changing lanes, or stopping.
- Tip #10: Be alert.
- Tip #11: Ride as far to the right as practicable.
- Tip #12: Always ride in the same direction as traffic.
- Tip #13: Claim your space at intersections.
- Tip #14: Be seen while riding at night.

Figure 18: Look Out Texans Safety Tip #8



2.3.6. Regional Cooperative Purchase Program for Bicycle Safety Infrastructure

TxShare is a cooperative purchasing program, through the MPO, designed to empower public sector and nonprofit entities by allowing them to pool their collective buying power, significantly streamline procurement processes, and achieve substantial cost reductions on essential goods and services. Member organizations participating in TxShare can utilize TXShare contracts which were established through a fully competitive procurement process that adheres to strict regulatory standards. TXShare offers a diverse portfolio of contract categories in addition to the Bicycle Safety Infrastructure Contract.

The Bicycle Safety Infrastructure Contract has awarded-suppliers in the following categories:

Product/Service Category #1: Provide Customizable precast concrete traffic lane barriers (or parking stops) to separate bike lanes from vehicular lanes. Multiple size varieties are desired to account for different street sizes, traffic levels, and/or other contexts.

Product/Service Category #2: Provide Custom Casting Options for concrete lane barriers (or parking stops) to separate bike lanes from vehicular lanes.

Product/Service Category #3: Provide Non-Concrete Lane Barriers, traffic control and safety products for bicycle safety.

Product/Service Category #4: Provide Bicycle Traffic Signal Improvements including active and passive detection of bicyclists at intersection.

Product/Service Category #5: Provide Signage Services that increase the safety of bicyclists at both intersections and non-intersection locations.

Product/Service Category #6: Provide Installation Services for any of the products/services referenced.

Product/Service Category #7: Provide Shared Lane Markings (also known as sharrows).

Product/Service Category #8: Provide Bicycle Safety Infrastructure otherwise not anticipated in the RFP.[24]

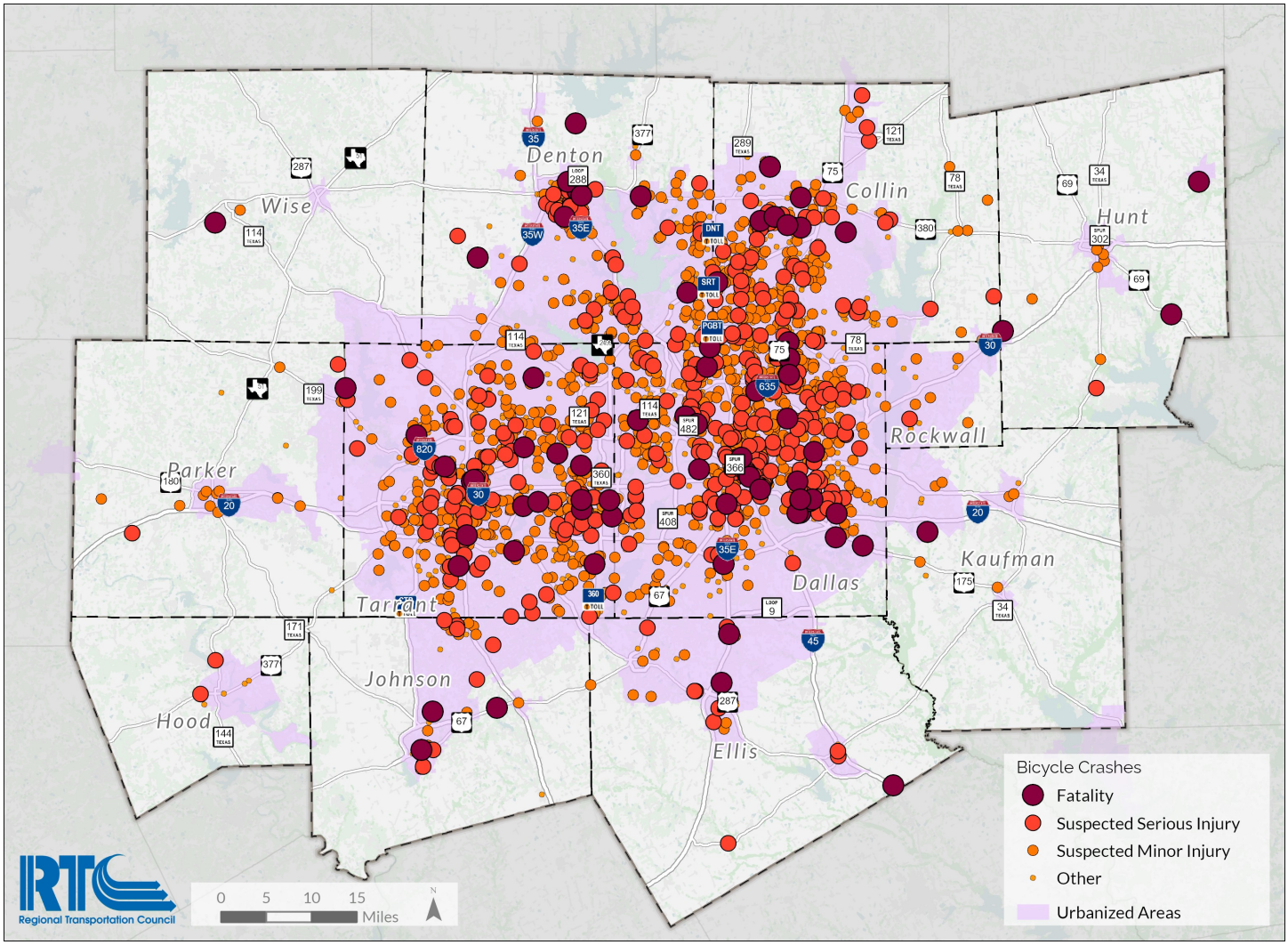
In addition to the cost effective and streamlined advantages of TxShare, purchasing bicycle infrastructure products and services through the program promotes regional consistency. Bicyclists and drivers shared familiarity with standardized bicycle infrastructure encourages compliance, predictability, and safer interactions between bicycling and driving modes across the region. Additional information on Bicycle Safety Infrastructure is available at: https://txshare.nctcog.org/available-contracts/bicycle-safety-infrastructure.

2.3.7. Bicyclist Crash Trends in the North Central Texas Region

The crash data analyzed for this Plan is from the years 2019-2023, which is referred to as the "analysis period" henceforth. TxDOT's Crash Records Information System (CRIS) was used in collecting and analyzing the 2,471 crash records. Verification of all data, including all query fields and filters, can be found in **Appendix B.**

The crash data analyzed for this Plan includes only reportable motor vehicle traffic crashes involving a bicyclist. This data does not include scooter, e-motorcycles (e-motos), or other micromobility devices. The reported crashes used for this analysis were limited to crashes occurring within the roadway, thus excluding bicyclist collisions with vehicles on sidewalks, driveways, or in parking lots, and with a property damage threshold of $1,000 or more to the property of any one person. The general location of all reported crashes involving bicyclists, by crash severity, are reflected in Figure 19.

Figure 19: Bicycle Crash Location in the MPA (2019-2023)



During the analysis period there were 2,471 reported motor crashes involving bicyclists, consisting of 74 fatal crashes, 355 suspected injury crashes, 1,182 minor injury crashes, and 860 other severity crashes (see Table 5). Crashes classified as "Other" include the crash severities of possible injury, no injury, or unknown injury.

Table 5: Bicycle Crashes by Crash Severity in the MPA (2019-2023)

Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crashes	Other Crashes	Total Crashes
2019	7	61	230	201	499
2020	12	66	193	195	466
2021	15	83	222	167	487
2022	22	64	253	143	482
2023	18	81	284	154	537
Total	**74**	**355**	**1,182**	**860**	**2,471**
Average per Year	15	71	236	172	494

A total of 2,510 bicyclists were involved in the 2,471 reported bicycle crashes. The 74 fatal crashes and 355 suspected serious injury crashes account for 73 bicyclist fatalities, one motorist fatality, and 360 bicyclist suspected serious injuries (see Table 6).

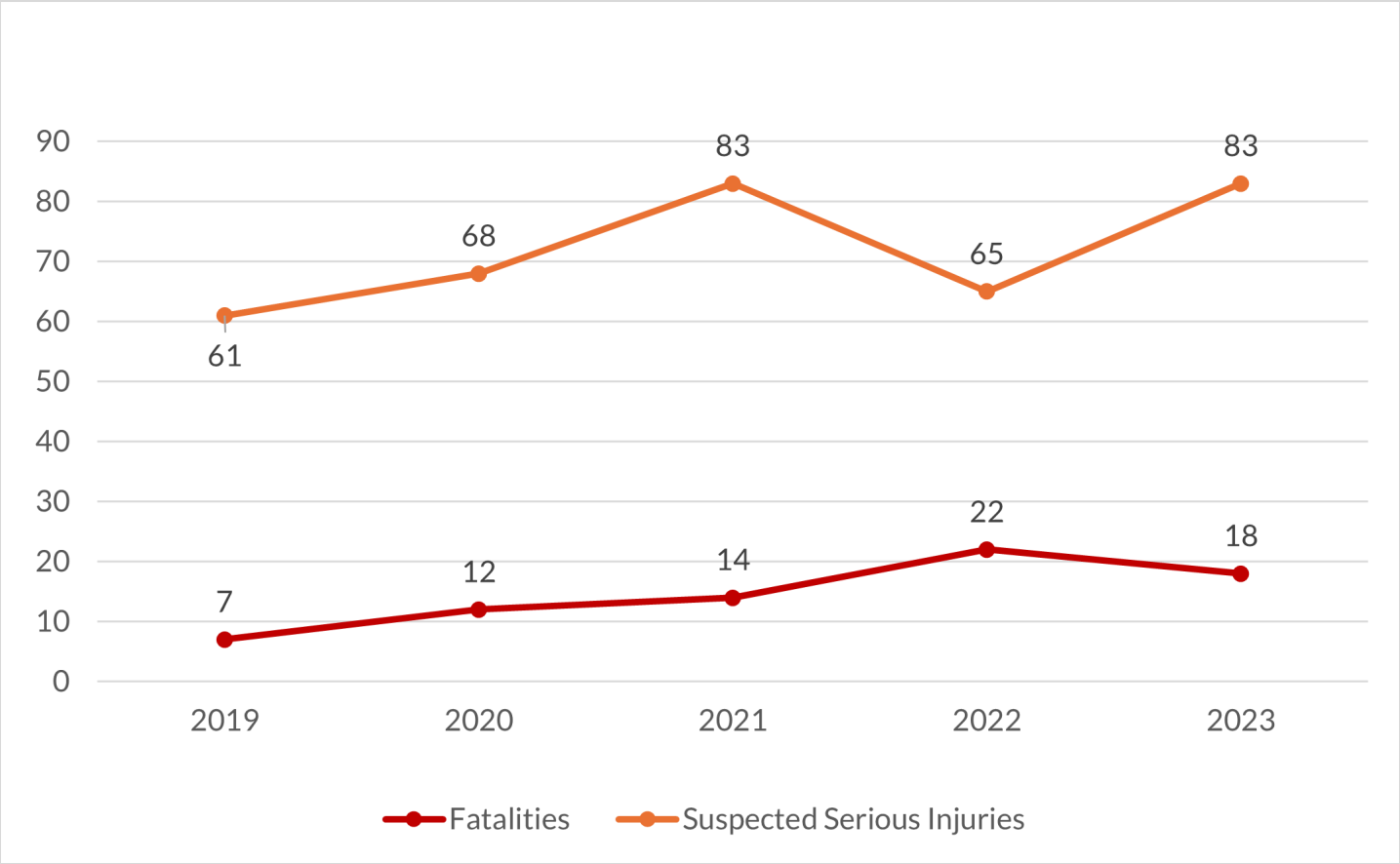
The number of individual bicyclist fatalities and injuries differs from the number of crashes because a single crash can involve multiple people (in some cases multiple drivers, passengers, bicyclists). The severity of a crash is classified by the highest level of severity experienced by any person involved in the crash. The crash records provide both the number of crashes by crash severity and by injury severity by person type (driver, bicyclist, etc.) for analysis.

Table 6: Bicyclists Injuries in the MPA (2019-2023)

Year	Fatalities	Suspected Serious Injuries	Suspected Minor Injuries	Other	Total Injuries
2019	7	61	229	206	503
2020	12	68	192	203	475
2021	14	83	229	173	499
2022	22	65	253	147	487
2023	18	83	287	158	546
Total	**73**	**360**	**1,190**	**887**	**2,510**
Average Per Year	15	72	238	177	502

During the analysis period, bicyclist fatalities and suspected serious injuries trended upward consistent with national and State trends (see **Sections 2.1.2** and **2.2.3**). Suspected serious injuries peaked in 2021 and 2023 with 83 reported serious injuries while bicyclists fatalities peaked in 2022 with 22 deaths (see Figure 20).

Figure 20: Fatal and Suspected Serious Injury Crashes in the MPA (2019-2023)



Bicycle Crashes Key Findings (2019-2023)

Information from crash records including injury severity, location, lighting conditions, person demographics, and contributing factors guide recommended Plan action items to strategically address bicycle safety through education, engineering, evaluation, and enforcement. For example, all the items detailed above inform how the Look Out Texans campaign crafts and delivers safety education messages, so education outreach reaches targeted populations effectively (see **Section 4.1,** Table 13, Action Item O-5).

Tables and narrative supporting the key findings of this crash analysis are found in **Appendix B.**

The following are key findings of bicycle crash analysis conducted for the MPA for the years 2019-2023. More detail is provided in (**Appendix B).**



17% of bicycle crashes resulted in fatality or suspected serious injury.

Almost all bicycle crashes (98%) occur within a 2-mile radius of a school.





46% of bicycle crashes occur within 3 miles of a station.

65% of all fatal and suspected serious injury crashes occurred at or within 100 feet of an intersection.

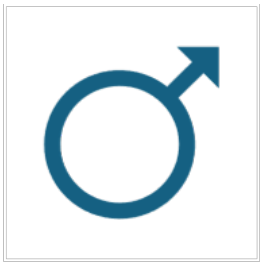




Most bicycle crashes (99%) occur in small and large urban areas accounting for 90% of all fatal crashes and 98% of suspected serious injury crashes.

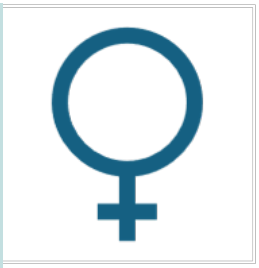
Over 80% of bicyclists who were killed in a traffic crash were not wearing a helmet.





Males account for 86% of all reported bicyclist fatalities with males over the age of 55 having the highest percentage of fatalities and serious injuries.

Nearly one-third of all bicycle crashes involving females occurred among females under the age of 18. Females in this age cohort also had the highest percentage of serious injuries. However, females in age groups over 35 had the highest percentage of fatalities.





Youth under 18 and adults over 55 years old are the age cohorts who are most involved in bicycle crashes.

Black and White bicyclists were overrepresented in bicyclist deaths compared to the overall percentage of these groups within the regional population.





Fatal crashes are significantly higher in dark lighting conditions (65%).

69% of fatal crashes occurred in census tracts identified as Fair Access Communities with individuals with limited financial resources and/or a minority population above the regional average.

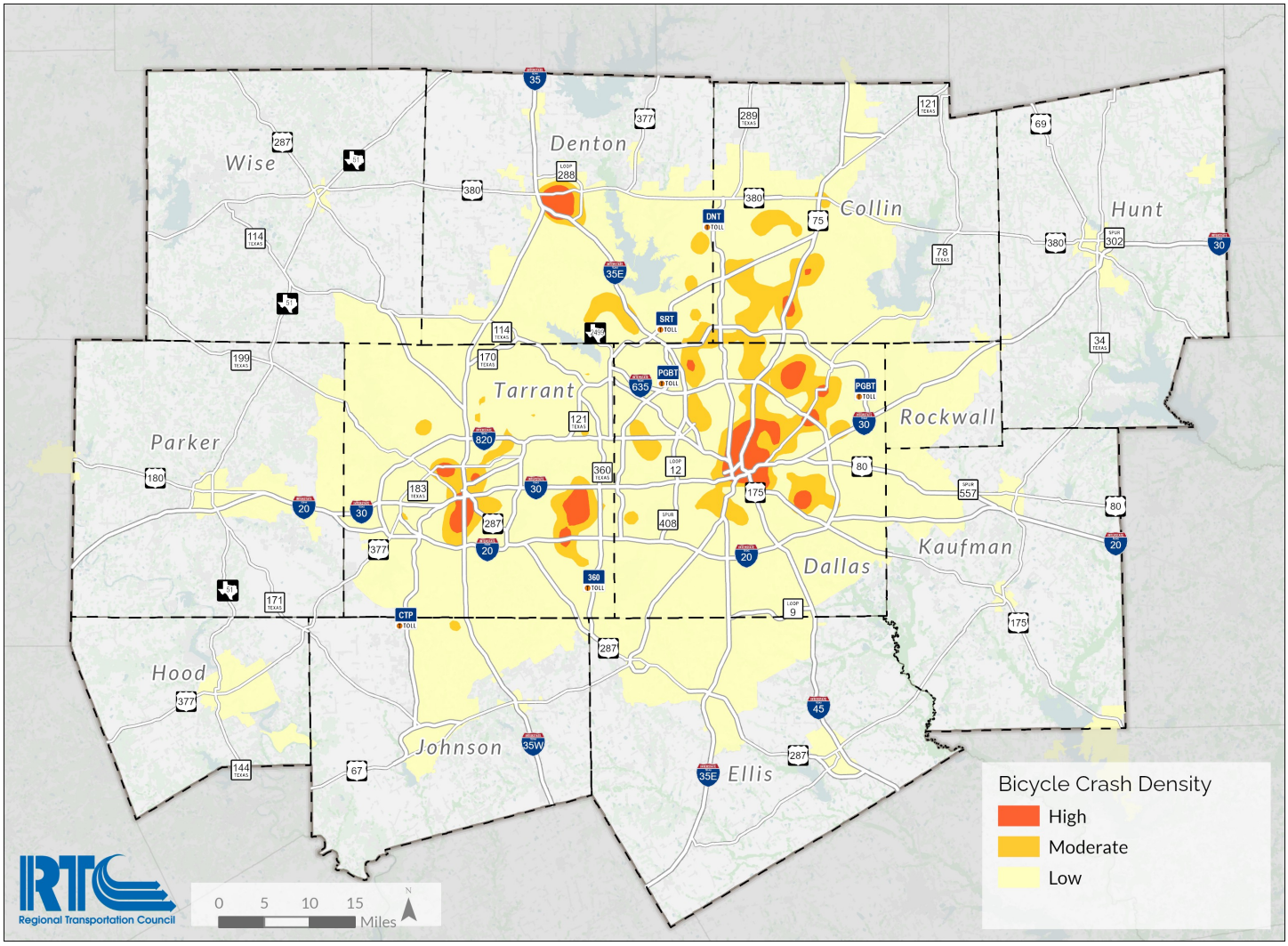


2.3.8 Bicycle Crash Density Analysis

A crash density analysis was conducted to identify areas within the urbanized areas of the region with the highest density of bicycle crashes. The analysis identifies where the highest frequency of crashes occurred and coincides with areas with the highest frequency of bicycle activity. As shown in Figure 21, the high and moderate crash density areas occur in the large urban areas of the region with the densest crash clusters located in the core areas of Collin, Dallas, Denton, and Tarrant County.

The methodology for designating high, moderate, and low crash density areas is summarized in **Appendix F**.

Figure 21: Bicycle Crash Density in the MPA (2019-2023)



2.3.9. Economic Impacts of Bicyclist Fatalities and Serious Injuries

The economic impact of bicyclist crashes differs from that of motorist crashes since bicyclists are not encased in a vehicle structure for protection. Due to the increased exposure, bicyclists are vulnerable in the event of a crash and therefore sustain different types of injuries than motorists, even when injury severity levels are similar. For example, bicyclist crashes resulting in serious injuries tend to include a higher incidence of both head and limb injuries compared to serious motorist injuries. Because the costs associated with specific injuries vary, the average unit cost of bicyclist injuries at any severity level differs from a motor vehicle occupant injury of the same severity.

Based on research from the NHTSA report "The Economic and Society Impact of Motor Vehicle Crashes, 2019 (Revised)" the unit costs associated with bicyclist injuries and fatalities consider the following:

Medical expenses: Direct healthcare costs such as emergency response, hospital care, doctor visits, rehabilitation, prescription drugs, and long-term care for serious injuries.

Work loss: The value of lost wages and benefits due to injury-related absences from work, as well as reduced future earning potential if the injury leads to long-term disability or premature death.

Household productivity: The economic value of tasks people perform outside of the workforce that may be lost or reduced due to injury or death, like childcare, cooking, cleaning, and home maintenance.

Insurance administration: The cost insurers incur for processing and managing claims, including overhead and administrative costs.

Legal costs: The expenses related to legal proceedings such as attorney fees, court costs, and settlements.

Lost quality of life: A measure of the pain, suffering, and diminished well-being caused by injury or death, and is often the largest and most difficult cost to quantify.[25]

Unit costs from the 2019 NHTSA report for serious injuries resulting from bicyclist crashes (those with a Maximum Abbreviated Injury Score of 3+) were inflation adjusted to 2026 costs, ranging from $2.9 million to $9.5 million per crash to reflect the differing levels of injury severity. This range only accounts for serious injuries and does not account for minor or moderate injuries from bicyclist crashes. Unit costs for fatalities resulting from bicyclist crashes were adjusted to inflation, resulting in $13 million per fatality.

Table 7 reflects the total estimated cost of the 429 serious injury and fatal bicyclist crashes between 2019 – 2023 which resulted in an estimated loss of $2.05 to $4.39 billion or an average of $400 to $878 million annually in 2026 dollars.

Table 7: Total Unit Cost of Bicyclist Crashes by Severity (2019 - 2023)

Injury Severity	Number of Crashes	Unit Cost (2026 $)	Total Estimated Cost (2026 $)
Serious Injury	355	$2,900,000 to $9,500,000	$1,029,500,000 to $3,372,500,000
Fatality	74	$13,800,000	$1,021,200,000
Total	429		$2,050,700,000 to $4,393,700,000

Consistent with the goal to eliminate all serious injury and fatal bicycle crashes across the region by 2050, by reducing serious injuries and fatal bicyclist crashes the cost burden will be reduced for individuals and communities across the region.

Conversely, bicycling can result in economic benefits across the region. The Institute for Transportation and Development Policy's report *Making the Economic Case for Cycling* found bicycling can result in economic benefits to society. Specifically, replacing motor vehicle trips with bicycle trips minimizes costs to individuals for maintenance, fuel, and insurance, and decreases the number of premature deaths by improving public health. Additionally, reduced road congestion because of bicycling leads to time saved and increased property values and municipal revenues. Finally, bicycling improves access to commercial areas, resulting in higher retail sales.[26]



Group of bicyclists riding in Fort Worth (Image Credit: Julia Ryan).

2.3.10. Performance Measures and Targets

Measuring and tracking the performance of the region's transportation system is a fundamental component in advancing the goals of *Mobility 2050*.[27] Improving bicycle safety supports regional mobility, quality of life, and system sustainability.

In February 2023, the RTC approved the 2023-2027 Safety Performance Target reduction schedule for the region as reflected in Table 8. This target includes reducing serious injuries and fatalities across all modes of transportation, including bicyclists. Developing incremental targets ultimately supports the Regional Transportation Council goal to reduce the number of fatalities in the region to zero by 2050.

Table 8: Five-Year Rolling Average for the Number of Nonmotorized Fatalities and Serious Injuries as shown in Mobility 2050

Year	Source	Fatalities	Serious Injuries	Combined Fatalities and Serious Injuries
2020	FARS-CRIS	191	379	570
2021	FARS-CRIS	190	453	643
2022	CRIS	208	480	688
2023	Target*	208	498	706
2024	Target*	216.5	548.5	765
2024 Target expressed as 5-year average**		202.7	471.7	674.4

*Based upon linear trend analysis from 2020-2022 CRIS data. 2020–2022 data is observed and 2023–2024 data is projected.

** Calculated by applying a 2 percent reduction to regional projection or actual data 5-year average.

FARS: National Highway Traffic Safety Administration Fatality Analysis Reporting System

CRIS: TxDOT Crash Records Information System

2.4. Crash Investigation

Investigating crashes is critical to understanding how to prevent them. Frequently, numerous crashes in a localized area result from similar contributing factors. The following is based on interviews with TxDOT and local police department staff and summarizes best practices for crash investigations and the steps to implement countermeasures and reduce crashes in problematic areas.

Police departments investigate all significant off-system crashes. Per Chapter 550 of the Texas Transportation Code, all crashes which cause apparent damages of over $1,000 or cause any injury are intended to have a report filed by the police. These reports are then made available through the TxDOT Crash Records Information System (CRIS). A team within the police department should regularly review all the crash reports in their city to gain a holistic understanding of all crashes.

Best practices for investigating major crashes involving a bicyclist include a multidiscipline team of police officers and local government staff. The responding police officers should consult with the responding paramedics to better document any injuries sustained, interview any witnesses to understand the circumstances contributing to the crash. Additional evidence, including field observations and camera footage, can be used to provide additional context regarding the crash. Through recurring coordination meetings with local government staff, the police officers should provide relevant crash information to inform all available methods of potentially preventing future crashes, including engineering, education, encouragement, and enforcement. The recurring meetings should include any city staff involved in the design, maintenance, and operations of the roadways, including but not limited to the transportation, public works, engineering, traffic management, and planning departments, etc.

For on-system fatal crashes TxDOT staff conduct in-depth investigations. Staff hold monthly Fatal Review Team meetings focused on addressing fatal and suspected serious injury crashes occurring on on-system roadways. These meetings are a crucial part of TxDOT's safety strategy, fostering a more coordinated and proactive approach to road safety. A key focus of the meetings is to understand the underlying factors contributing to these fatal crashes and explore how existing and future construction projects can be leveraged to minimize their occurrence.

The TxDOT Team evaluates current road conditions and integrates safety improvements into construction projects. This proactive approach helps prevent similar incidents from recurring. This structured review process has enhanced communication, reduced delays in identifying issues, and accelerated the implementation of effective engineering solutions.

The Team consists of the District Engineer (DE), District Directors, Area Engineers (AE), Maintenance Section Supervisors, Behavior Traffic Safety (who do safety-related public outreach for the District), and the Traffic Safety Team from District Transportation Operations. This collaboration ensures a comprehensive evaluation of each crash and its potential connection to roadway design, which can inform construction and improvement plans. Using aerial imagery, staff examine the locations of each fatal crash, and the team finds solutions to prevent crashes in the future, through engineering, education, and/or enforcement. Staff discuss all details of each crash, including the modes of transportation involved, whether those involved were intoxicated, whether the participants were wearing seatbelts, the crash report narrative from law enforcement, and other factors. Area office staff provide technical expertise regarding potential engineering improvements, while district staff primarily assist in identifying funding sources, such as Highway Safety Improvement Program funds, to be used for safety improvements. The process is data-driven, following a standardized approach that starts with a detailed crash analysis and concludes with actionable recommendations.



Engineers meeting to discuss potential roadway design solutions. Source: Getty Images

3. Recommendations

The primary purpose of this Plan is to significantly reduce the total number bicycle crashes, fatalities, and serious injuries in the region. To achieve this outcome, projects and programs must be strategically selected to direct limited funding to those areas offering the greatest safety benefits in return.



Bicyclist riding in a physically separated cycle-track in North Texas.

3.1 Priority Emphasis Areas

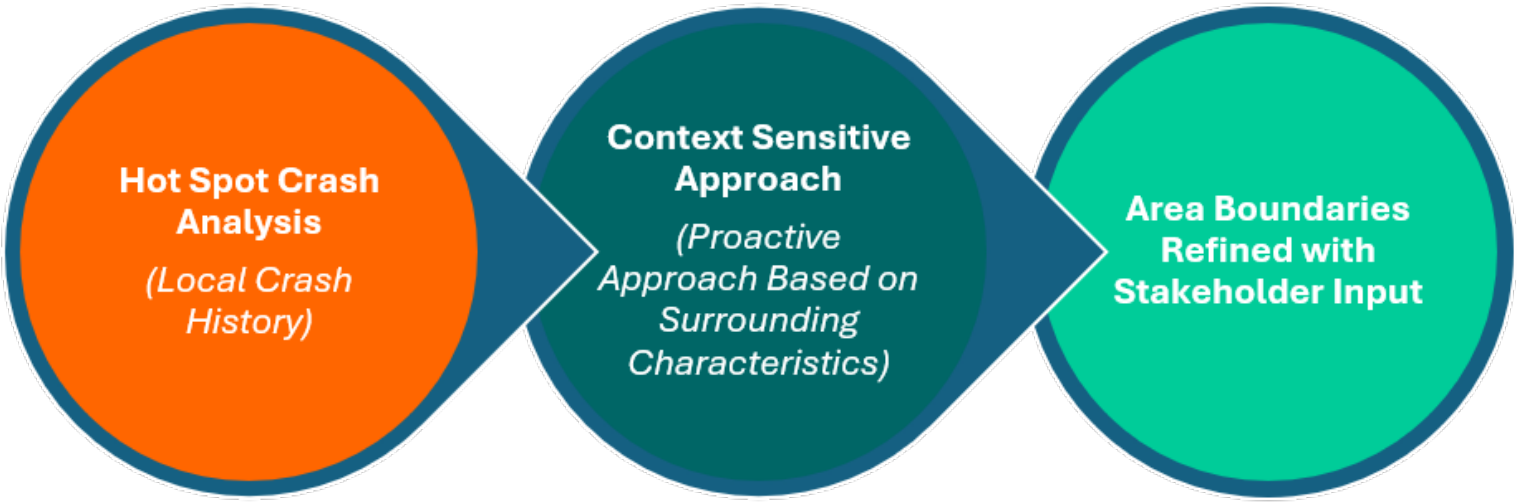
The North Texas Region consists of over 9,000 square miles of land area and is approaching nine million residents. Thus, to achieve zero deaths and serious injuries by 2050, it is essential to strategically target safety improvements providing the greatest opportunity to reduce the total number and severity of bicycle crashes. Bicyclist crashes are generally more dispersed across the region compared to pedestrians and motor vehicle crashes. However, some areas of the region have a higher density of bicyclist crashes than others as reflected in Figure 21.

The purpose of the Priority Emphasis Areas is to identify areas in the region with the highest density of bicyclist crashes where safety countermeasures can be strategically implemented to produce the greatest benefit for reducing the total number and severity of crashes. In addition, these areas should be prioritized to construct the full build out of the bicycle network. Constructing a complete and balanced bicycle network within the Priority Emphasis Areas will improve safety and reduce crashes. Furthermore, implementing a complete network in these areas will increase comfort for bicyclists of all ages and abilities and facilitate the opportunity for short daily trips to be made by bicycle rather than an automobile.

3.1.1. Priority Emphasis Area Methodology

A two-step process was used to identify areas with bicycle safety issues: hot spot crash analysis and context sensitive approach (see Figure 22).

Figure 22: Bicycle and Pedestrian Safety Action Plan Methodology Overview Diagram



Hot Spot Crash Analysis (Density)

A hot spot analysis based strictly on crash history was used to identify areas where the highest density of bicyclist crashes occurred in the region as reflected in Figure 21. The analysis calculated the density of crashes occurring in close proximity to other crashes, using a 2-mile search radius, reflecting an average bicycle trip distance.

Context Sensitive Approach

Building on the hot spot crash analysis, the areas of high and moderate density were evaluated through a context sensitive lens to proactively account for broader areas also at risk for bicycle crashes even if a recent crash history may not be present. This approach refined the hot spot density boundaries to reflect real-world local geography, local context, and local stakeholder feedback including key destinations and known safety issues.

This approach contextualized the crash data by examining the characteristics of:

- the roadways where crashes occurred,
- land-use characteristics, including the density and proximity of key destinations, natural or man-made barriers,
- trail and bikeway corridors, and
- the boundaries of the Mobility 2050 Demand Zones for Walking and Bicycling Travel (**see Appendix F**).

The Demand Zones were developed based on the density of employment, short distance trips, low-income populations, and zero car households. The Mobility 2050 Demand Zones depict areas with greater demand for walking and bicycling infrastructure. *Mobility 2050* recommends the areas with the greatest demand should be prioritized for future infrastructure investments, particularly those suited for an urban environment such as on-street bicycle accommodations.



Source: National Association of City Transportation Officials

3.1.2. Priority Emphasis Areas Findings and Application

The Priority Emphasis Areas were developed based on the combined hot spot analysis and context sensitive approach as represented in Figure 23. These Areas are intended to be used as a planning tool for regional and local planners to guide decision-making when considering areas to target investments in bicycle safety improvements that will improve safety, reduce the number of bicycle crashes and fatalities, and increase bicycle network connectivity thus increasing the opportunity for bicycling as a mode of transportation.

Additional detailed maps for Collin, Dallas, Denton, and Tarrant Counties are identified in **Appendix F** and include the existing and planned bikeway network for those areas.

Figure 23: Priority Emphasis Areas

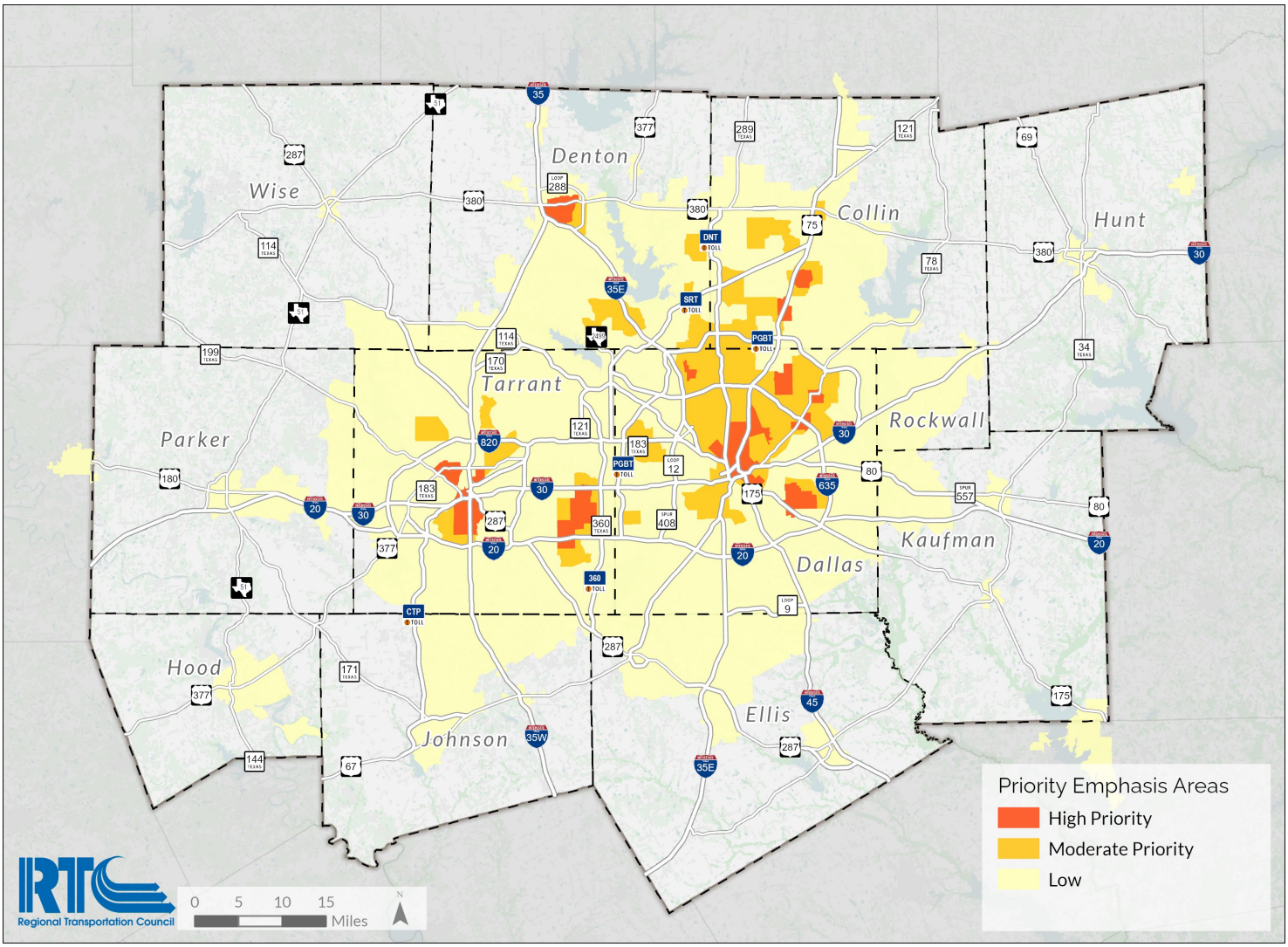


Table 9 features the proportion of crashes in the region located in the high, medium, and low Priority Emphasis Areas.

Table 9: Crash Results per Priority Emphasis Area

Priority Emphasis Area Category	Percent of Crashes	Percent of Urbanized Area	Crashes per Square Mile
High	21%	2.6%	5.7
Moderate	34%	9.0%	2.5
Low	45%	88.4%	0.4

The High Priority Emphasis Areas encompass 2.6% of the urbanized area and capture 21% of the bicyclist crashes. Similar to High Demand Zones for Walking and Bicycling reflected in *Mobility 2050*, the High Priority Emphasis Areas are primarily located in the denser urban centers of Dallas, Fort Worth, Denton, and Arlington as well as other suburban communities with higher density of crashes such as Allen, Carrollton, Farmers Branch, Garland, Plano, and Richardson.

The Moderate Priority Emphasis Areas encompass approximately 9% of the region's urbanized area and capture 34% of bicyclist crashes. These areas expand the zones for safety countermeasures and bicycle facility implementation to less dense communities that nonetheless have a demand for bicycle safety improvements, including Addison, Balch Springs, Flower Mound, Frisco, Grand Prairie, Haltom City, Irving, Lewisville, Little Elm, McKinney, Mesquite, North Richland Hills, Richland Hills, Saginaw, and The Colony.

The High and Moderate Priority Emphasis Areas (represented in Figure 23) together capture 55% of bicyclist crashes in 11.6% of the North Texas urbanized area.

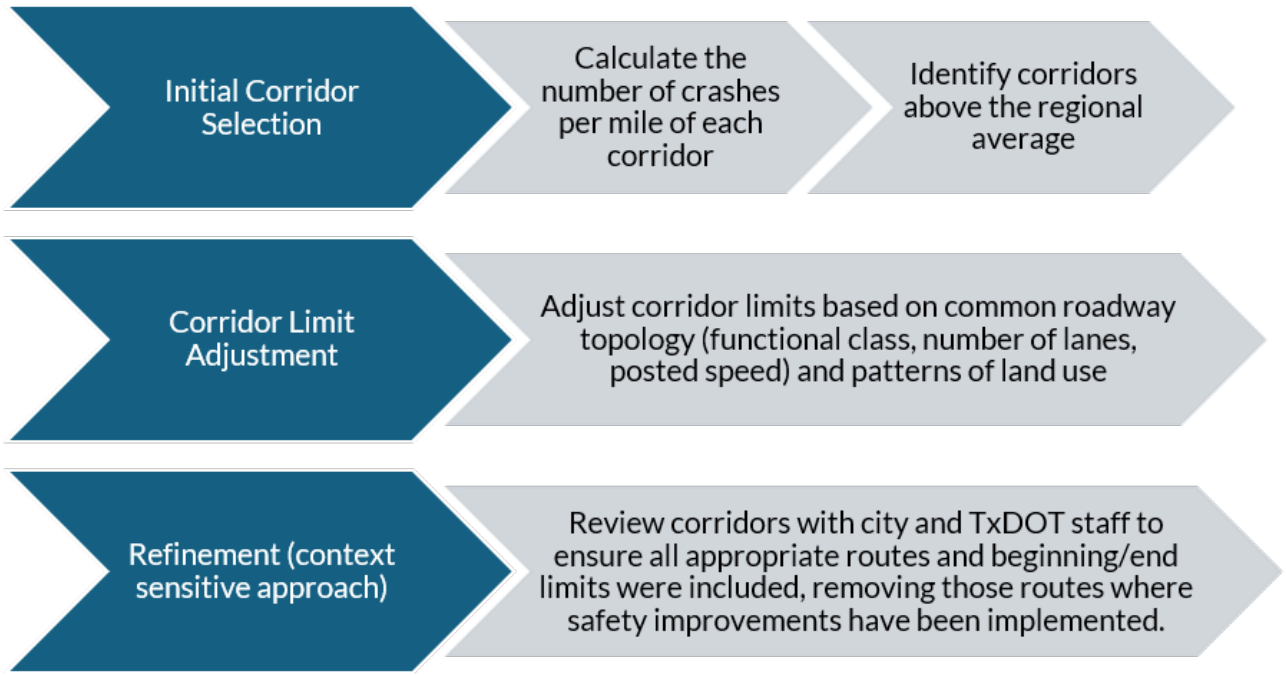
3.2. Priority Bicycle Safety Corridors and Intersections

Bicycle safety will be improved by targeting improvements in corridors and at intersections with the highest bicycle crash frequency where existing conditions are most in need of safety countermeasures. To achieve this aim, Priority Bicycle Safety Corridors (PBSCs) and Priority Bicycle Safety Intersections (PBSIs) were identified based on roadway segments experiencing a high frequency of bicycle crashes above the regional average. These corridors are recommended for future study, including Road Safety Audits, projects, and programs to improve bicycle safety.

3.2.1 Priority Bicycle Safety Corridors and Intersections Methodology

The PBSC methodology follows a process similar to the development of the Priority Emphasis Areas (see Figure 22). A crash frequency analysis was first completed using historical crash data to identify corridors with a crash frequency per mile above the regional average. A context-sensitive approach was then applied to adjust corridor limits, accounting for road characteristics, land use patterns, posted speeds, number of vehicle travel lanes, functional classification, and trip generators that may contribute to future bicycle crashes. The final step, outlined in Figure 24, involved soliciting feedback from city and TxDOT staff to further refine corridor limits, ensuring the corridors represent the most appropriate locations for further study and implementation of safety countermeasures.

Figure 24. Priority Bicycle Safety Corridor Identification Process



Through this process, various intersection locations were identified to have a high frequency of crashes where safety countermeasures should be a focus for further study to implement safety projects and programs. The complete methodology for PBSCs and PBSIs can be found in **Appendix H.**

3.2.2. Priority Bicycle Safety Corridors and Intersections Findings

Figure 25 identifies 187 PBSCs, both on-system and off-system roadways, located in 36 cities and spanning 795 centerline miles (Table 10). A detailed list of corridors, including crash frequency per mile, average injury severity, road characteristics, and proximity to fair access communities, is provided in **Appendix H.**

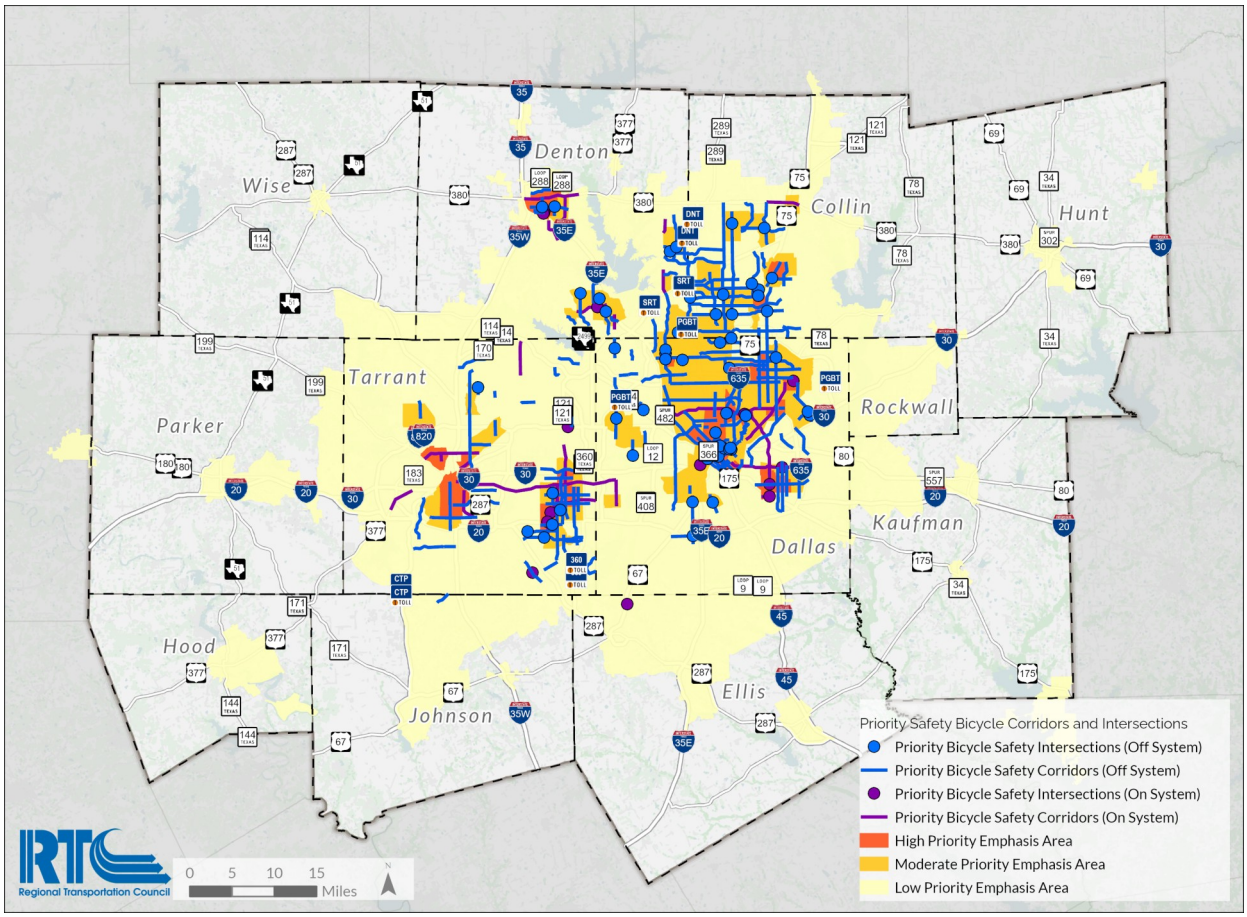
A PBSI was designated when multiple bicycle crashes were reported at an intersection between 2019 and 2023. As shown in Table 10, there are 68 PBSIs across 19 cities (54 on-system and 14 off-system), most of which are located along Priority Bicycle Safety Corridors. The full list of intersections is provided in **Appendix H.** These intersections are candidates for the safety countermeasures identified **in Section 3.5.1.**

Crash data should be periodically reviewed to identify problematic corridors and intersections, and to evaluate these areas before and after safety improvements to gauge efficacy.

Table 10: Priority Bicycle Safety Corridors and Intersections

Category	Number of Corridors	Centerline Miles	Number of Corridors
On-System Corridor	25	127	14
Off-System Corridor	162	667	54
Total	187	795	68

Figure 25: Priority Bicycle Safety Corridors and Intersections



3.3 Data Collection, Monitoring, and Evaluating

Achieving the goals of the Regional Bicycle Safety Action Plan will not only require ongoing education efforts, adjustments to multi-agency transportation planning practices, and implementing safety improvements in targeted locations, it will also require persistent data collection, monitoring, and evaluation at the local, regional, and state level.

3.3.1. Data Collection

Data-driven planning is the fundamental framework to address and reduce bicyclist crashes in the North Texas region. Leveraging existing datasets, collecting new data, and monitoring emerging technologies for data collection all contribute to planning-based decisions based on documentation and evidence. The following forms of data collection are recommended action items for this Plan:

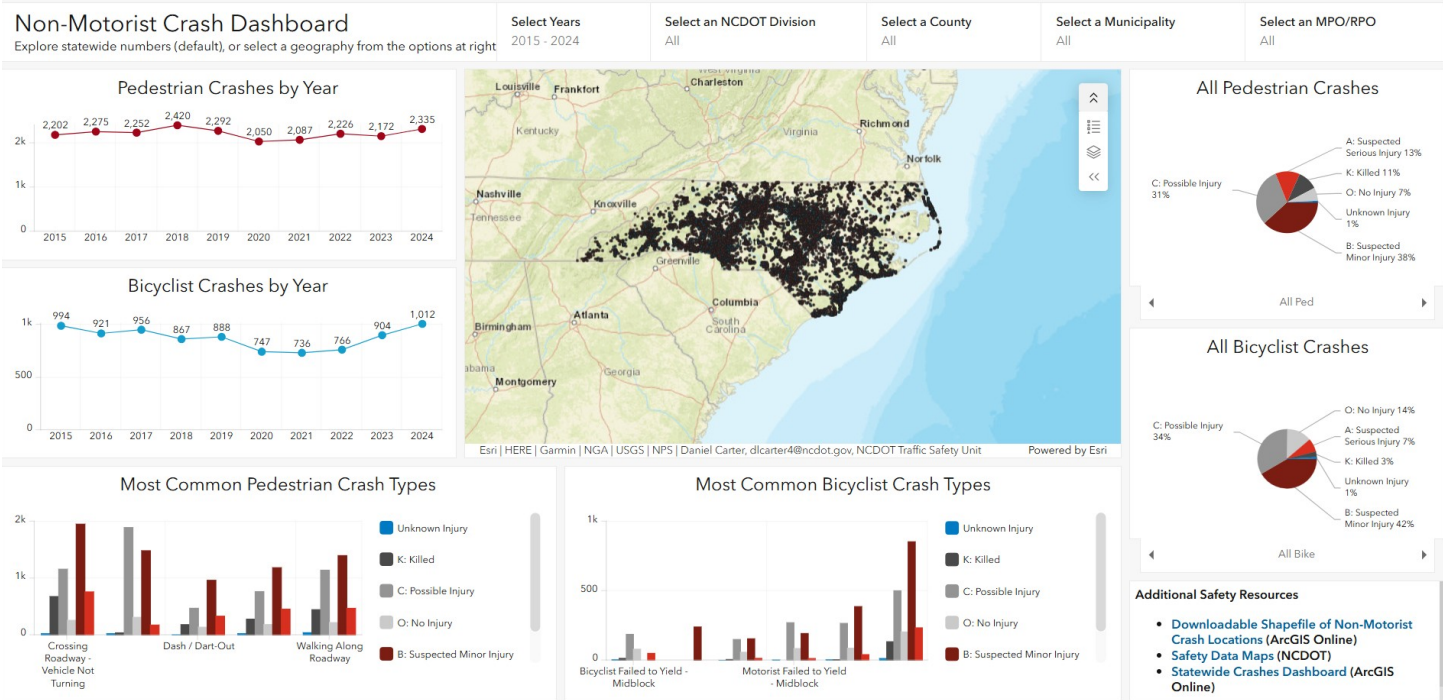
- **Bicyclist Crashes**: The TxDOT Crash Records Information System (CRIS) data for all reportable bicyclist crashes will be analyzed, published, and communicated to stakeholders on an annual basis. Planners will monitor advances in emerging technologies capable of registering close calls at intersections, instances of when a bicyclist is almost in a crash with a motor vehicle. Close call data would supplement existing crash data and would highlight locations with a documented history of near miss crashes and prevent future crashes.
- **Bicyclist Traffic Volumes**: While bicycle count data along shared-use paths in the region have been collected for several years, there has been minimal data collection for bicyclists using on-street facilities. Collecting bicyclist traffic volume count data from on-street bikeways will inform transportation planners and traffic engineers about areas of high demand and where safety countermeasures should be prioritized.
- **Bikeway Network**: Coordinating bikeway network connections among communities is a vital step to ensure bicyclists can safely travel on a continuous dedicated network. The regional inventory of existing, funded, and planned off-street and on-street bikeway facilities helps improve multi-agency coordination and connections to major destinations. This data collection effort also includes an inventory of high injury network corridors for bicyclists identified in local, regional, and state safety plans.

3.3.2. Monitoring

Ongoing reporting of the latest bicyclist crash data, as well as the status of implementing action items outlined in this Plan keeps the public, stakeholders, and elected officials informed. The following forms of monitoring are recommended action items for this Plan:

- **Data Dashboard**: Develop and maintain a data-driven bicyclist crash dashboard highlighting on-going and long-term patterns and trends. Figure 26 is an example of an active transportation crash dashboard used by the North Carolina DOT.
- **Progress Reports**: Publish a progress report every two years after the adoption of the Plan including the status of action items and an outline of next steps.

Figure 26: North Carolina DOT Non-Motorist Crash Dashboard



3.3.3. Evaluations

The purpose of an evaluation is to determine the overall effectiveness of individual programs and projects. Understanding the level of effectiveness for each type of safety intervention strategy allows agency staff and stakeholders to reflect on and identify opportunities for improvements in the next implementation of the same intervention strategy. Repeated evaluations across multiple programs and types of projects provide a comprehensive overview to identify safety intervention strategies with the largest impact on reducing bicyclist crashes. The following evaluations are recommended action items for this Plan:

- **Crash Investigations**: An investigation led by a collaboration of staff from multiple departments evaluates contributing factors involved in every bicyclist crash. See Section 2.4 for examples and best practices.
- **Before and After Assessments**: Safety countermeasures are often associated with a Crash Modification Factor (CMF), a multiplicative factor used to compute the reduction in the number of crashes after implementing the strategy. CMFs are developed based on numerous before and after research studies. Agencies are recommended to collect baseline data prior to implementing safety countermeasures and after construction is complete. These assessments should be included in a project's scope of work and include follow-through over multiple years including publishing the assessment.
- **Develop Safety Targets**: Large Metropolitan Planning Organizations must develop targets for federally required transportation performance measures such as the number of nonmotorized fatalities and nonmotorized serious injuries. Therefore, the RTC approves targets in compliance with federal regulations and transportation staff evaluates the effectiveness of achieving targets to reduce bicyclist fatalities and bicyclist serious injuries.
- **Plan Updates**: The Plan will be updated five years after adoption when the most recent five-year bicyclist crash data is available to provide further analysis and evaluation of bicycle crash patterns and trends.

3.4. Planning and Policy

Planners, engineers, and policymakers at all levels of government have a role in contributing to achieving the goals of the Plan. Identifying Priority Bicycle Safety Corridors, Intersections, and Priority Emphasis Areas for targeted safety improvements is one of many tools to reduce bicyclist fatalities and bicyclist serious injuries.

3.4.1. Multimodal Planning Analysis

Changing the way roadways are historically planned and designed to accommodate safe bicyclist travel requires the application of new, and proven, tools and methods during the planning process. Multimodal Level of Service (MMLOS) is a framework capable of quantitatively evaluating and comparing the performance of roadway designs for motor vehicles, transit, bicyclists, and pedestrians. This approach seeks to balance the needs of multiple transportation modes, rather than focusing solely on motor vehicle traffic and throughput. The Highway Capacity Manual (HCM) contains a detailed overview of the MMLOS framework in the chapter on Urban Streets.

3.4.2. Special Plans

Additional planning activities performed at the local, regional, and state level will further the collective effort to reduce bicyclist crashes in the North Texas region. Additional local and regional planning will build on the Regional Bicycle Safety Action Plan to institutionalize bicycling as a safe mode of transportation. The following plans are recommended action items for this Plan:

- **Safety Action Plans**: Developing a local multimodal safety action plan allows local staff and elected officials to identify aspects of crashes unique to their community. The safety action plan should identify and prioritize improvements on bicyclist high-injury network corridors.
- **TxDOT District Bicycle Plans**: State-owned (on-system) roadways are common barriers to cross for bicyclists and are typically designed for motor vehicles traveling at high speeds. The District Bicycle Plans currently under development in 2026 are anticipated to identify strategies and on-system corridors to improve the safety of bicyclists.
- **Safe Routes to School Plans**: Facilitating safe travel for children to walk and bicycle to school is a core goal for the national Safe Routes to School (SRTS) initiative. This Plan recommends the targeted development of SRTS plans for schools located within the Priority Emphasis Areas to further safety improvements in areas with a regionally significant density of bicyclist crashes.

- **Road Safety Audits**: Roadway safety audits (RSA) are an in-depth and systemic assessment of a roadway corridor's existing conditions performed by an interdisciplinary team to identify multimodal safety improvements. These RSAs should be preformed on all Priority Bicycle Safety Corridors and Priority Bicycle Safety Intersections identified in this Plan.
- **Maintenance Plans**: Bicycle facility maintenance is critical for safety. Routine clearing of debris in bikeway facilities reduces the risk of bicyclists swerving unexpectedly into the motor vehicle travel lane and reduces the risks of skids and falls. Equally important is routine repair of on-street bicycle facility separators as damaged roadway devices, such as a flexible delineator posts, may block travel lanes (for both bicyclists and drivers) and remove visual guidance for drivers of the location of the bicycle facility. The crash risk for these maintenance-related issues are even greater during dark/low lighting conditions so it is essential to ensure roadway illumination is adequate.

  It is important for local governments to allocate appropriate budget resources to ensure a routine schedule to sweep, maintain, and repair bikeway facility pavement markings and on-street bikeways separator devices, and roadway lighting.
- **Motor Vehicle Speed Studies**: High motor vehicle speeds increase the risk of severe and fatal bicyclist crashes. Studies should be conducted to lower posted speed limits on local roadways with bikeways located in Priority Emphasis Areas. In addition, vehicle traffic calming measures should be implemented to improve motorist compliance with the posted speeds.

3.4.3. Policies

Policies help institutionalize safety considerations in standard operating procedures, a key aspect of the safe system approach. The following local policies are recommended action items for this Plan:

- **Context Sensitive Design**: Multimodal roadway designs are capable of balancing the needs of various modes and improves safety for vulnerable roadway users. Adopt a context sensitive design (Complete Streets) policy to accommodate multiple modes of travel.
- **Access Management**: Access management designs and policies seek to improve multimodal safety by reducing turning movements. Adopt a policy or integrate access management principles in local roadway design manuals to prevent bicyclist crashes in advance.

3.4.4. End of Trip Facilities

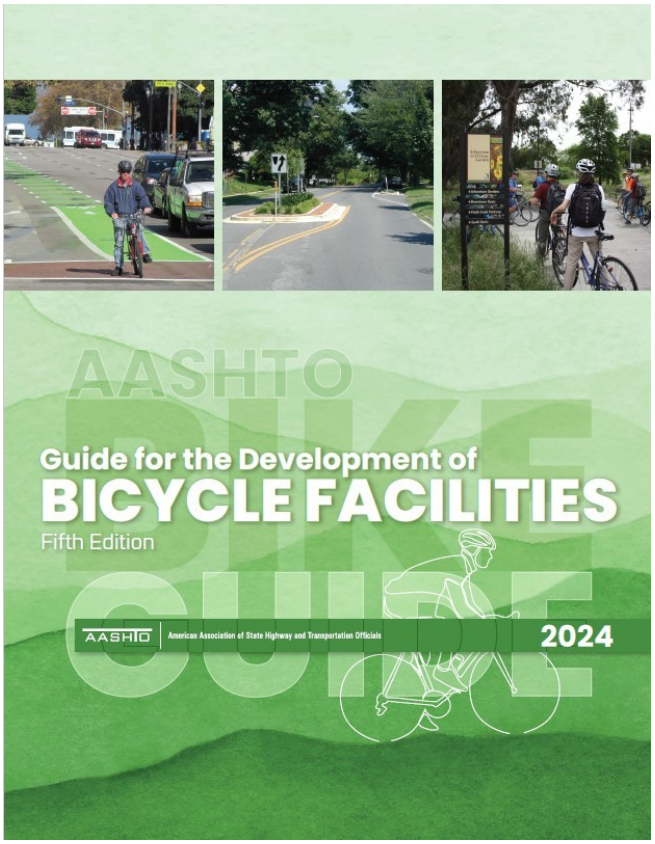
While significant efforts are being made to construct bikeways for people to safely ride bicycles for transportation, consideration should also be given to accommodating end-of-trip facilities that improve the last mile experience for bicyclists. The following end-of-trip strategies are recommended local government action items for this Plan:

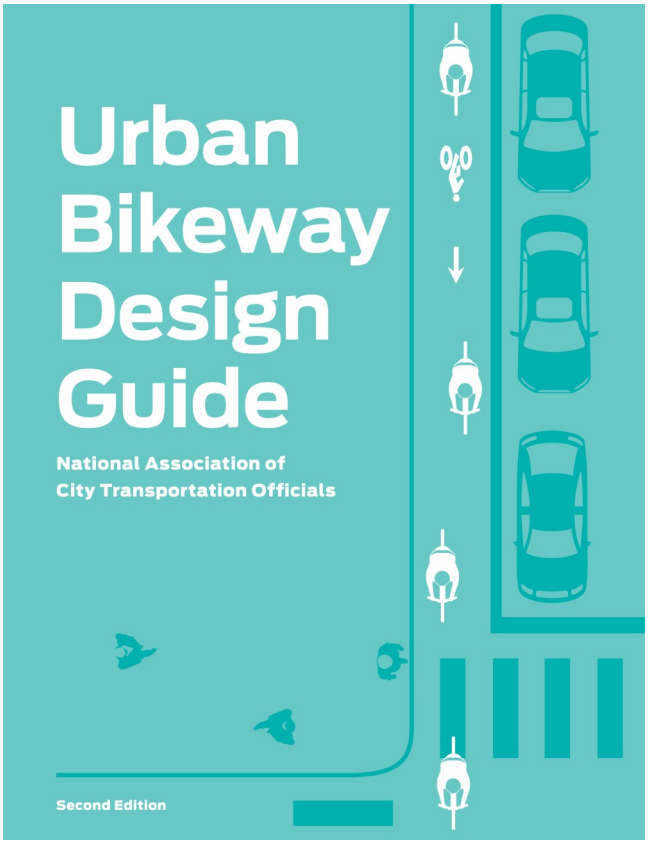
- **Short-Term Bicycle Parking**: A dedicated, convenient, and visible location for parking bicycles avoids haphazard equipment potentially being a tripping hazard for bicyclists. Local governments should adopt bicycle parking regulations or development ordinances and incentives to provide short-term bicycle parking in new development or major renovation projects.
- **Accommodations**: Destinations where bicyclists commute are best served by additional accommodation catering to the physical stress as a result of bicycling. Local governments should adopt regulations and incentives to provide end-of-trip accommodations, including but not limited to, indoor bicycle parking space, showers, changing rooms, and lockers.

3.5. Bikeway Design Best Practices

Streets with bicycle facilities should be designed to accommodate bicyclists of all ages and abilities for at least the 15th percentile bicyclist (those with less experience and vulnerable users), in terms of speed and ability. Street designs should also consider those with disabilities. Recumbent bicyclists may have an "eye height" of four feet or less, so it is essential streets are designed to maintain adequate visibility. Children, older people, and/or novice bicyclists may also use the street, making it essential to plan for people of all ages and abilities. Bicycle signal push buttons should be located so they are easily accessed by all bicyclists.

The AASHTO Guide for the Development of Bicycle Facilities and NACTO Urban Bikeway Design Guide provides additional guidance and minimum/maximum standards for different types of facilities and should be consulted prior to the implementation of any safety improvements. Sufficient flexibility is permitted to allow context-sensitive solutions, and independent discretion should be used in the implementation of safety improvements.



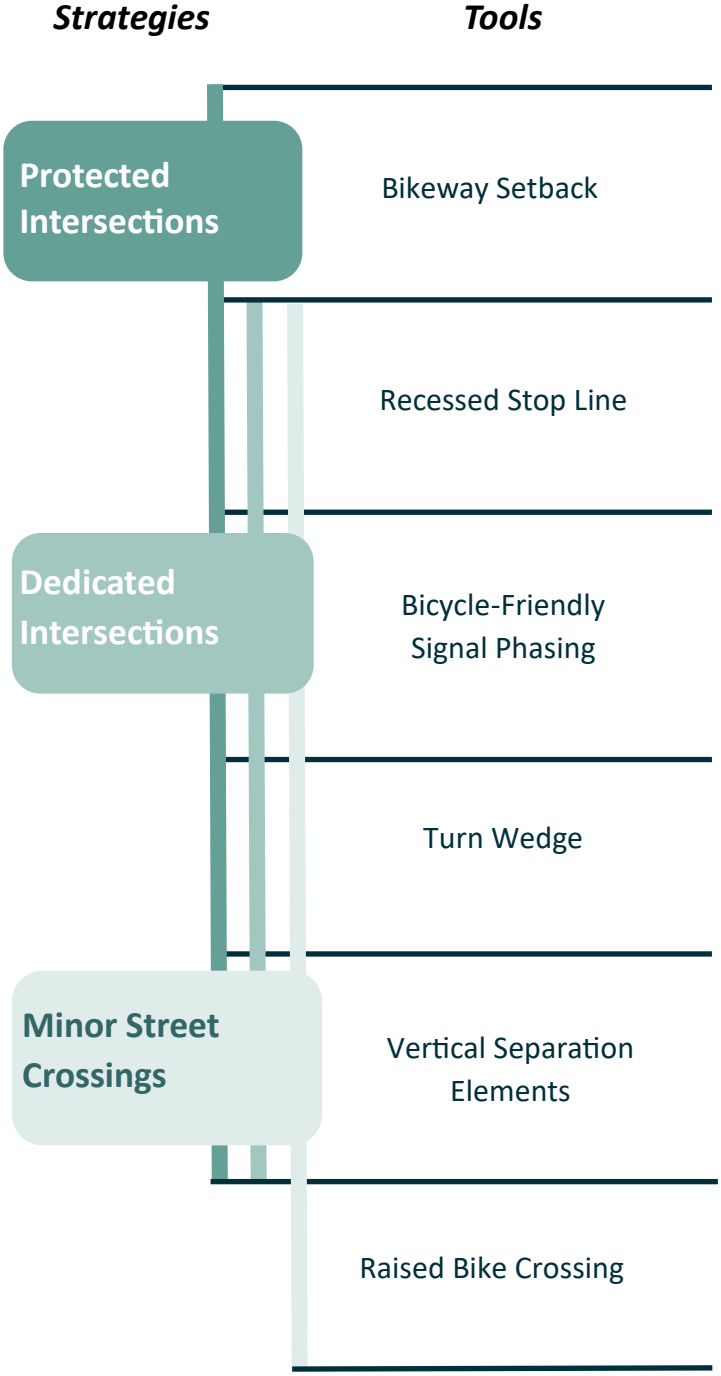


3.5.1. Intersection Safety Countermeasures

Planning for safety within and near intersections is critically important in the Dallas-Fort Worth region, where TxDOT Crash Records Information System records indicate nearly three-fourths of reported bicycle crashes occur, including 49% of reported fatalities. Several different strategies can be used to improve safety for bicyclists at intersections (27% at signalized intersections and 47% at unsignalized intersections, see **Appendix B** for supporting tables). It is important to note most strategies are easier and more cost-effective to implement earlier in the design process, so potential safety countermeasures should be considered "early and often" throughout the duration of the design process. These strategies include a wide range of options, including projects that can be introduced during various roadway development phases, projects for different budget constraints, and projects areas with various amounts available right-of-way.

Potential intersection safety countermeasures are summarized in Table 11 to identify the range of improvements which can be implemented at intersections to improve bicyclist safety. AASHTO and NACTO provide a wide range of guidance for the design of intersections to improve bicyclist safety, for example the NACTO design guide *Don't Give Up at the Intersection*.[28] Potential intersection improvements include protected intersections, which provide the most possible safety to bicyclists, and dedicated intersections, which provide safety to bicyclists in conditions with constrained rights-of-way (see and Figure 27 and Figure 28).

Intersection Safety Countermeasures at a Glance

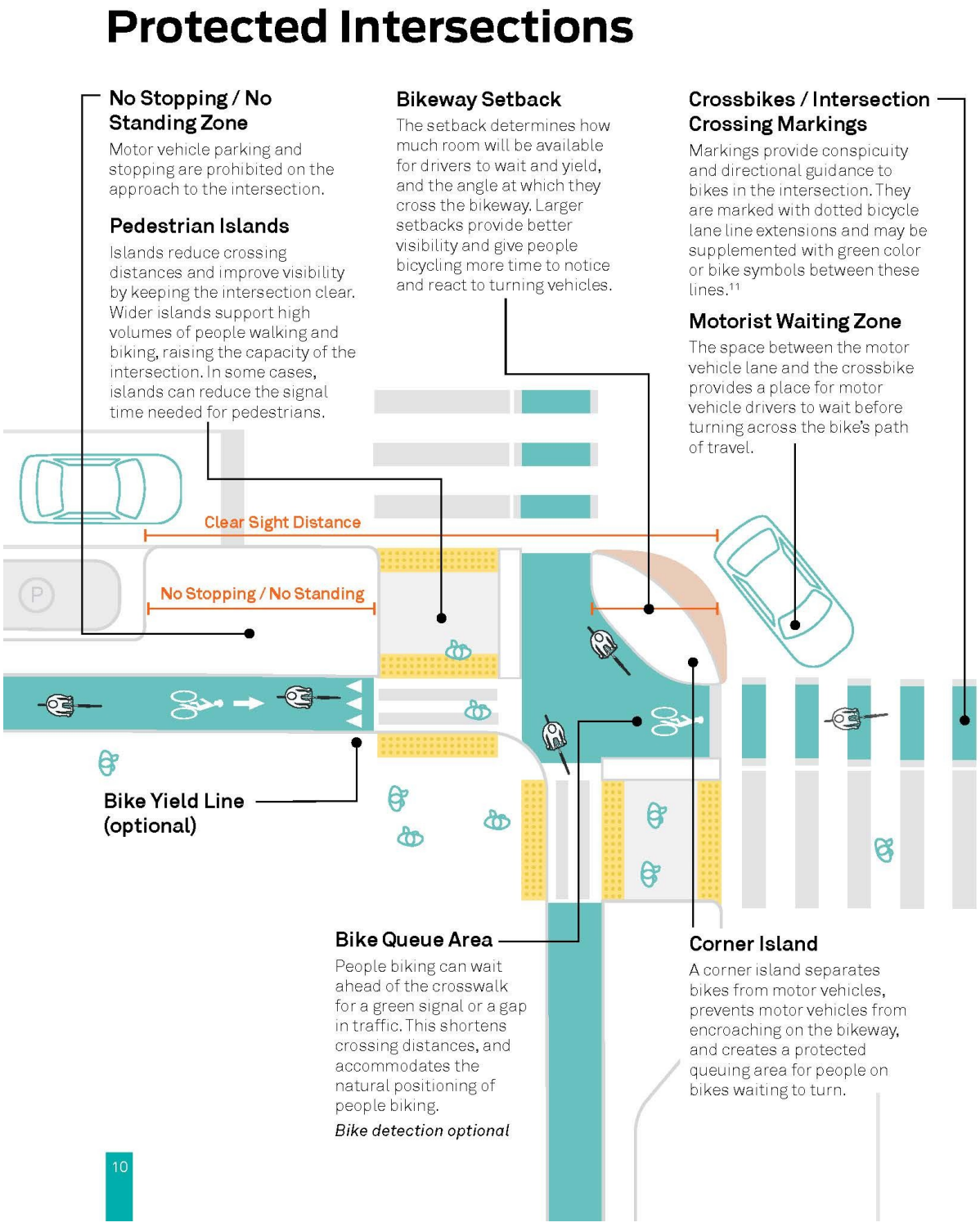


Source: National Association of City Transportation Officials, Don't Give Up at the Intersection

Table 11: Potential Intersection Safety Countermeasures

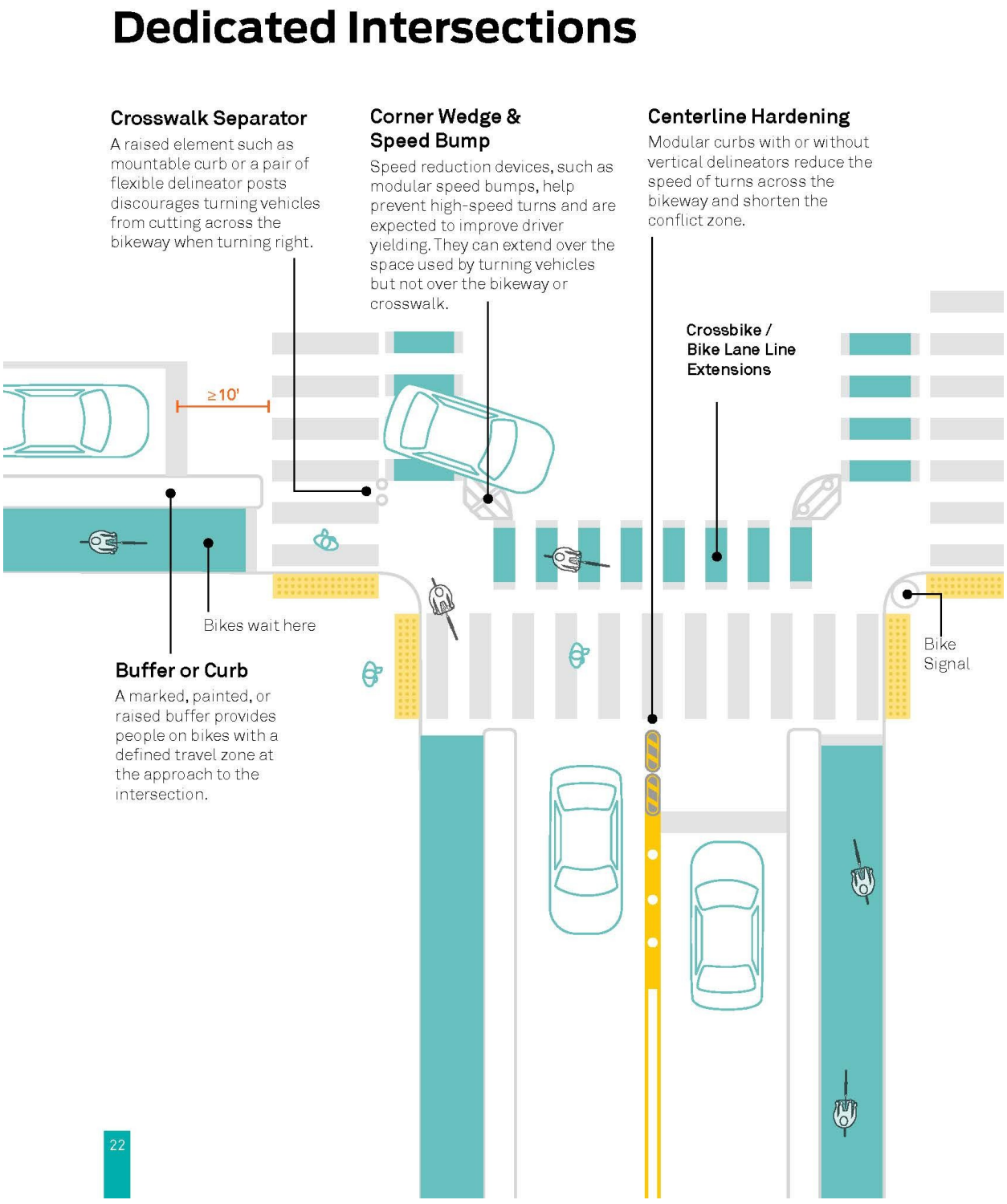
Pavement markings
Extending bicycle lanes pavement markings through intersections (dashed lines)
Extending bicycle lanes pavement markings through intersections (chevrons)
Extending bicycle lanes pavement markings through intersections (green thermoplastic)
Two-stage queue box
Bicycle box
Speed management
Protected intersections, interim materials (flex posts, bollards, pavement markings, parking blocks, and/or planters)
Protected intersections, permanent materials (medians and signals)
Raised bicycle crossings (limited to streets of 30mph or less)
Reduce right turn radii
Hardened left turn centerline
Signage in between lanes
Median island at approaches to intersection (at least 10' wide)
Speed bumps/humps/rumble strips leading to intersections
Motor vehicle travel lane width reduction
Improve visibility at turn conflicts
"Stop Here For" or "Yield Here To" bicycles signs (R1-5d, R1-5e, and R1-6 signs)
Well-illuminated intersections with high uniformity
Having right turn lane cross the bicycle lane prior to the intersection
Corner island / Bikeway setbacks
On/off bicycle ramps to sidepaths at intersections
Adequate sight triangles
Signal improvements
Passive bicycle detection
Active bicycle detection (ensure button is within reach of bicyclists)
Leading bicycle intervals
Retroreflective backplates
Review red and yellow signal timing intervals for bicyclists to clear intersection
Traffic signal phases to minimize conflicting movements
"No right turn on red" signs for motorists
Eliminate permissive left turn movements by motorists
Prohibit left turn movements
Design signal timing for 15th percentile biking speed

Figure 27: Protected Intersection



Source: National Association of City Transportation Officials, Don't Give Up at the Intersection

Figure 28: Dedicated Intersections



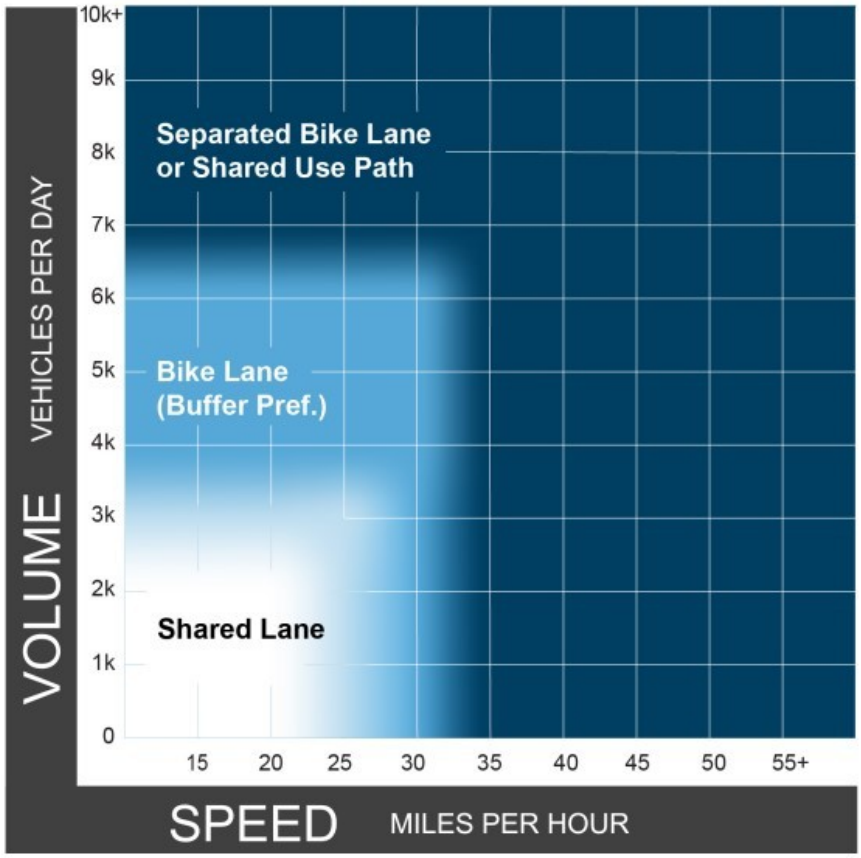
Source: National Association of City Transportation Officials, Don't Give Up at the Intersection

3.5.2. Separated Bicycle Lanes on Higher Speed Roadways

According to the Federal Highway Administration, a growing body of evidence in the United States and internationally demonstrates separated bicycle lanes have significantly fewer crashes involving people bicycling on higher speed roadways.[29] Separated bicycle lanes can be constructed with various forms of separation, including raised curbs or other raised barriers between bicycle travel and motor vehicle traffic. Most recorded crashes in the Dallas-Fort Worth region occurred on streets that did not have dedicated bicycle facilities separated from motor vehicle traffic. Of those crashes occurring on streets with existing bicycle facilities, the vast majority occurred where bicycle lanes were not separated from vehicular lanes with a vertical barrier. The NACTO Designing for All Ages & Abilities guide provides guidance for selecting bikeway facilities based on existing or planned roadway characteristics (see Table 12).[30]

Streets with higher traffic volumes should provide more space and more robust barriers for bicyclists (see Figure 29). Some corridors may have motor vehicle traffic speeds and volumes where bicyclists should be redirected to alternative corridors, as there may be no viable solution to retrofit the corridor adequately for safety and comfort. However, bikeway network connectivity should be maintained for bicyclists to access major destinations within the community.

Figure 29: Recommended Bicycle Facility Selection for Urban, Urban Core, Suburban, and Rural Town Context



Source: TxDOT Roadway Design Manual, Federal Highway Administration Bikeway Selection Guide

Table 12: Contextual Guidance for Selecting All Ages & Abilities Bikeway

Roadway Context				All Ages & Abilities Bicycle Facility
Target Motor Vehicle Speed *	**Target Max. Motor Vehicle Volume (ADT)**	**Motor Vehicle Lanes**	**Key Operational Considerations**	
Any		*Any*	*Any of the following*: high curbside activity, frequent buses, motor vehicle congestion, or turning conflicts ‡	**Protected Bicycle Lane**
< 10 mph	Less relevant	No centerline, or single lane one-way	Pedestrians share the roadway	**Shared Street**
≤ 20 mph	≤ 1,000 - 2,000		< 50 motor vehicles per hour in the peak direction at peak hour	**Bicycle Boulevard**
≤ 25 mph	≤ 500 - 1,500			
	≤ 1,500 - 3,000	Single lane each direction, or single lane one-way	Low curbside activity, or low congestion pressure	**Conventional or Buffered Bicycle Lane, or Protected Bicycle Lane**
	≤ 3,000 - 6,000			**Buffered or Protected Bicycle Lane**
	Greater than 6,000			**Protected Bicycle Lane**
	Any	Multiple lanes per direction		
Greater than 26 mph †	≤ 6,000	Single lane each direction	Low curbside activity, or low congestion pressure	**Protected Bicycle Lane, or Reduce Speed**
		Multiple lanes per direction		**Protected Bicycle Lane, or Reduce to Single Lane & Reduce Speed**
	Greater than 6,000	*Any*	*Any*	**Protected Bicycle Lane, or Bicycle Path**
High-speed limited access roadways, natural corridors, or geographic edge conditions with limited conflicts		*Any*	High pedestrian volume	**Bike Path with Separate Walkway or Protected Bicycle Lane**
			Low pedestrian volume	**Shared-Use Path or Protected Bicycle Lane**

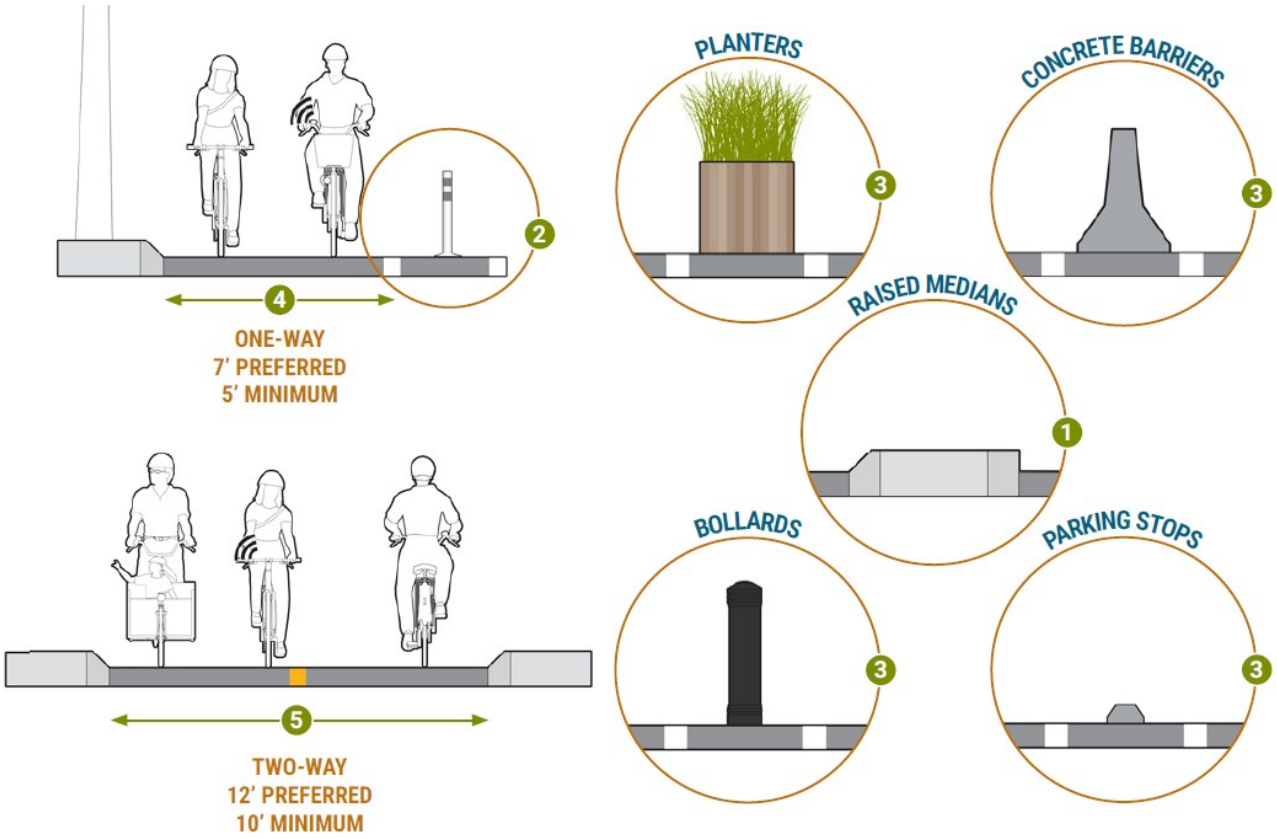
* While posted or 85th percentile motor vehicle speed are commonly used design speed targets, 95th percentile speed captures high-end speeding, which causes greater stress to bicyclists and more frequent passing events. Setting target speed based on this threshold results in a higher level of bicycling comfort for the full range of riders.

† Setting 25 mph as a motor vehicle speed threshold for providing protected bikeways is consistent with many cities' traffic safety and Vision Zero policies. However, some cities use a 30 mph posted speed as a threshold for protected bikeways, consistent with providing Level of Traffic Stress level 2 (LTS 2) that can effectively reduce stress and accommodate more types of riders.

‡ Operational factors that lead to bikeway conflicts are reasons to provide protected bike lanes regardless of motor vehicle speed and volume.

The NACTO Urban Bikeway Design Guide outlines a wide range of vertical barrier options, including mid-height barriers (tall curbs), delineators posts, raised curbs, raised medians, and others (see Figure 30). The implementation costs and maintenance needs vary for each type of barrier, therefore the appropriate barrier should be selected for the specific context of the area. The Federal Highway Administration (FHWA) provides a guide on the design of bicycle lanes in various contexts (reference Separated Bike Lane Planning and Design Guide). FHWA also recommends increasing the horizontal and vertical separation from traffic in correlation with traffic volumes and speeds (reference Separated Bike Lanes on Higher Speed Roadways: a Toolkit and Guide).

Figure 30: Examples of Forms of Bicycle Facility Separation



Source: Achieving Multimodal Networks, Federal Highway Administration

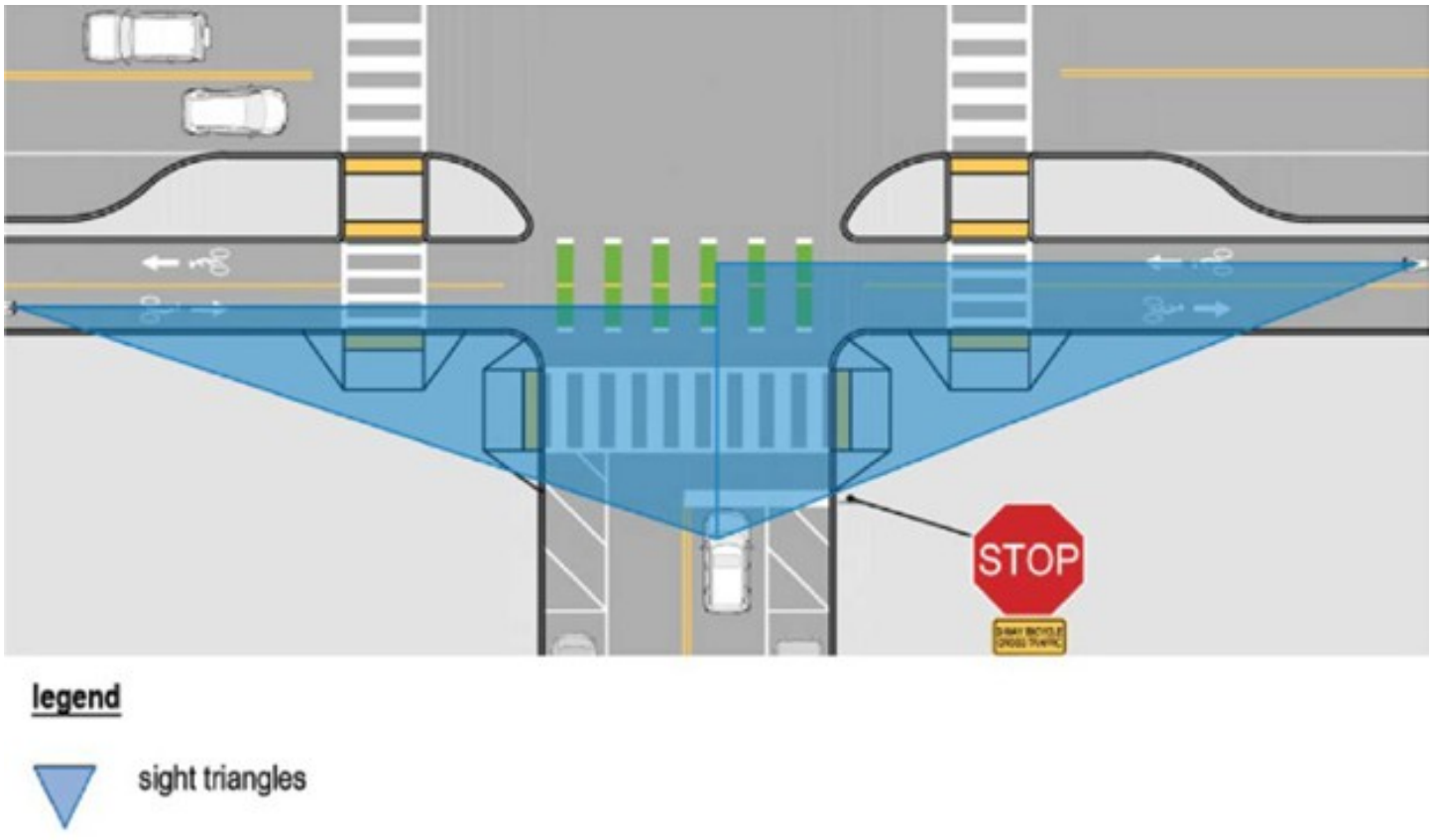
3.5.3. Design Considerations for Bikeways at Driveways and Unsignalized Intersections

In addition to signalized intersections, bicyclists are vulnerable to crossing motorized vehicles at driveways and unsignalized intersections. Strategies to improve safety at these locations primarily focus on improving visibility for all modes of traffic, limiting left-turn movements, reducing the frequency of driveways, and lowering motor vehicle speeds. These improvements contribute to a roadway design with fewer stressful crossings for both bicyclists and motorists.

Bicycle Visibility of Bicyclists Traveling along a Roadway

Adequate sight distances between motorists and bicyclists provide all users of the roadway time and space to react to oncoming crossing traffic. Sight obstructions such as vegetation, signs, or parked vehicles too close to the crossing can pose safety risks by limiting the visibility of traveling bicyclists. Such obstructions should be located where they will not obstruct the visibility of bicyclists by motorists entering or exiting a driveway. For driveways with a high volume of traffic, dashed green pavement markings illustrate recommended positioning for motorists and bicyclists on the roadway and remind drivers to look for bicyclists before entering the roadway from a driveway (see Figure 31).

Figure 31:Sight Triangles for Motorists Exiting Driveways and Alleys

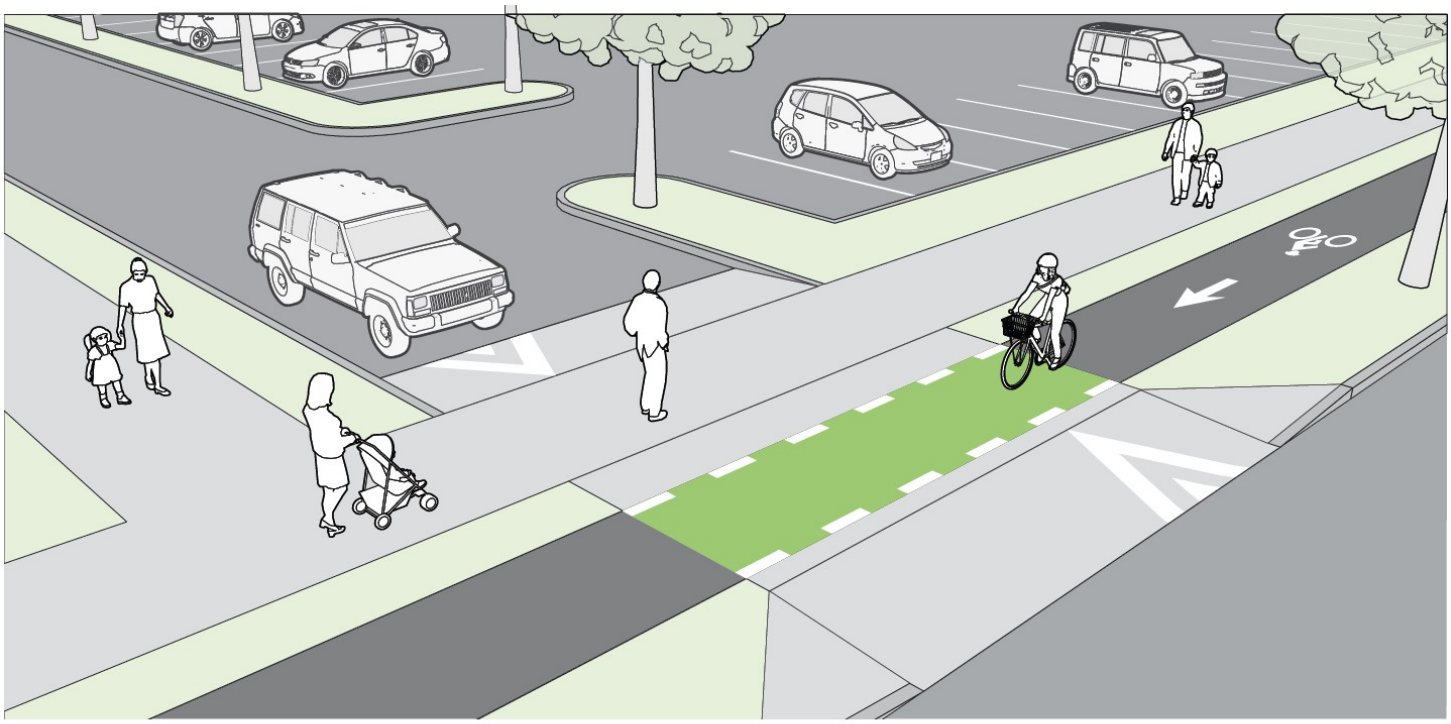


Source: AASHTO Guide for the Development of Bicycle Facilities, 5th Edition

Driveway Design and Access Management

Reducing turning speeds of vehicles into driveways and the number of driveway crossings of a bikeway improves both safety and comfort for bicyclists. A raised bicycle lane and sidewalk through a driveway requires motorists to slow down and communicates to drivers the priority for vulnerable road users within the right-of-way (see Figure 32). Access management is a comprehensive set of roadway design strategies balancing mobility and access by facilitating safe and efficient movement for all modes of travel, including bicyclists. These strategies may include installing raised medians in the roadway to restrict left turns by vehicles, as well as coordinating with landowners to consolidate the number and spacing of driveways.

Figure 32: Raised Driveway Crossing



Source: AASHTO Guide for the Development of Bicycle Facilities, 5th Edition

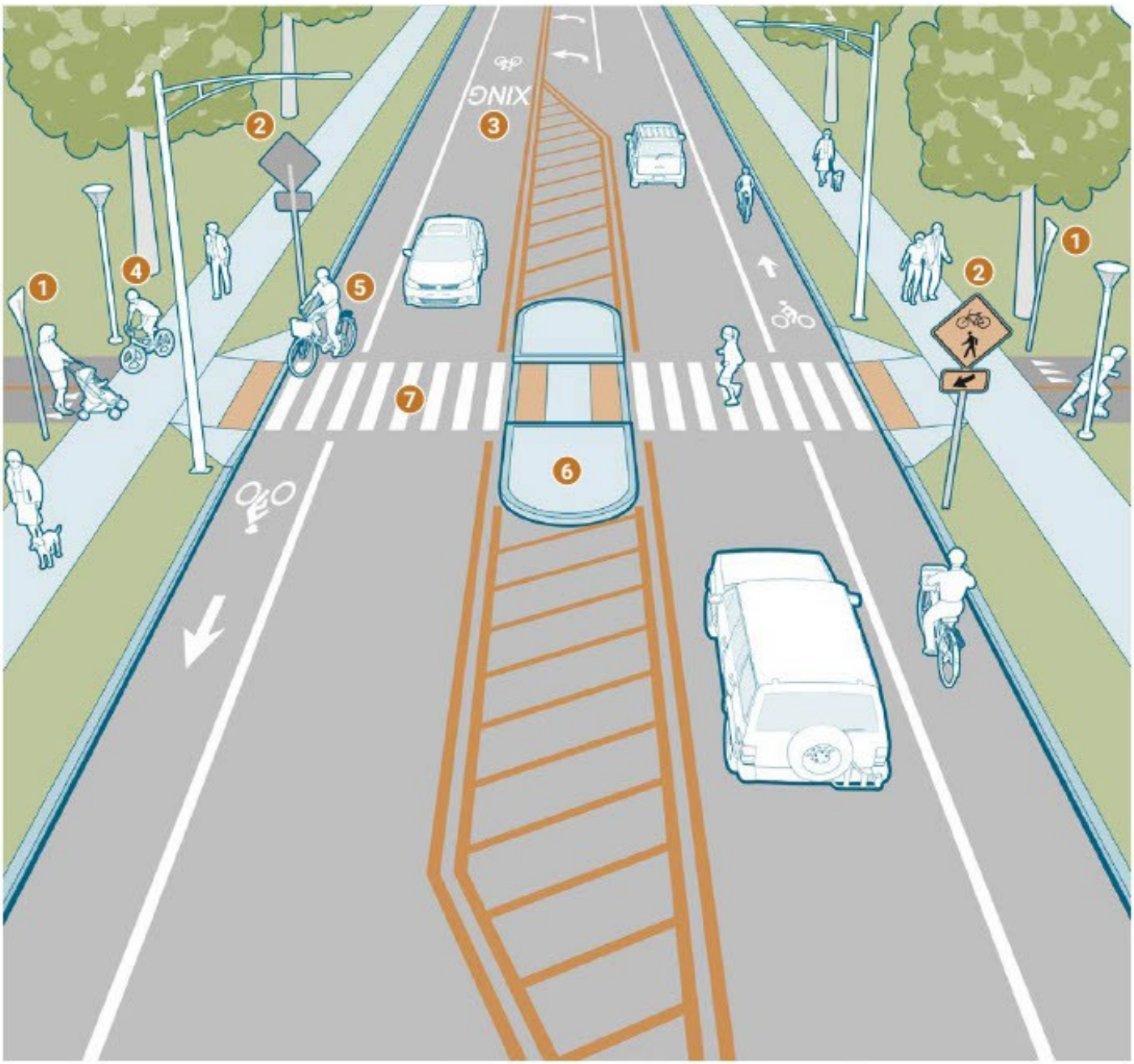
3.5.4. Design Considerations for Shared-Use Path Midblock Roadway Crossings

Shared-use path crossings of roadways in midblock locations should maintain a low-stress facility suitable for people of all ages and abilities. Where feasible, grade separated crossings of a roadway should be provided to limit conflicts with motor vehicles and to maximize comfort and faster travel times for bicyclists.

Where grade separation is not feasible, reducing motor vehicle speeds and improving visibility of at-grade roadway crossings are important principles for midblock crossing safety reflected in Figure 33 and the associated design considerations recommended by the FHWA publication *Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts*.

1. YIELD pavement markings and yield signage or a STOP sign and stop line pavement markings as the shared use path approaches both sides of the roadway.
2. Warning signage identifying the crossing location on the vehicle travel lanes approaching the shared-use path crossing.
3. Pavement markings, such as “BIKE XING,” on vehicle travel lanes warning drivers of an upcoming shared-use path crossing.
4. Direct sidewalk connections to the shared-use path.
5. ADA ramp access of appropriate width for both bicyclists and pedestrians crossing the roadway, and bicyclists transitioning between the on-street bikeways and the off-street path facility.
6. Treatments to enhance the safety and comfort of path intersections, including traffic calming techniques such as refuge islands, raised crossings or chicanes, curb extensions to improve visibility and shorten crossway distances, or a wider path approaching the crossing to accommodate queuing of path users.
7. High-visibility crosswalks paired with advanced stop or yield lines. Where warranted, traffic signals may be installed such as rectangular rapid flashing beacons or pedestrian hybrid beacons (PHB).

Figure 33: Shared-Use Path Midblock Design Strategies



Source: Multimodal Networks: Applying Design Flexibility and Reducing Conflicts, Federal Highway Administration

Traffic Signal or Beacon

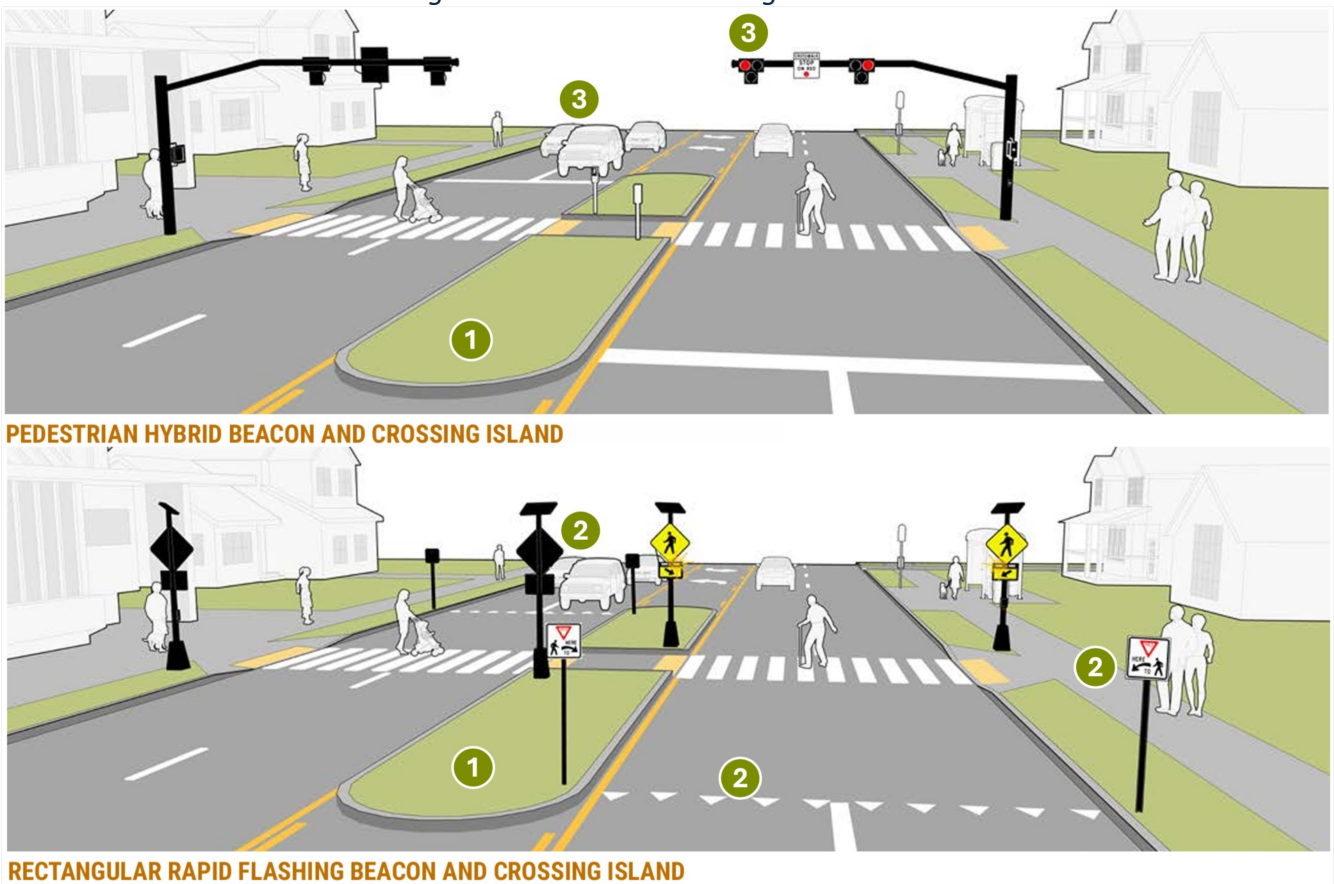
Design considerations for a midblock crossing may include applying warrants to determine if a traffic signal or beacon will improve safety. Designers should consider the existing and projected crossing demand, in addition to the potential users including the young, elderly, and people with disabilities. Signal warrants should be performed to determine the appropriate type of crossing, whether it may be a pedestrian hybrid beacon or rectangular rapid flashing beacon or a full traffic signal. Figure 34 identifies various crossing treatment considerations which should be evaluated to improve safety of midblock crossings for shared use paths.

1. Provide refuge islands for pedestrians and bicyclists to cross the street in two stages and reduce the crossing distance.

2. Install advance yield lines and signage on multi-lane roadways to identify where drivers should yield and to avoid blocking another driver's view people within the crossing.

3. Install advance stop lines and signage to identify where drivers should to stop at a rectangular rapid flashing beacon or traffic signal.

Figure 34: Midblock Crossing Treatments



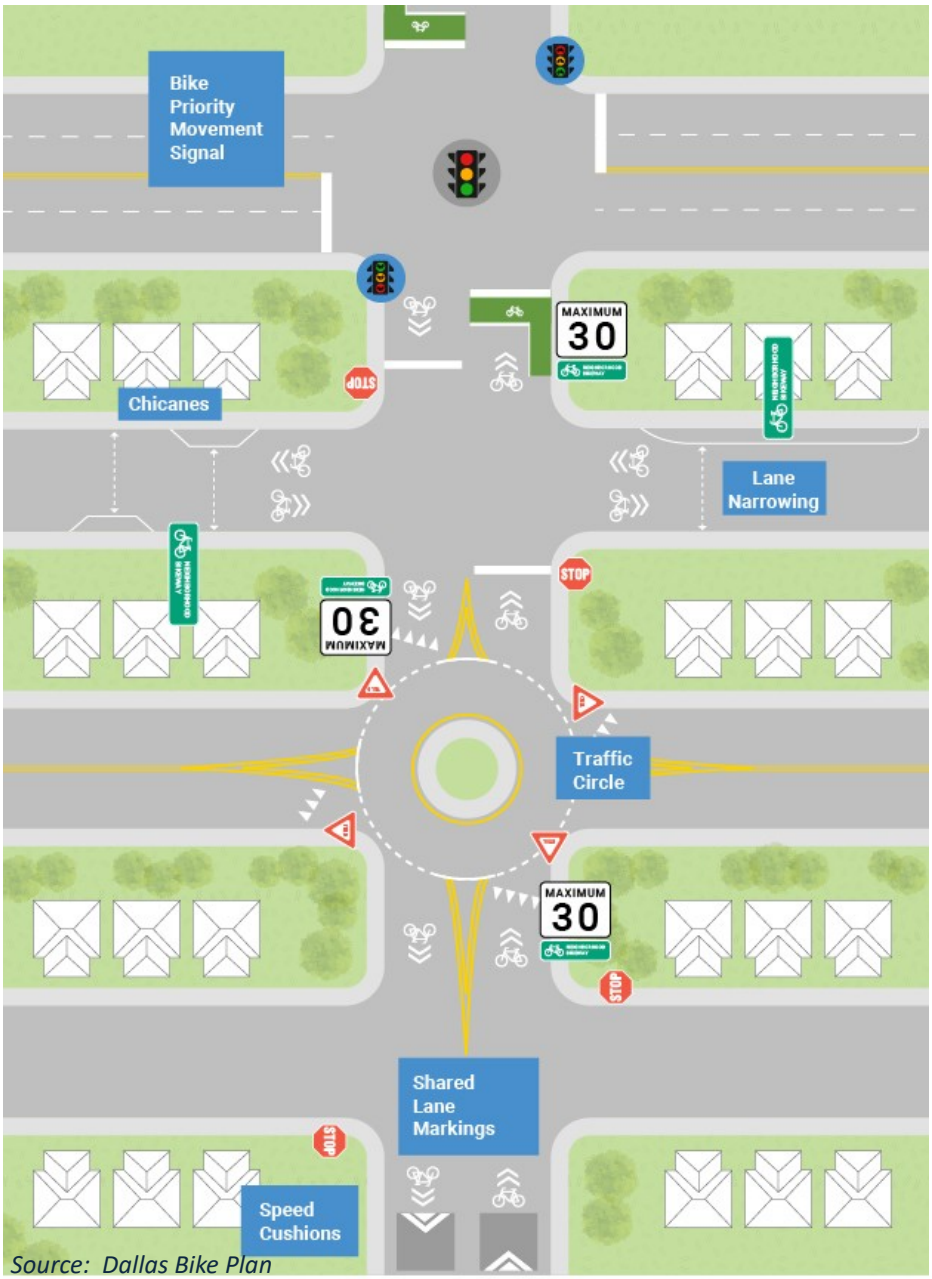
Source: Multimodal Networks: Applying Design Flexibility and Reducing Conflicts, Federal Highway Administration

3.5.5. Bicycle Boulevards

Bicycle boulevards are streets intended to accommodate both bicycle and motor vehicle traffic. These designated corridors maintain safety and comfort for bicyclists by managing low motorized traffic volumes and low travel speeds. From a bicycle network perspective, bicycle boulevards support dedicated bikeway corridors (similar to a collector roadway supporting an arterial roadway). These shared roadway facilities are typically located on residential streets and provide critical connections between dedicated bikeways and access to neighborhood destinations such as schools and community facilities.

Bicycle boulevards differ from on-street dedicated bikeway facility types in there is not a standard design approach. Based on the context of the neighborhood multiple strategies may be used for bicycle boulevards to encourage lower motor vehicle volumes and traffic speeds. Design strategies should consider the street width, adjacent land uses, existing traffic patterns, and the location and frequency of driveways and major street intersections. To ensure a high -comfort facility for bicyclists of all ages and abilities, bicycle boulevards often integrate the use of multiple design strategies, as depicted in Figure 35.

Figure 35: Design Options for Bike Boulevards



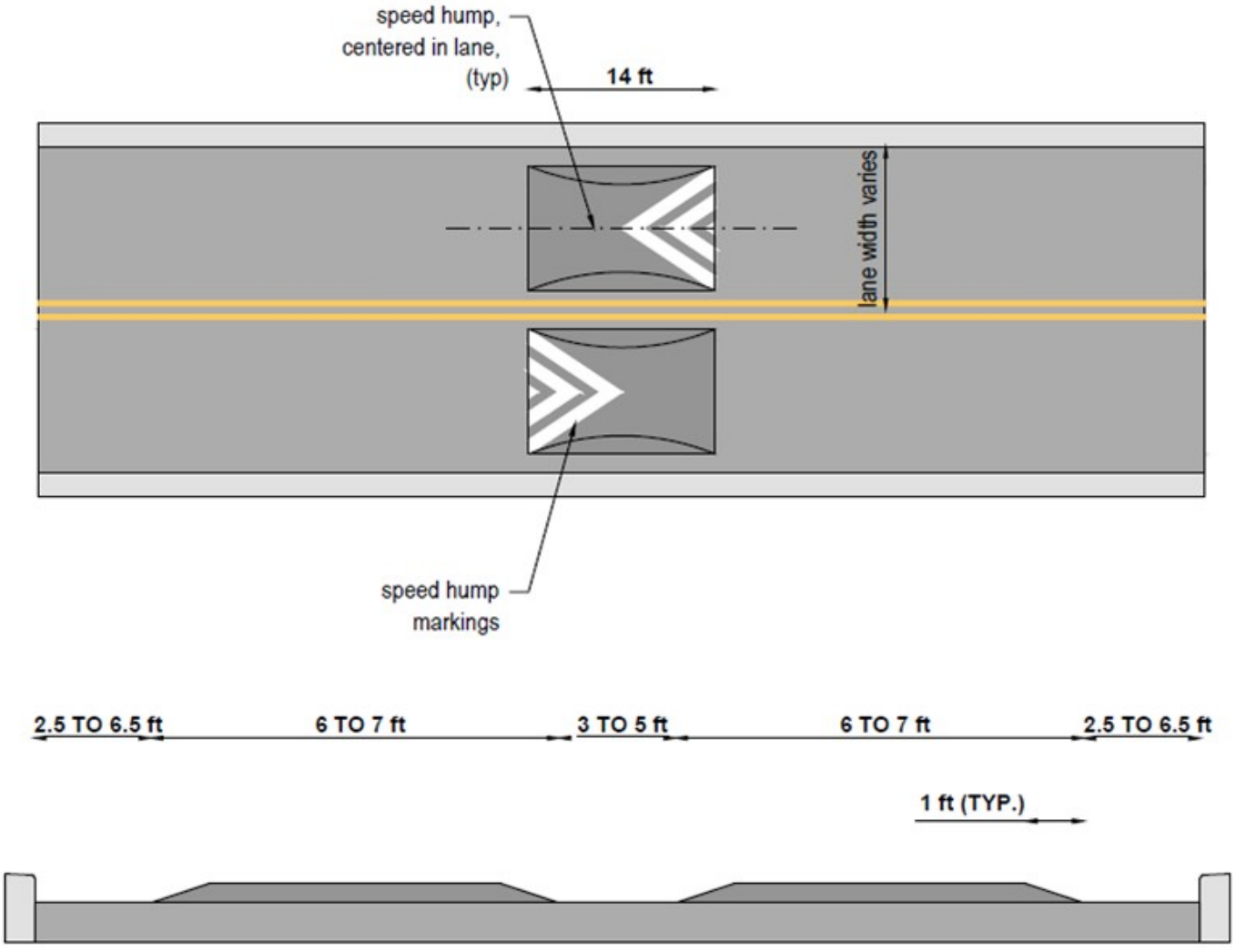
Source: Dallas Bike Plan

The *AASHTO Guide for the Development of Bicycle Facilities, 5th Edition*, and the *NACTO Urban Bikeway Design Guide, 3rd Edition* recommend the following strategies for Bicycle Boulevards:

Speed Reduction Strategies

Streets designed for slow vehicle traffic can best safely accommodate bicyclists and drivers in a shared lane. 20 mph or less is the preferred operating travel speed for motor vehicles on a bicycle boulevard thus contributing to a higher level of comfort for bicyclists of all ages and abilities. During the design process for bicycle boulevards, an engineering study may be performed to evaluate the feasibility of reducing the speed limit below 30 mph for residential streets. Figure 36 outlines the use of a speed cushion on a residential street to reduce motor vehicle speeds.

Figure 36: Typical Geometry for a Speed Cushion



Source: AASHTO Guide for the Development of Bicycle Facilities, 5th Edition

Vehicular Volume Management Strategies

Roadways serving as bicycle boulevards should include a focus on reducing the volume of motor vehicles. Volume management discourages motor vehicles from entering or using a designated bicycle boulevard and gives priority to bicyclist travel. Vehicle volumes on bicycle boulevards suitable for all ages and abilities are recommended to be 2,000 vehicles per day or less according to NACTO's *Designing for All Ages & Abilities: Contextual Guidance for High-Comfort Bicycle Facilities.*[31]

Signage, Wayfinding, and Pavement Markings

The use of signage and pavement makings is intended to communicate to motorists a roadway designated as a bicycle boulevard is shared with bicyclists. Thus, motorists must practice caution and travel at slower speeds. Signage and wayfinding also direct bicyclists to designated bicycle boulevard corridors as part of the overall bicycle network.

Minor Street Crossing Strategies

At the intersection of two local or residential streets aim to encourage continuous bicycle travel with fewer stops. Stop signs installed on perpendicular minor street crossings can prioritize the movement of bicyclists along the bicycle boulevard. Yield signs allow bicyclists to maintain their momentum through intersections. Giving bicyclists the right-of-way and reducing the number of stop signs for bicyclists maintains the flow of bicycle travel. In addition, design characteristics at street crossings may include cross-bike markings adjacent to crosswalk markings, raised crossings to improve bicyclist visibility and reduce vehicle turning speeds, compact corners with small radii to force turning drivers to slow down, and centerline hardening to reduce the speed of motor vehicles on turns interfering with bicyclists.

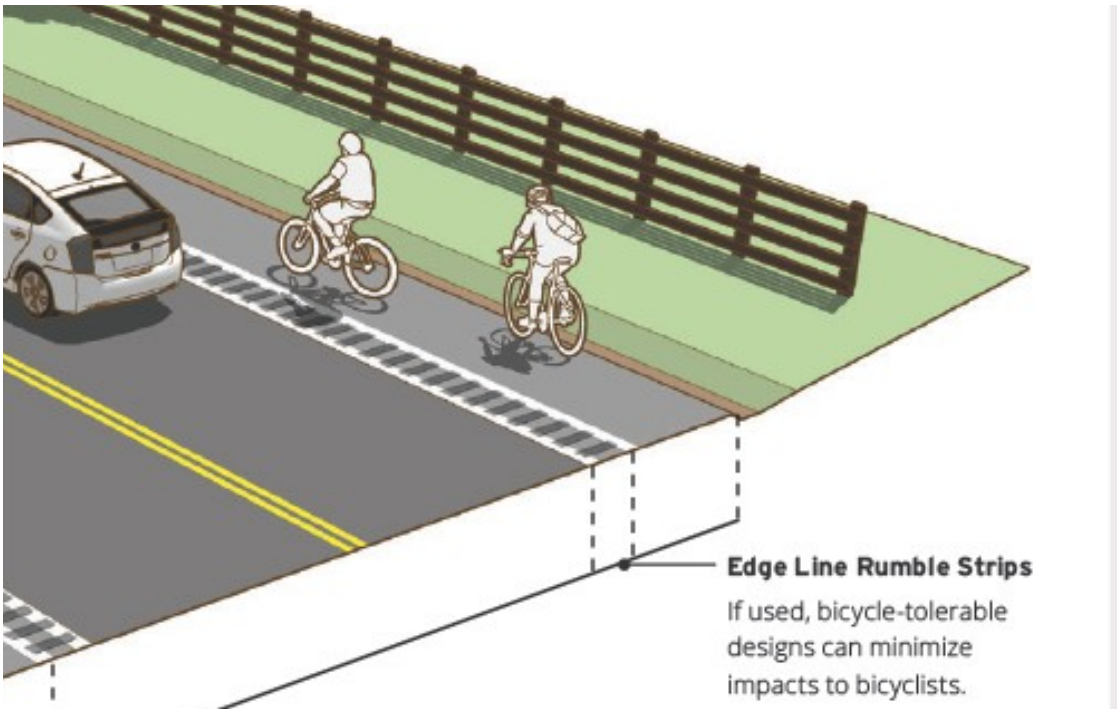


Source: NACTO, Urban Bikeway Design Guide

Bicycle-Friendly Pavement Treatments

Pavement treatments that are bicycle-friendly focus on safety, traction, comfort, and durability. Smoother surfaces are desirable for bicyclists such as smooth asphalt overlays and slurry seal / micro-surfacing. For rural roadways, seal coating surface treatment may be a cost-effective maintenance technique. However, seal coat aggregate can be uncomfortable or hazardous for bicyclists and not ideal for modes of transportation other than automobiles. Section 18.3.7 (Surface Considerations) of the *Texas Roadway Design Manual*, November 2024, indicates it is important to construct and maintain a smooth ridable surface clear of defects, joints, and other potential obstructions on bicycle facilities.[33] The Manual indicates when placing a seal coat as a final driving surface, considerations should be given to one of the following low cost options to provide an improved riding surface for bicycles: use a smaller seal coat aggregate, use a smaller seal coat aggregate on the shoulders, use fog seal on existing seal coated shoulders rather than a new seal coat, or use smaller aggregate for the top course of multiple course seal coats.

The TxDOT District Bike Plans initiated in 2026 are anticipated to provide further guidance on the location of on-system rural bicycle routes, and additional policies and procedures for accommodating bicyclists on on-system roadways.



Source: Small Town and Rural Multimodal Networks, Federal Highway Administration

3.5.6. Federal and State Guidance for Rural Bicycle Safety

According to the Federal Highway Administration (FHWA), in contrast to urban roadways, rural roads have certain characteristics that can increase the severity of crashes for bicyclists, such as higher average vehicle speeds and uncontrolled crossings. Bicyclists in local and rural areas may vary in their levels of ability and expertise in riding with motor vehicle traffic; for example, more experienced or competitive bicyclists tend to prefer using the roadway rather than separate facilities, while inexperienced bicyclists may lack the confidence or the necessary skills to use the roadway.[31]

The FHWA Safe Roads for a Safer Future initiative provides the following list of roadway elements and associated safety enhancements for roadway design benefitting both bicyclists and motorists.[32]

- **Presence or width of shoulders** – At locations where shoulders are not present or are narrow, the addition of shoulders or extra shoulder width may allow bicyclists and pedestrians to travel with a buffer from moving traffic without impeding vehicular flow.
- **Intersection offsets** – Offset intersections may discourage bicyclists and pedestrians from crossing at a marked intersection crosswalk and "encourage" crossings at midblock locations that are not marked. By aligning intersections and driveways to tie at a single location, safety enhancements at that location can be more impactful.
- **Shoulder or edge line rumble strips** – Frequently traveled bicycle routes should be considered when determining whether to place shoulder or edge line rumble strips. Where bicycles are present, include gaps in shoulder or edge line rumble strips.
- **Roadside obstacles, including utility poles and mailboxes** – Roadside obstacles can prevent motorists from recognizing approaching bicyclists and pedestrians and vice versa. The needs of bicyclists, pedestrians, and motorists should be considered during design and placement of such objects.
- **Signs** – Roadside signs should be mounted at an appropriate height such they do not interfere with bicycle and pedestrian movements, nor should the signs obstruct travelers' ability to see oncoming traffic.
- **Sight distance** – Unrestricted sight distance at intersections and locations where bicycles and pedestrians are known to travel helps motorists perceive and react to their presence
- **Number and Location of Driveways** – Consolidating several driveways into a single entrance can improve bicycle, pedestrian, and motorist safety by limiting the number of conflict points. It is also important to locate this single entrance an ample distance away from the intersection to minimize conflicts.

3.6. State Legislation

Potential measures that could be addressed in future legislative sessions to improve bicycle safety and strengthen the ability of law enforcement to protect bicyclists on the roadway include the following:

3.6.1. Statewide Safe Passing Distance

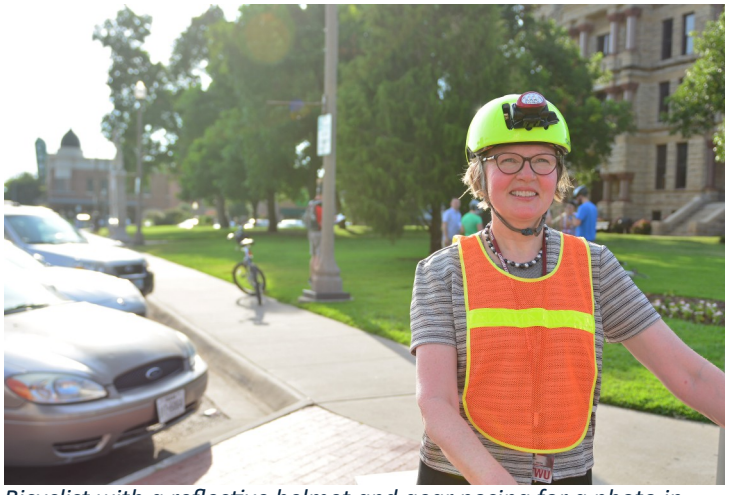
Texas does not have a statewide minimum safe passing distance for motorists overtaking a bicyclist, although cities may set their own ordinances. In 2009, a Safe Passage bill was approved in both the Texas House and Senate. This bill did not become law due to it being vetoed by the governor.[32]

Developing a uniform standard for the safe passing of bicyclists by motor vehicles and integrating this lesson in statewide driver education would remove the guesswork currently required for making passing maneuvers and promote predictable traffic movements. By codifying a minimum safe passing distance, the law would reinforce a culture of shared responsibility and create safer conditions for all roadway users.

According to the National Conference of State Legislatures, 35 states in the U.S. have legislation designating at least a three foot minimum passing distance (some states require more distance). North Carolina is the only state with a two foot minimum passing distance, and eight states have statutes with "safe distance" passing requirements but do not specify the minimum distance. Texas is one of six states in the U.S. with no legislation identifying how motorists are to safely pass a bicyclist on the roadway.[33]

3.6.2. Universal Helmet Usage by Bicyclists

Studies consistently find helmets reduce the severity of injuries incurred by bicyclists involved in crashes and bicycle helmet legislation increases rates of helmet use.[34] Texas is one of 28 states in the U.S. with no statewide law mandating the use of helmets; however, it is not uncommon for municipalities to require helmets for children riding bicycles. 22 states in the U.S. mandate helmet usage for all children of differing ages per state statute, ranging to those aged under 18 years of age.[35]



Bicyclist with a reflective helmet and gear posing for a photo in Denton Square.

3.6.3. Speed Limits under 30 MPH without Conducting Traffic Studies

Bicyclists are sensitive to the speed of motor vehicles in the event of a crash, like other vulnerable road users such as pedestrians. Lower motor vehicle speeds could drastically reduce the severity of bicyclist injuries in the event of a crash.

State law in Texas allows municipalities to reduce the posted speed limit on local streets to 25 mph. However, agencies are required to do the following:

- perform traffic studies concluding the prima facie speed limit is unreasonable or unsafe,
- the governing body must pass an ordinance,
- and agency staff must install new signage identifying the new posted speed limit.

Every state in the U.S. has different approaches to statutes regulating speed limits. As of January 2023, four states enable 20 mph speed limits in designated urban or business districts.[36] Per Sec. 542.352 of the Texas Transportation Code, the minimum speed limit in urban districts is 30 mph. As identified in Section 3.1 of the Plan, Priority Emphasis Area boundaries commonly correspond with dense urban areas. Urban districts with a high density of destinations are suitable for facilitating daily short distance trips by bicycle. The safety of bicyclists can be improved if these areas in Texas are enabled to lower motor vehicle speeds and separated bikeways are constructed. Furthermore, as outlined in Section 3.3.4 (Bicycle Boulevards) of the Plan, the ability for communities to reduce posted speed limits to 20 mph would contribute to fulfilling the design for a type of bicycle facility suitable for all ages and abilities.

The required steps in the process to lower the posted speed limits are costly due to the time effort and required engineering. State legislation is needed to authorize municipalities to streamline the process, as well as the potential to reduce the speed limit further to 20 mph which could have a meaningful impact on bicyclist safety. The “Safe Neighborhood Streets” bill (HB 5253) was filed in 2025 to enable municipalities to establish safe speeds; however, this legislation failed to pass.[37]

4. Recommended Action Items

The recommended Action items of this Plan outline strategies and tools to implement across the transportation system that will guide decision making and set the framework for accomplishing long-term goals.

4.1 Action Items

Table 13 and Table 14 provide recommended action items for implementation after adoption of the Plan which are categorized by ongoing and short-term timeframes. Responsible parties are identified for each action item, reflecting multijurisdictional agency efforts required to improve roadway safety for all bicyclists. These action items reflect a diverse approach to addressing bicyclist crashes, including efforts related to education, enforcement, engineering, and evaluation (organized from low to high cost in alphabetical order of Action Item Type categories). All action items in the BSAP will be incorporated as policies, programs, or projects into the next Metropolitan Transportation Plan, the long range transportation plan for the North Texas region.



Road Safety Audit (RSA) team completing field observations of Elm St. in Dallas as part of the planning grant awarded to NCTCOG through the USDOT FY23 Safe Streets and Roads for All competitive grant program (August 2025).



RTC staff at Dallas Mayor's Back to School Day providing traffic safety education materials and tips for safe bicycle and pedestrian road behavior (August 2025).

Table 13: Recommended Ongoing Action Items

#	Action Item	Action Item Type	Responsible Party	Costs (H/M/L)
O-1	Provide training for transportation design professionals about bicycle facility design best practices and how bicyclists operate on the roadway.	Education	MPO	Low
O-2	Educate elected officials about bicycle safety and economic benefits of bicycle facilities.	Education	Local Governments MPO	Low
O-3	Host adult and child bicycle education classes.	Education	Advocacy Organizations Local Governments Independent School Districts	Low
O-4	Coordinate with police departments and regional and local academies to provide training through work-shops and roll-call video about the transportation code and crash reporting best practices for incidents involving vulnerable road users.	Education	MPO Local Governments	Low
O-5	Update the Look Out Texans safety campaign with tips and messages to encourage safer roadway behavior and attitudes to improve safety, highlight the benefits of wearing a bicycle helmet and using bicycle lights, and raise awareness of the heightened risks that large vehicles pose to vulnerable road users.	Education	MPO	Low
O-6	Target education and outreach efforts for bicycle safety in Priority Emphasis Areas and where Priority Bicycle Safety Corridors are located.	Education	Local Governments	Low
O-7	Prioritize enforcement of traffic laws such as speed limits, impaired driving, safe driving practices, traffic control device compliance.	Education and Enforcement	Local Governments	Low

#	Action Item	Action Item Type	Responsible Party	Costs (H/M/L)
O-8	Conduct road safety audits for Priority Bicycle Safety Corridors and Priority Bicycle Safety Intersections.	Engineering	Local Governments MPO TxDOT	Low
O-9	Install wayfinding signage for bicyclists.	Engineering	Local Governments	Low
O-10	Encourage participation in the NCTCOG regional cooperative purchasing program for bicycle safety infrastructure.	Engineering	MPO	Low
O-11	Conduct before and after assessments for implemented safety projects and report results.	Evaluation	Local Governments	Low
O-12	Develop and maintain a bicycle crash data dashboard identifying long term patterns and trends.	Evaluation	MPO	Low
O-13	Maintain a regional network of planned, funded, and existing on-street bikeways and shared use paths, including facilities along High-Incidence Crash Corridors and in Priority Emphasis Areas.	Evaluation	MPO	Low
O-14	Conduct Multimodal Level of Service (MMLOS) analysis as part of the planning and scoping process for roadway improvement projects.	Evaluation	Local Governments TxDOT	Low
O-15	Conduct public safety investigations and coordinate across multiple departments to address contributing factors of all bicycle crashes.	Evaluation	Local Governments	Low
O-16	Analyze, publish, and communicate bicyclist crash data to stakeholders on an annual basis.	Evaluation	MPO	Low

#	Action Item	Action Item Type	Responsible Party	Costs (H/M/L)
O-17	Publish a progress report every two years after adoption of the BSAP identifying action items completed to date and outline of next steps.	Evaluation	MPO	Low
O-18	Improve bikeway infrastructure conditions through regular street sweeping, maintenance, repair, and roadway illumination.	Engineering	Local Governments	Medium
O-19	Develop a bicycle facility maintenance plan and establish budgets with dedicated funding for maintenance and implementation of bicycle infrastructure.	Engineering	Local Governments TxDOT	Medium
O-20	Prioritize implementation of dedicated bikeway facilities, intersection improvements, and other safety countermeasures benefiting bicyclists in Priority Emphasis Areas and Priority Bicycle Safety Corridors and Intersections.	Engineering	Local Governments MPO TxDOT	High

Table 14: Recommended Short Term Action Items (1 - 5 Years) 2027 - 2031

#	Action Item	Action Item Type	Responsible Party	Costs (H/M/L)
ST-1	Promote state legislation developing a uniform standard for the safe passing of bicyclists by motor vehicles.	Education	MPO Local Governments	Low
ST-2	Integrate bicycle safety lessons in statewide driver education curriculum.	Education	Department of Public Safety	Low
ST-3	Promote state legislation requiring bicyclists' helmet usage when riding on roadways.	Education	MPO Local Governments	Low
ST-4	Promote state legislation authorizing municipalities to reduce the posted speed limit on local roadways below 30 mph without the need to conduct traffic studies.	Education	MPO Local Governments	Low
ST-5	Develop TxDOT District Bike Plans to include recommended bikeway facilities for on-system roadways.	Engineering	TxDOT	Low
ST-6	Adopt citywide bicycle parking regulations and/or incentives to provide short-term bicycle parking accommodations in new development or major renovation projects.	Engineering	Local Governments	Low
ST-7	Adopt regulations and/or incentives to provide end-of-trip facilities, including long-term bicycle parking, showers, changing rooms, lockers, and related accommodations.	Engineering	Local Governments	Low
ST-8	Adopt access management policies to reduce conflicts.	Engineering	Local Governments	Low
ST-9	Develop local citywide multimodal safety action plans including the identification of high injury bicycle network corridors and maintain a regional inventory of these plans.	Evaluation	Local Governments MPO	Low
ST-10	Develop Safe Routes to School plans for schools located in the Priority Emphasis Areas.	Evaluation	Local Governments MPO	Low

#	Action Item	Action Item Type	Responsible Party	Costs (H/M/L)
ST-11	Install and maintain equipment and technology to collect data related to bicycle traffic volumes and record near-miss crash incidents.	Evaluation	Local Governments	Low
ST-12	Adopt local citywide context sensitive design (Complete Streets) policies prioritizing the safety of vulnerable road users.	Evaluation	Local Governments	Low
ST-13	Update the BSAP, including review of the most recent five-year crash data to evaluate changes in patterns and trends.	Evaluation	MPO	Low
ST-14	Conduct studies to implement traffic calming measures and to decrease posted speed on local roadways with bikeways located in Priority Emphasis Areas.	Engineering	Local Governments	Medium
ST-15	Provide adequate roadway lighting along bikeway corridors, especially at conflict locations such as intersections and driveways.	Engineering	Local Governments TxDOT	Medium

5. Conclusion

The Regional Bicycle Safety Action Plan reflects a data-driven approach to identifying crash locations and causes, with a robust public outreach process to identify goals and comprehensive strategies aimed at reducing bicyclist serious injuries and fatalities to zero by 2050. The identification of Priority Bicycle Safety Corridors, Priority Bicycle Safety Intersections, and Priority Emphasis Areas serve as a collective approach to addressing areas and corridors with a documented history of crashes, while also using a safe systems approach to address improvements in locations before crashes may occur.

Improving safety for bicyclists on roadways requires close coordination and ongoing collaboration across multiple agencies, including various city departments, TxDOT, RTC, the MPO, and local transportation agencies. Collaboration must occur across various local government departments, including law enforcement, transportation, public works, and land use planning to achieve the Plan's goals.

The committed implementation of this Plan by all agencies will reduce the number and severity of bicycle crashes in the North Central Texas region. Achieving the goals of the Plan will result in communities where connected bicycle networks will be available and everyday trips by bicycle will feel safe, comfortable, and enjoyable for people of all ages and abilities.



Young girl fitting her bicycle helmet.



Woman loading her bicycle on a Trinity Metro bus.

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