



**TECHNICAL REPORT 1**  
***EXISTING CONDITIONS***

# DALLAS BIKE PLAN

**2025**

# Introduction

The purpose of this technical report is to present the findings of the existing conditions analysis conducted during the first phase of the Dallas Bike Plan project. Included in this report is an evaluation of the existing bike network characteristics, level of traffic stress, prior adverse safety outcomes, equity, public health outcomes, and neighborhood assets that drive demand for biking in Dallas.



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## INTRODUCTION

The following report provides a summary of existing conditions for bicycling in the City of Dallas, a review of the City's existing bike planning policies and bike facility design standards, the visions and goals of the Dallas Bike Plan, and an analysis of bike-oriented policies and design standards in three peer cities. The assessments and analysis following includes the evaluation of existing bike network characteristics, level of traffic stress, safety, and planning and design policies. It also includes an evaluation of topics such as equity, public health outcomes, and community assets that drive demand for bicycling. These evaluations provide additional context for the existing network and future opportunities and provide guidance for developing a complete network of world-class bike facilities. The analysis presented here includes discussion of existing conditions and trends at the City level and a review of existing conditions based on Connect Dallas planning areas. The information presented in this report will inform network opportunities and the identification of existing system gaps.

## EXISTING CONDITIONS ANALYSIS

### 1. THE CITY'S EXISTING BIKE NETWORK

As shown in [Figure 1](#), the existing Dallas bike network includes 89 miles of on-street bike facilities and 122 miles of off-street paved trails ([Table 1](#)). While there is a range of facility types, most Dallas bike facilities are comprised of shared lane markings (21%) or off-street trails (68%). Further, existing bike facilities are primarily located in Central, North Central, and Northeast Dallas. In fact, more than 59% of the on-street bike network is in these areas. Only about 30% of existing on-street bike facilities are in southern areas of Dallas (including South Central, Southeast, and Southwest), with few connections to major destinations and the rest of the bikeway system.

An additional 142.7 miles of funded facilities await implementation. Summarized in [Table 1](#) and shown in [Figure 1](#), these facilities add significant length to the existing network and provide new connections where critical gaps exist today. However, improvements are primarily focused in areas with existing facilities in place and do not yet address the discrepancy in distribution across the city. Of the funded facilities, 42% are in Central, North-Central, and Northeast Dallas, while 51% are in the southern planning areas.

*Table 1. Existing Bike Facilities*

Facility Type	Existing Length (Miles)	Funded Length (Miles)
Shared Roadway (Sharrow)	52	0.2*
Neighborhood Bikeway	17	1.5
Bike Lane	8	6
Buffered Bike Lane	15	3
Cycle Track	26	13
Trail	122	119

\*Sharrows are no longer the preferred facility type, and are being replaced by neighborhood bikeways.

In addition to being primarily located in Central, North-Central, and Northeast Dallas, the existing bicycle system is disconnected, with limited options for continuous travel between facilities and to many community destinations. The disconnected bike network is further divided by highways, which serve as barriers to active travel. A major highway runs through every planning area in Dallas, making it difficult to bike between them due to limited or non-existent low-stress crossing opportunities. For example, Downtown and Central Dallas, despite containing most of the existing bike network, are surrounded by highways, effectively isolating these areas from other locations in the city. Opportunities to provide low stress bicycle connections across highway barriers will be critical for a connected network.

### Paved Trails

The City's trail network has been primarily built through parks and along creeks and rivers, utility corridors, and former railroad right-of-way. Trails form an important part of the active transportation network, providing a low-stress (i.e., limited-to-no exposure to motor vehicles) route that supports a variety of trip types. As they are generally co-located with parks, Dallas's existing trail network largely supports recreation with limited transportation functions. Examples include the Trinity Skyline Trail along the Trinity Greenbelt, the White Rock Lake Trail at White Rock Lake Park, and the Trinity Forest Trails. A few major trails—including the Katy Trail, Santa Fe Trail, SoPac Trail, Northaven Trail, and Preston Ridge Trail—however serve as useful transportation corridors with connections to housing, jobs, light rail stations, and other bike facilities. The Katy Trail, for example, connects to downtown near the Victory light rail station and to Southern Methodist University (SMU) via the SMU/Mockingbird light rail station.

In addition, the City's trail network is also an important component of the regional Veloweb trail system. With more than 1,800 miles of trails proposed as part of this system, Veloweb will support active trips across 10 counties and 105 cities within North Central Texas.<sup>1</sup> Dallas's existing trails contribute to the more than 450 miles already in place, and significant portions of the planned network traverse the city. When implemented, this system will provide connections between Dallas, Fort Worth, and beyond.

### Shared Roadways

While many on-street bike lanes provide connections to paved trails, parks, schools, and commercial corridors, they are often short and disconnected segments. While a bike facility, for example, may connect to a destination within a neighborhood, it often ends abruptly without providing a continuous route for bike travel. Many on-street bikeways are shared roadways, including a sharrow pavement marking and associated signage, and they are primarily located along two-lane residential streets parallel to commercial corridors. A few notable exceptions include Martin Luther King Jr. Boulevard in Southeast Dallas and North Lamar Street in Downtown, both of which are along major roadways with 5 lanes and 4 lanes respectively. Shared roadways throughout Dallas generally do not include traffic calming elements.

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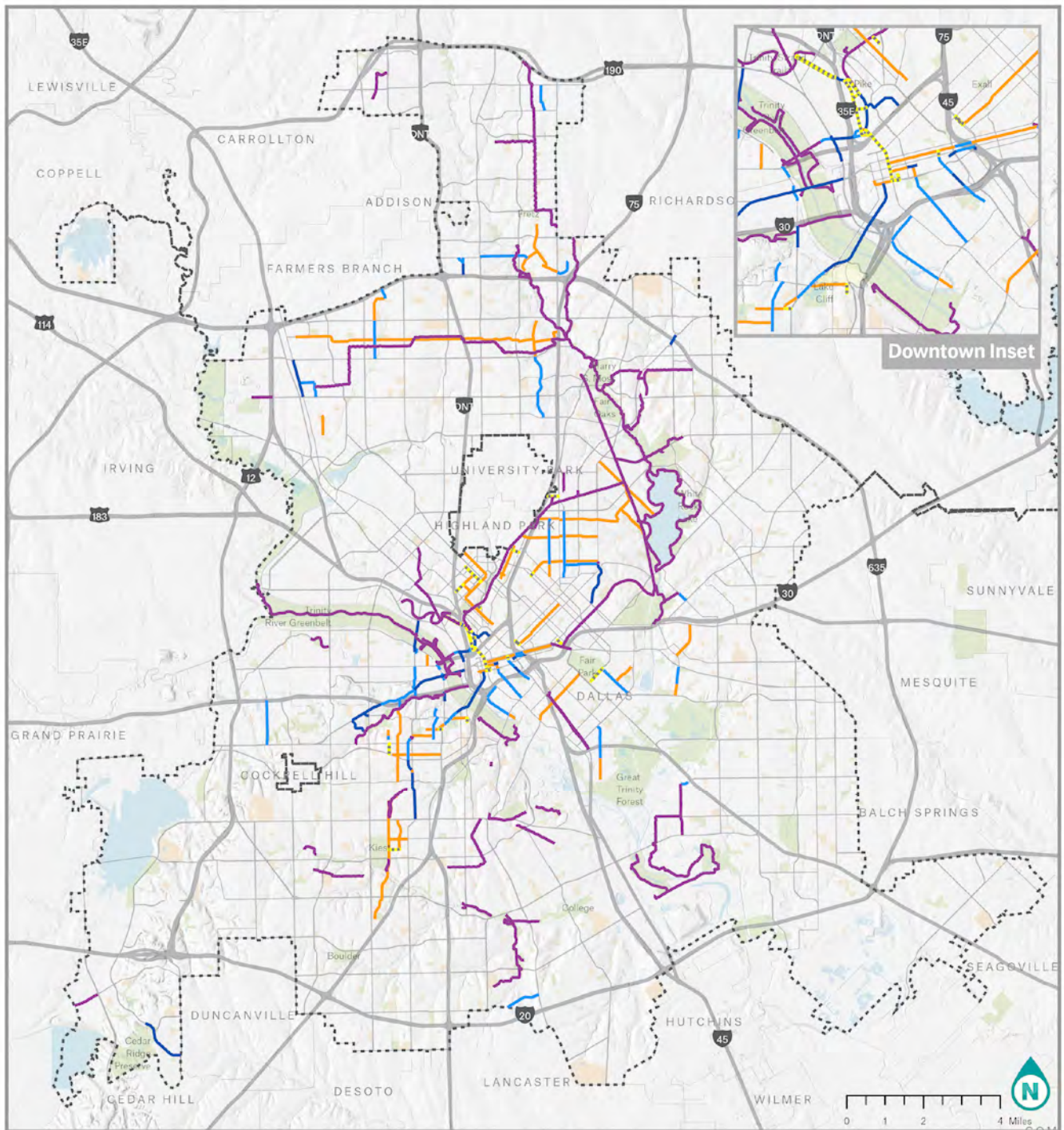
<sup>1</sup> 2045 Regional Veloweb. <https://www.nctcog.org/trans/plan/bikeped/veloweb/adopted-2045-regional-veloweb>. Accessed 20 July 2022.

### Bike Lanes, Buffered Bike Lanes, and Cycle Tracks

Only a few streets currently have bike lanes, buffered bike lanes, or cycle tracks. Bike lanes are often along two-lane neighborhood collector streets, while buffered bike lanes and cycle tracks are primarily located along major roadways connected to paved trails, shared roadways, transit, and to more central downtown and commercial areas. Compared to other on-street facilities, buffered bike lanes and cycle tracks are considered low stress, providing extra separation between people driving and people on bikes. Although many of these facilities connect to paved trails and shared roadways, they are short segments connected to another facility only on one end, contributing to a disconnected bike network overall. A two-way cycle track, for example, along Denton Drive provides a low-stress connection between the Royal Lane light rail station and the Walnut Hill/Denton station; however, no bike facilities exist on either end.

While there are currently 211 miles of bikeways in Dallas, this represents only a fraction of Dallas's transportation system. Considering on-street bike facilities, the existing network is located along only 2% of the road network. Overall, the existing network represents a highly fragmented bike network. Existing facilities are due to significant efforts by the City and should form the basis for future network development. Network recommendations and prioritization should seek to create a more complete, connected system building from existing routes and minimize disconnected facilities. Opportunities include completing connections between existing facilities, improving comfort along existing routes, connecting to destinations, and exploring creation of a complete, connected system of low-stress local roadways that include traffic calming and bike priority at intersections. These low-stress facilities are also known as neighborhood bikeways.

Figure 1: Existing and Funded Bike Facilities in Dallas



**Existing Bike Facilities**

- Bike Route
- Visually Separated
- Physically Separated
- Trail
- To Be Removed

Dallas City Limits

## 2. LEVEL OF TRAFFIC STRESS (LTS)

LTS describes the expected experience traveling by bicycling along a roadway. At its foundation, LTS relates to the posted speed limit of the roadway, the width of the roadway, and provision of space for bikes. A roadway with fewer lanes for motor vehicles, lower posted speeds, and greater separation from motor vehicles is considered more comfortable for a bicyclist, while high speeds and mixed traffic conditions are least comfortable. LTS scores also provide insight into what type of bicyclist might travel along a corridor; for example, an LTS 1 is considered to be an all ages and abilities facility, support travel for all people, while an LTS 4 is high stress and may only be traveled by the most confident bicyclist. To better understand existing network gaps and opportunities to advance a low-stress network, an LTS analysis for Dallas was conducted.

Table 2 below depicts the LTS scores for roadways within Dallas.<sup>2</sup> Neighborhood and local roadways, are typically low stress (LTS 1 or LTS 2) and make up most of the network. Although many of these routes require a person bicycling to share the road with motor vehicles, the route's lower speed limits and fewer lanes support more comfortable travel by bicycle. Where present in the city, bike lanes, buffered bike lanes, and cycle tracks frequently contribute to lower stress routes

However, there are also more than 1,500 miles of high stress (LTS 3 or LTS 4) roadways across the city, representing nearly 35% of roadways in Dallas (Table 2). These roadways typically represent higher travel speeds, a greater number of travel lanes, and limited or no bike infrastructure. In some instances, these routes also include locations with existing bike facilities. For example, buffered bike lanes along Fort Worth Avenue (from I-30 to Sylvan Avenue), South Riverfront Boulevard (from Cadiz Street to Corinth Street), and the short segment along North Zang Boulevard (from E Colorado Boulevard northeast along Oak Cliff Founders Park), are high stress routes. This is due to high travel speeds and use of visual separation—as opposed to physical separation. The LTS would suggest that facilities in this condition would need to be upgraded with physical separation to achieve a more comfortable condition.

Table 2: Level of Traffic Stress Distribution in Dallas

Level of Traffic Stress	Percent of Roadway Network
LTS 4 – Highest Stress	34%
LTS 3	1%
LTS 2	5%
LTS 1 – Lowest Stress	60%

<sup>2</sup> The LTS analysis utilizes data provided by the City of Dallas and relies on the accuracy of attributes within the available dataset. Given the complexity of a city-wide dataset, the results of this analysis should be used a framework to guide further review and provide insight into recommended facilities. As this data is used to develop recommendations in subsequent stages of the Plan, further review may be required to confirm that roadway attributes are accurate.

High stress routes not only represent less comfortable bike travel along a corridor, they are often also a barrier to travel across the corridor (perpendicular). This limits the effectiveness of lower stress routes and results in a disconnected network for people traveling by bike. For example, many areas of Dallas have destinations within neighborhoods, including neighborhood parks and schools, are accessible via low stress local streets within that neighborhood. However, access to these destinations from outside of the neighborhood by bike, including regional destinations, is limited due to the barrier created by high stress corridors that require crossing.

Low stress bike travel is possible across some high stress roadways where there are protected crossings. Protected crossings are places where dedicated signals exist or where the crossing is separated from the roadway. Many locations where existing paved trails, bike lanes, buffered bike lanes, and cycle tracks cross high stress roadways do have protected crossings. Examples include:

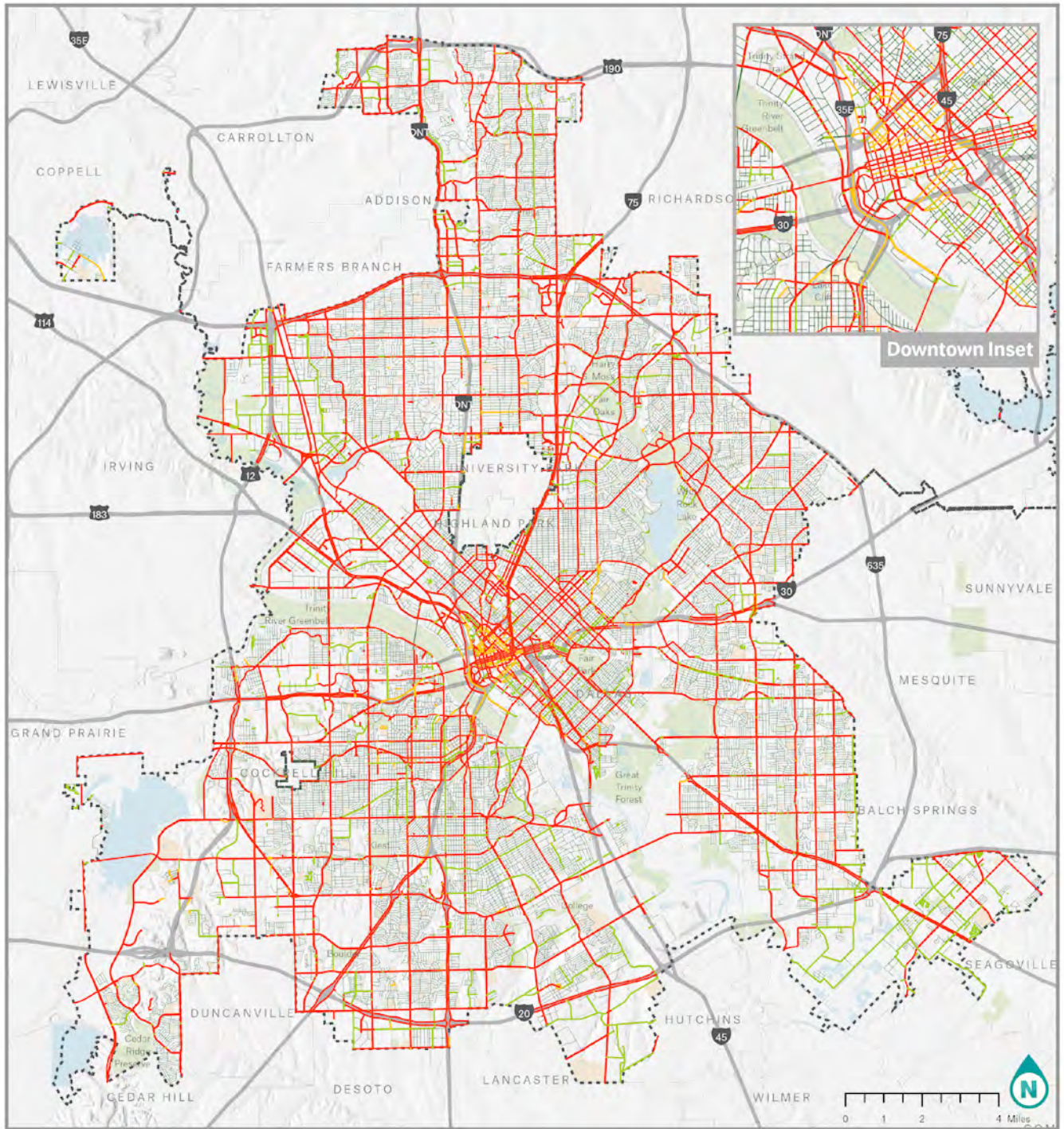
- The signal crossing of the Santa Fe Trail and South Munger Boulevard, which borders the Central Area and Southeast Area of Dallas
- The signal crossing of the Northaven Trail and Cox Lane in the Northwest Area

More typically, however, low stress bike travel—particularly along neighborhood streets—is not possible across high stress roadways because of unprotected crossings where no dedicated signals or separated crossings exist. Examples include:

- The shared roadway along Bowser Avenue across Oak Lawn Avenue in Central Dallas
- The Kiestwood Trail where it crosses S Westmoreland Road in Southwest Dallas
- The shared roadway along Monticello Avenue across Skillman Street in Northeast Dallas

There is significant opportunity to support a complete, connected system of low stress routes to support local travel in the city, while connections to trails and protected facilities along collectors can support travel across the city or to more regional destinations. Recommendations should place an equally important emphasis on improving high stress arterial crossings through use of signals and other treatments as prioritizing route improvements along key corridors.

Figure 2: Level of Traffic Stress



- Level of Traffic Stress**
- LTS 1
  - LTS 2
  - LTS 3
  - LTS 4
- Dallas City Limits

### 3. SAFETY

The Safety Analysis considers the locations of bike- and pedestrian-involved collisions throughout Dallas, focusing on locations with a higher frequency of collisions as well as collisions resulting in a severe injury or fatality. Using data provided by the North Central Texas Council of Governments (NCTCOG), this analysis evaluates reported collisions occurring between 2014 and 2019 (Figure 3). The review of collisions will not only help identify locations for new or improved bike facilities but also can inform priority projects for implementation.

In addition to collision data, this analysis also includes considerations for the City's existing Bike High Injury Network (HIN). Identified in the City's Vision Zero Action Plan (2022), the Bike HIN are streets where the highest percentage of bike-involved fatalities and severe injuries have occurred. As reported in the Vision Zero Action Plan, just 1% of City streets account for 38% of fatal or severe injury collisions involving a person bicycling. The Bike HIN is concentrated along major roadways, with approximately 60% along major arterials and 32% along minor arterials. Much of the Bike HIN, as shown in Table 3 below, is located in Northeast Dallas, closely followed by North Central and Central.

Table 3. Mileage of Bike HIN by Planning Area

Planning Area	Mileage of Bike HIN
Northwest	15.55
North Central	34.1
Northeast	43.62
Central	27.11
Southwest	6.55
South Central	15.35
Southeast	31.3

Overall, the data between 2014 and 2019 shows 661 bike-involved collisions, including 14 fatalities and 108 severe injuries. Bike-involved collisions, including fatalities and severe injuries, were more frequent in Central Dallas and along major arterials throughout the city, consistent with the Bike HIN. Table 4 below shows the number of bike-involved fatalities and severe injuries across Dallas by planning area. Over half of the bike-involved fatalities and severe injuries, however, were located *outside* of the Bike HIN. The fatalities located outside of the Bike HIN were all located in south Dallas, including Southwest, South Central, and Southeast Dallas planning areas. Severe injuries located outside of the Bike HIN were located throughout the city, but also more concentrated in Southwest and Southeast Dallas.

Table 4. Number of Bike-Involved Fatalities and Severe Injuries by Planning Area

Planning Area	Number of Fatalities	Number of Severe Injuries
Northwest	2	9
North Central	0	7
Northeast	0	24
Central	3	22
Southwest	1	18
South Central	3	6
Southeast	5	22

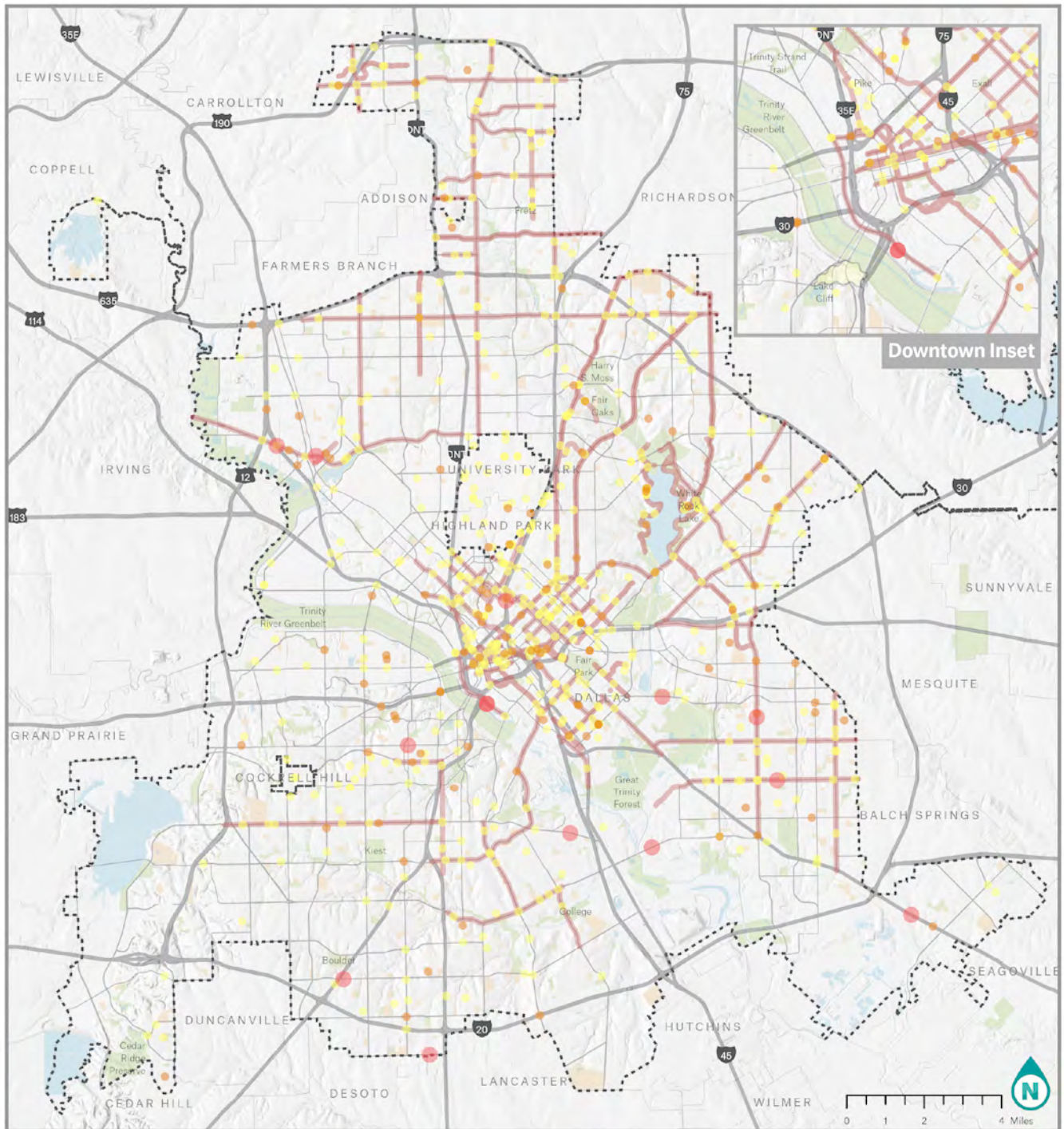
Existing bike facilities are generally not located along the Bike HIN; however, there are routes located in Central and Southeast Dallas where the Bike HIN is coincident with existing bikeways. For example, in Central Dallas, shared lane markings exist along the Bike HIN on segments of Main Street, Victory Avenue, Continental Avenue, North Lamar Street, and Young Street. In Southeast Dallas, shared lane markings are located along Martin Luther King Jr. Boulevard. Finally, in Southeast Dallas, bike lanes are located along Lagow Street, part of the Bike HIN.

Although routes with more comfortable facility types, such as buffered bike lanes, may provide a lower stress route, there are locations in the city where these facilities are co-located with segments in the Bike HIN. Examples include North Lamar Street and South Riverfront Boulevard. Additionally, many existing facilities intersect with the Bike HIN. Recommendations should identify opportunities to not only improve safety along existing bike facilities but also improve safety at major crossings

Bicyclist-involved fatal or severe injuries during this period more often occurred along routes without existing facilities. However, there are a few exceptions in both Central Dallas and Southwest Dallas. In Central Dallas, severe injuries have occurred along streets with shared lane markings, such as Main Street, North Lamar Street, and Fairmount Street. A fatality also occurred along South Riverfront Boulevard, which has a buffered bike lane. In Southwest Dallas, two severe injuries have occurred along North Edgefield Avenue, which has existing shared lane markings. These facilities should be considered for an upgrade to a lower stress facility. Overall, most severe, or fatal bike-involved collisions have occurred on streets without bike facilities. Opportunities should be explored to provide more connections to and between the existing low stress bike facilities, particularly along high stress corridors with a high number of severe or fatal bike-involved collisions.

In addition to understanding where crashes are occurring today in relation to existing facilities, it is also important to understand the distribution of these crashes in regard to where people are traveling and how safety trends may be impacting populations differently. More information about each of these can be found in the following sections.

Figure 3: Safety



- Bicyclist-Involved Collisions**
- Fatal
  - Suspected Serious Injury
  - Other Collisions
- Bike High Injury Network
- - - Dallas City Limits

## 4. ACTIVE TRIP DEMAND

Understanding potential demand for active transportation (like bicycling) can help the City of Dallas identify locations where bike facilities may have the greatest impact. For the purposes of this analysis, high potential active trip demand refers to areas where most trips are three miles or less in length. When considered in coordination with key destinations and activity centers, this analysis reveals where bike network improvements may have the greatest impact.

Short trips are important to consider because they can be good candidates for replacing a motor vehicle trip with an active trip, such as by walking, bicycling, or rolling.<sup>3</sup> Studies have shown that nearly 50% of all car trips in the United States are three miles or less,<sup>4</sup> a distance that could be supported by bicycling. Connecting local destinations with high quality bike infrastructure can provide more options for how people travel in their neighborhoods and beyond. Data from Replica Places provides insight into areas of Dallas with higher proportions of short-distance trips. Replica Places is an activity-based model that utilizes a combination of mobile, land use, census, and transaction data to generate census-block level trip estimates, including trip length, trip purposes, and trip mode.<sup>5</sup> For more information about the methodology, see Appendix F: Methods.

Shown in [Figure 4](#), significant areas of Dallas have high relative percentages of short trips. In fact, short trips make up at least 40% of trips in most areas of the city. Areas with lower proportion of short trips are typically areas with limited residential use (such as areas water, parks, or highway right-of-way) or represent single family residential areas with few community destinations and disconnected street patterns.

Areas with the highest proportion of short trips are often located in close to proximity to locations that generate trips, such as where people live, and attract trips, such as places of employment, parks and recreation, shopping centers, schools, or transit. For example, the areas with the highest active trip potential (largest share of short trips) are co-located with or adjacent to a public school, a destination that most frequently serves local neighborhood populations or are locations with an existing activity center, such as the Greenville Corridor, Deep Ellum/Uptown, Bishop Arts, and West Dallas, among others.

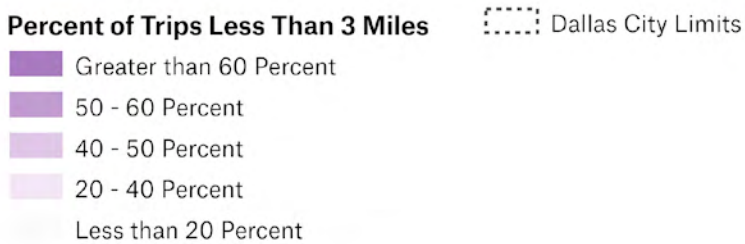
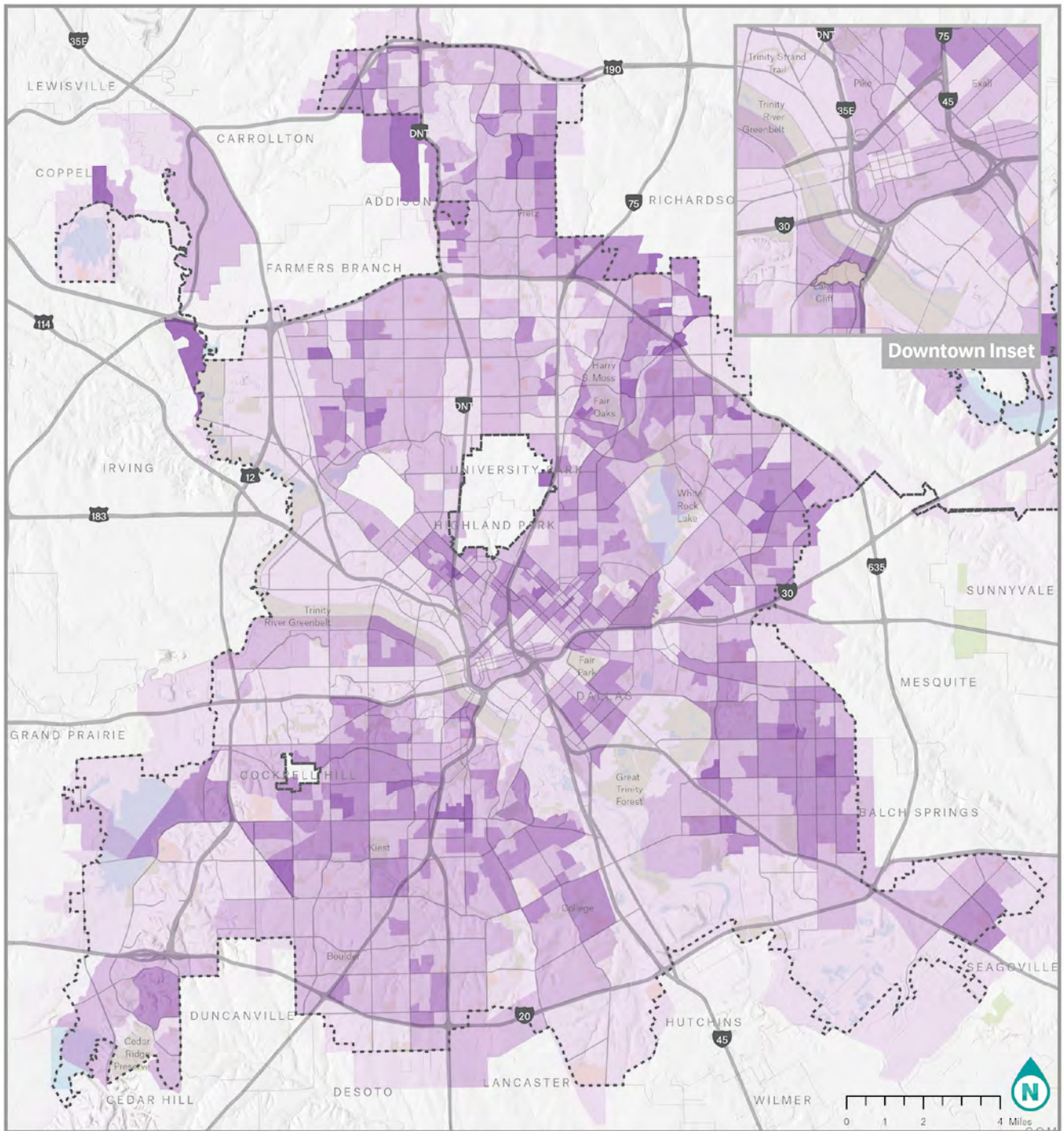
However, the areas with the highest active trip potential typically have limited existing bike infrastructure and are located along or near highways and high stress major roadways (most often arterial or collector roadways). Highways and high stress major roadways act as barriers to active travel but are also where many commercial uses are located outside of the downtown core, which is consistent with many land use patterns across the U.S. Similarly, many of the DART light rail stations in Dallas are close to highways such as U.S. Highway 75. As a result, these areas represent significant opportunity to expand local bike networks that provide complete low-stress connections to local destinations, with consideration for connections to nearby activity centers, regional routes, and multimodal trip opportunities. Connections across major roadways and barriers, such as highways, will be key to supporting a complete and connected network that facilitates access to schools, transit, parks, jobs, and community services.

<sup>3</sup> The term roll reflects those who might use a wheelchair or other assistive mobility devices.

<sup>4</sup> Curry, Melanie, et al. "Bikes and Scooters Could Replace a Lot of Car Trips in U.S. Cities." Streetsblog California, 17 Sept. 2019, <https://cal.streetsblog.org/2019/09/16/bikes-and-scooters-could-replace-a-lot-of-car-trips-in-u-s-cities/>. Accessed 5 July 2022.

<sup>5</sup> Results of this analysis were compared to data provided by NCTCOG. The NCTCOG analysis utilized LOCUS data from the first half of 2019. In general, the results of both analyses reflect similar trip patterns in Dallas.

Figure 4: Active Trip Potential



## 5. EQUITY & PUBLIC HEALTH

Defining equity is a context-dependent exercise and disadvantaged populations will vary from community to community. To establish a baseline, the Equity Analysis considers variables related to:

- Opportunity + Accessibility
- Environmental Justice
- Health
- Affordability (Cost of Living)
- Vulnerability

The equity analysis seeks to discover where people with the highest need for transportation options live within the City of Dallas. Understanding where these communities are most densely located help prioritize improvements and ensure that the benefits of future investments reach everyone. Working towards a more equitable transportation system may mean prioritizing active and public transportation funding in areas with a greater concentration of disadvantaged populations instead of distributing funding equally based on geography.

The equity analysis relies on large-scale, publicly available, and spatially-attributable data at the Census Block Group level. Each factor was assessed relative to Dallas County and combined into a composite score. These results are mapped to identify areas of higher need (higher scores). These results are shown in [Figure 5](#). While Health and Safety was factored into the larger equity composite score and analysis, public health—indicated by the percent prevalence of coronary heart disease among adults and the location of medical facilities—was also included as a separate analysis as shown in [Figure 6](#). While there may be overlapping areas and populations shown as higher need in both the equity analysis and the public health analysis, public health outcomes in relation to the transportation system may be unique to different areas of the city. For more information about the methodology, see Appendix F: Methods.

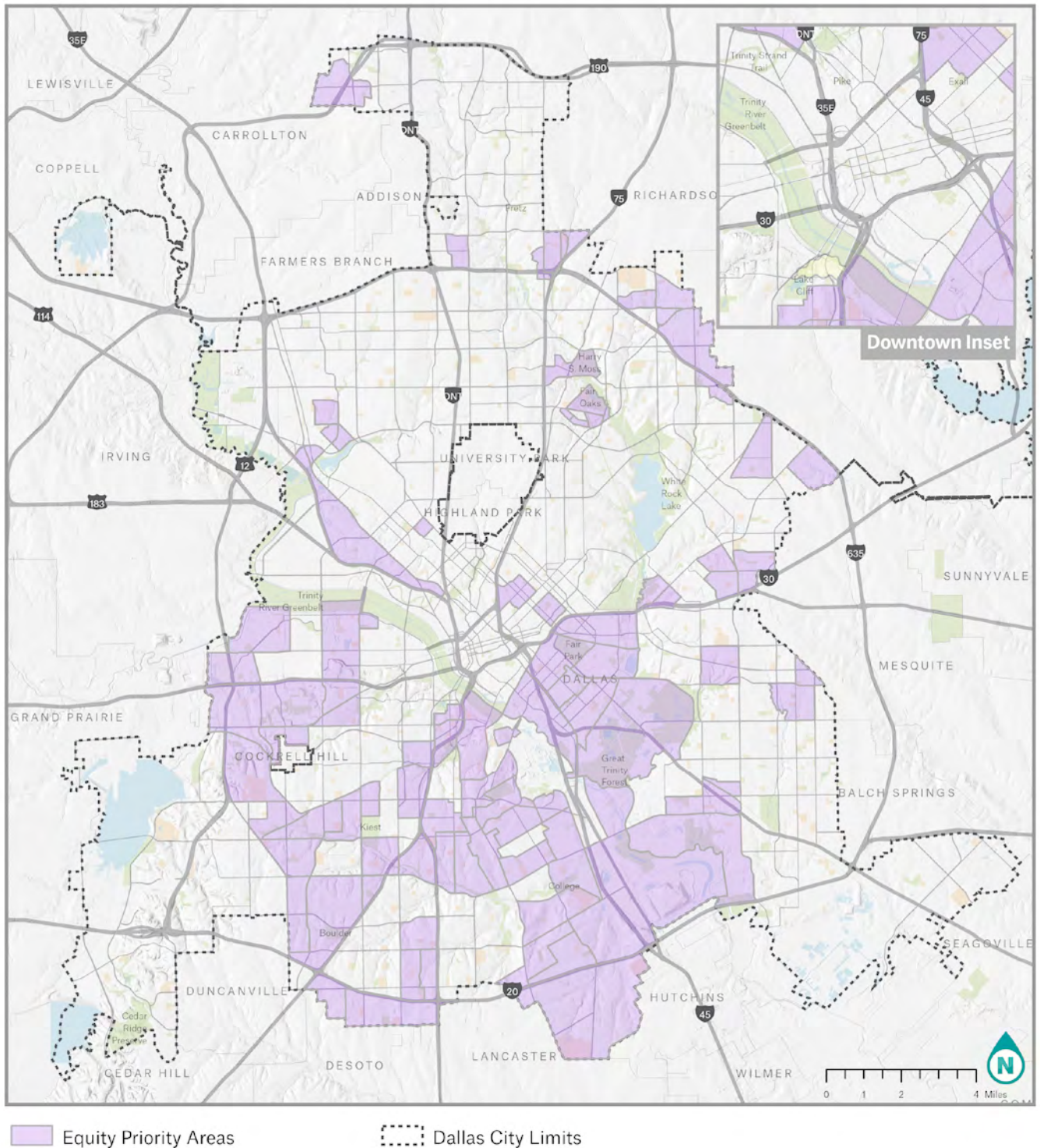
Based on the results of the equity analysis and public health analysis, the key takeaways include:

- High need areas are in southern areas of the city, with additional areas located most often near highways and other physical barriers. Like the equity analysis, the areas with the poorest health outcomes are located primarily in south Dallas. One significant difference, however, shows the poorest health outcomes are even more concentrated in South Central Dallas and the area of Southeast Dallas closest to Downtown.
- Over 17% of Dallas’s population resides in areas identified as highest need. These same areas contain 15% of Dallas’s overall roadway network.
- However, when compared in relation to the results of the safety analysis a disproportionate number of bike-involved fatalities and severe injuries occurred in the highest need areas and areas with the poorest health outcomes. Over a third of bike-involved fatalities (29%) and severe injuries (31%) occurred in the highest need areas. Over a fifth of bike-involved fatalities (21%) and a quarter of severe injuries (25%) occurred in areas with the poorest health outcomes.
- When compared in relation to the results of the LTS analysis, many of the high need areas and areas with the poorest health outcomes also have multiple high stress roadways and/or highways running through them, acting as a barrier for active travel along and across these roadways.
- Areas that are identified as high need are typically located in locations with fewer short trips (lower active trip potential). These areas have fewer destinations, and while some areas have opportunities to connect to the light rail network, the lack of existing bike infrastructure limits active transportation connections to transit. Trails are often located at the periphery of these areas and offer an opportunity to provide low-stress connections to

other areas of the city. Examples includes along I-45 south of downtown and areas south of I-30 west of Fort Worth Avenue.

Overall, a disproportionate number of bike-involved fatalities and severe injuries occurred in the highest need areas in terms of both equity and public health. Although the highest need areas represent 17% of the city's population, these areas have experienced 31% of all serious injury collision involving a person bicycling and 29% of fatal crashes involving a person bicycling. Many of these areas are located in South Dallas, which also has the fewest existing bike facilities. Opportunities should be explored to provide low stress bike facilities in the highest need areas and connect these facilities to the rest of the existing bike network. Improvements should be prioritized along high stress roadways—or where a parallel alternative exists—with connections to community destinations such as parks, schools, health facilities, light rail stations, and other community services.

Figure 5: Equity Analysis





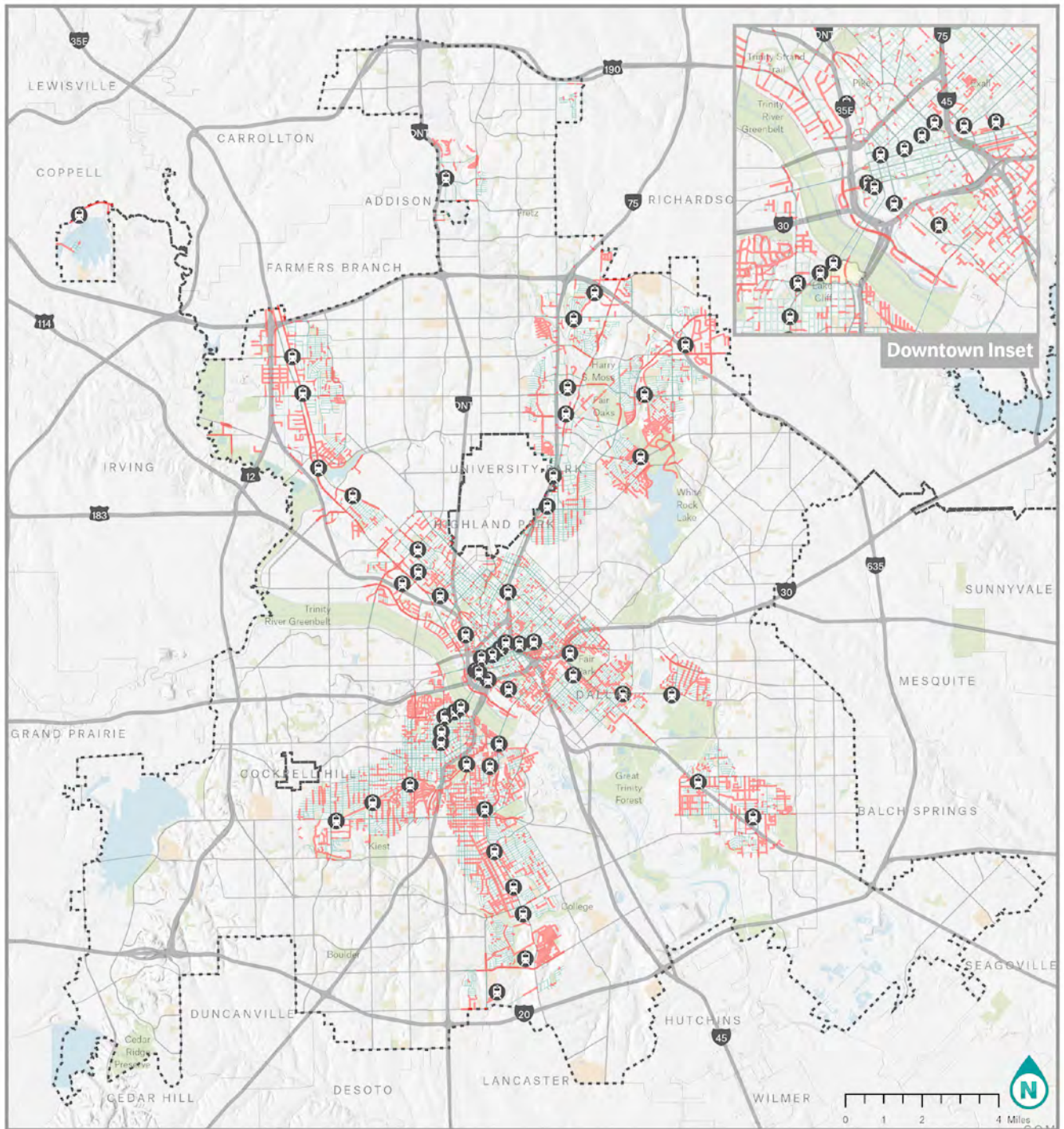
## 6. PEDESTRIAN & TRANSIT MULTIMODAL FACILITIES

While the Dallas Bike Plan will focus on the on- and off-street bike networks within the city, it is also important to understand how the bike network may interact with the existing pedestrian and transit networks. Transit stops are an important destination, as described in the Demand section above, and direct connections to these locations may require sidewalk-based connections for those traveling by bike. [Figure 7](#) displays the existing sidewalk network within 3 miles of transit stops. Although this plan will not include specific recommendations for pedestrian improvements, it is important to consider how both the bike and pedestrian networks interact to support access to transit stops and stations. The results of this analysis can be used to inform facility type and alignment; opportunities for developing trail or sidepath facilities that can accommodate both bike and pedestrians; specific consideration for end-of-trip facilities, such as bike repair stations or bike parking; and/or network prioritization.

The sidewalk network near transit is relatively complete in Central Dallas, especially in Downtown. The sidewalk network near transit, however, is relatively incomplete across the rest of the city. While transit stops across Dallas are connected to sidewalks immediately surrounding the stop, many sidewalks are incomplete just within a block or two away from the stop, making it difficult for people to access transit. While most missing sidewalks are along residential streets, there are many examples of missing sidewalks along major high stress roadways near transit stops as well. Sidewalks are missing along large portions of S. Corinth Street Road, for example, which parallels the Illinois Station in South Central Dallas. Sidewalks are missing along large portions of S. Vernon Avenue approaching the Tyler/Vernon Station in Southwest Dallas.



In addition to missing sidewalks near transit stations, the existing bikeway network has few connections to transit. While this is true across the city, transit stations are more often without connecting bikeways across South Dallas, which has fewer existing bikeways overall. The City should explore opportunities to enhance connections to transit, especially transit stations with limited bikeways and sidewalk connections. Where existing trails connect to transit stations, the City should explore opportunities to enhance connections to these trails as well.

Figure 7: Multimodal Facilities



**Sidewalks Within 1 Mile of Rail Stations**

- Missing Sidewalk
- Existing Sidewalk

-  Rail Stations
-  Dallas City Limits