Appendix 1: Existing Conditions Report

Fort Worth Active Transportation Plan

April 2019

FORT WORTH®

North Central Texas Council of Governments

Introduction

Active transportation trends, previous and ongoing planning efforts, technical analyses, and input from stakeholders and the public informed the development of the Fort Worth Active Transportation Plan's (ATP) network and policy recommendations.

This report summarizes existing conditions in Fort Worth related to active transportation.

Findings, Themes, and Priorities

The existing conditions review and analyses yielded several key themes, which guided the ATP's network development and policy recommendation process The following section presents key findings organized under the themes of: Complete Networks, Equity, Connections to Transit, Barrier Mitigation, Geographic Variation, Safety and Comfort, Accessibility, Daily Destinations, Short-Trip Areas, and Short-Trip Area Connectivity. .

Complete Networks

TRAILS

- Fort Worth has the foundation necessary for a world-class trail network along the Trinity River and elsewhere in the city.
- There is a lack of comfortable connections to trails.

ON-STREET BIKEWAYS

- The on-street bicycle network has been slowly expanding over the past decade.
- Bike lanes have been built opportunistically, taking advantage of street resurfacing and Capital Improvement Program (CIP) projects.
- Dedicated funding to make connections has been limited.

SIDEWALKS

- Policies on sidewalk requirements have fluctuated over the years.
- Newer Fort Worth neighborhoods have strong sidewalk networks but are often in disrepair.
- In certain circumstances, developers have received waivers that allow them to not construct sidewalks.
- Available funding for repairing and building new sidewalks has been limited.

Equity

- Areas of Fort Worth where minorities make up more than 75 percent of the population have a disproportionate share of poor condition and missing sidewalks.
- A disproportionate share of pedestrian and bicycle crashes resulting in incapacitating injuries or fatalities are located in majority minority areas (70 percent).

Connections to Transit

- There is a significant need for pedestrian and bicycle connections to transit.
- Connections and accessibility to bus stops and rail stations are a priority for the city.
- Trinity Metro has made sidewalk improvements to enhance Americans with Disabilities Act (ADA) access to bus stops and has added bus shelters.

Barrier Mitigation

- Highways, roads with high traffic volumes and speeds, railroads, rivers, and other bodies of water can be barriers to active transportation in Fort Worth.
- Stakeholders identified the Union Pacific Davidson Rail Yard, I-20, I-30, I-35, and I-820 as some of the key barriers.
- Sidewalks in disrepair and intersections with insufficient crossing time and accommodation are barriers for people with disabilities.

Geographic Variation

- Fort Worth has varied walking and bicycling environments ranging from dense activity centers to suburban and rural areas.
- The ATP's network recommendations and analyses reflect the different needs in Fort Worth's urban core, suburban areas, and extraterritorial jurisdictions.

Safety and Comfort

- Network facilities should comply with the latest guidelines and resources from the American Association of State Highway and Transportation Officials (AASHTO), Federal Highway Administration (FHWA), and National Association of City Transportation Officials (NACTO).
- The ATP's comfort analyses highlight the most and least comfortable sections of the walking and biking networks, informing the ATP's network recommendations (see Chapter 3).

Accessibility

- ADA accessibility improvements are a high priority.
- ADA-accessible routes to transit stops and daily destinations, regular sidewalk repair and maintenance, and addressing sidewalk gaps are critical to ensuring accessibility to people walking and using wheelchairs.
- The ATP's analyses identified locations with sufficient and insufficient curb ramps, which can inform priority and funding decisions.

Daily Destinations

- The ATP seeks to accommodate Fort Worth residents' preference to travel by foot and bike to daily destination within relatively short distances.
- Daily destinations include schools, transit stations and stops, employment centers, retail areas, trails parks, community center, and libraries.

Short-Trip Areas

- Walking and bicycling trips are typically short compared to trips made by motor vehicle.
- According to the National Household Travel Survey (NHTS), the average walking trip for work, shopping, and social activities in Texas is between 0.6 – 0.7 miles. The average bicycling trip in Texas is 1.8 miles.[1]
- Short-trip areas in Fort Worth comprise areas identified as Urban Villages, mixed-use growth centers, and other high demand areas. In this study, short trip areas were identified through a combination of factors such as population density, employment density, and the presence of bus stops, schools, and households without a motor vehicle.

Short-Trip Area Connectivity

- While short trips to daily destinations are important, trips between neighborhoods are also important.

1 Federal Highway Administration. (2017). 2017 National Household Travel Survey, U.S. Department of Transportation, Washington, DC. Available online: https://nhts.ornl.gov.

1

CITYWIDE DATA

Part I: Citywide Statistics and Trends

The City of Fort Worth has thoroughly studied existing conditions and trends relevant to the future biking and walking networks. Several recent reports and presentations contain statistics and analyses that provided useful context for the Active Transportation Plan. The information on the spatial distribution of population growth, street condition, future land use, and poverty informed the network development and plan recommendations. This section summarizes data collected and provided by the City of Fort Worth separate from the Active Transportation Planning process. The salient points are summarized below.

Growth Trends[1]

Fort Worth has experienced fast population growth, but remains low-density in many parts of the city. Between 2010 and 2017, Fort Worth's population grew 17.9 percent from 741,206 to 874,168. Fort Worth is one of the three least dense among the 20 largest U.S. cities, along with Charlotte, NC and Indianapolis, IN. Low average land use density presents challenges for walking and bicycling. The city's population is expected to reach 1.4 million by 2045.

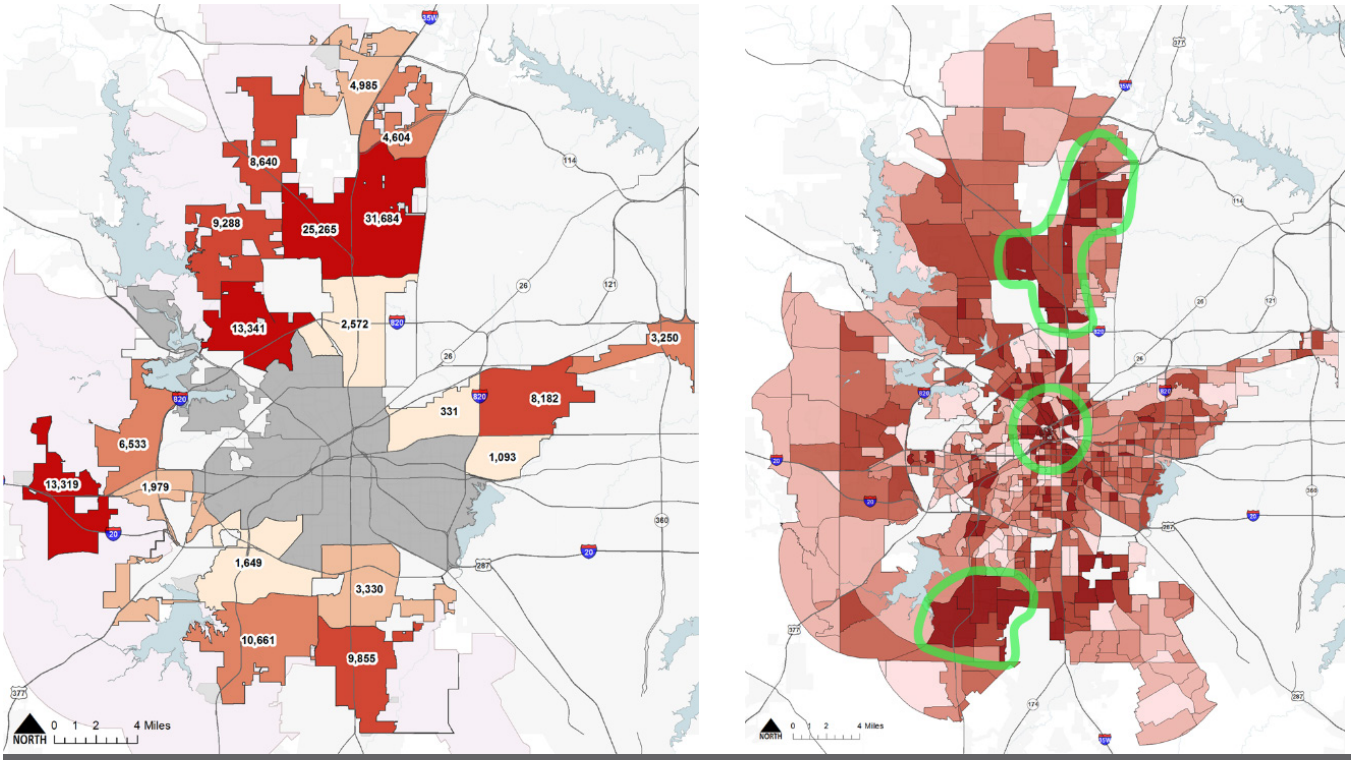
Fort Worth's population is younger on average than the U.S., Texas, and the Dallas-Fort Worth (DFW) regional averages. Twenty-eight percent of Fort Worth's population is under 18 years old compared to 26 percent for DFW, 26 percent for Texas, and 23 percent for the U.S. overall. Surveys show that young people are more likely to bike for transportation and value walkable communities in choosing where to live.[2] Walkable communities are also critical to successfully "aging in place."

In the next ten years, population growth is expected in the north and west quadrants of Fort Worth. By 2045, growth is also expected south along Chisholm Trail Parkway, north along I-35W, US 287, and in and around Downtown. Significant job growth is expected in downtown, along I-35W and in Centreport. These areas will benefit from pedestrian improvements and bicycle facilities.

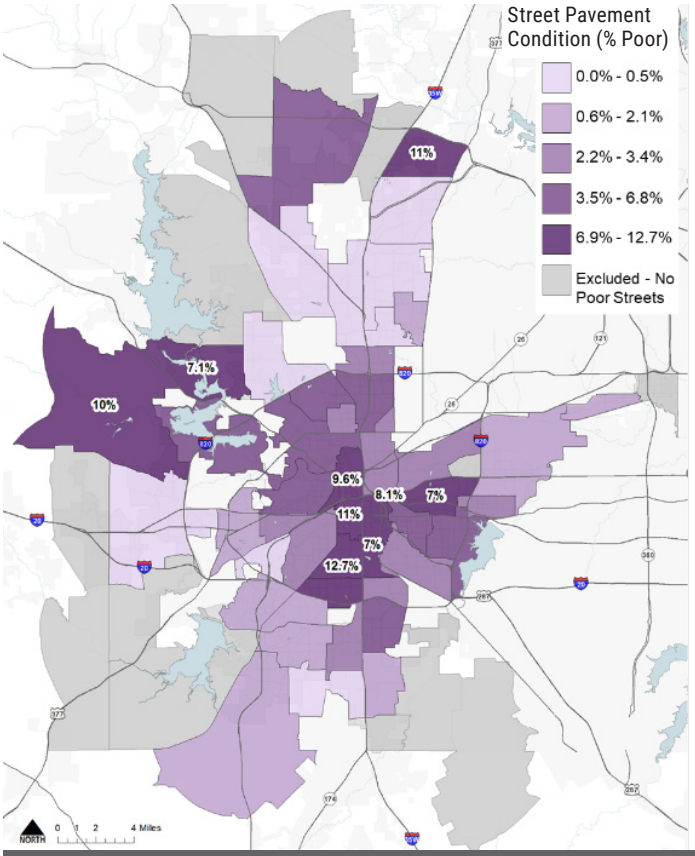
More than 80 percent of the streets in Fort Worth are reported to be in "good" or "excellent" condition, but parts of downtown and other parts of the city (see Figure 3) have between 7 and 13 percent of their streets in "poor" condition. As the City repaves these streets there may be opportunities to add crosswalks and re-stripe to accommodate bicycle facilities.

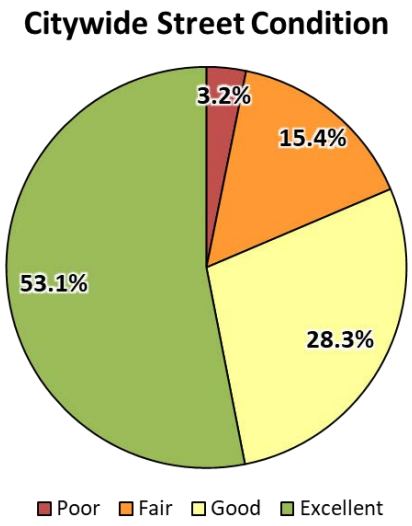
1 Growth and Economic Trends, Presented to the City Council, February 9, 2018

2 National Association of Realtors, "Millennials Favor Walkable Communities, Says New NAR Poll," 7/28/15. https://nacto.org/wp-content/uploads/2016/02/1_Natl-Assoc-of-Realtors-2015-Community-Preference-Survey.pdf



Figures 1 and 2. Left: Projected 10-year Population Growth, 2017-2027; Source: Transportation Impact Fee Study, 2017. Right: Projected Population Growth per Acre, 2010-2045; Source: NCTCOG, U.S. Census Bureau, 2010 Census. Areas south along Chisholm Trail Parkway, North along I-35W and US 287, and in and around downtown are highlighted in green as high growth areas.





Figures 3 and 4. Left: Percentage of streets where pavement and street conditions are rated as "poor." Right: Citywide Street Condition. Source: Transportation and Public Works, 2017.

As of 2017, 43 percent of the population lives within ½ mile of existing bikeways and trails, up from 40 percent in 2016. This increase is likely due to a combination of new trail development and changes in the distribution of the population to be closer to existing trails. There are opportunities to expand the bicycle and trail network to reach more parts of the city. Bicycle, trail, and facility coverage is addressed in greater detail later in this report.

% Population within ½ Mile of Bikeways and Trails 2017

Citywide
2017: 42.8%
2016: 40.2%

Source: Planning and Development

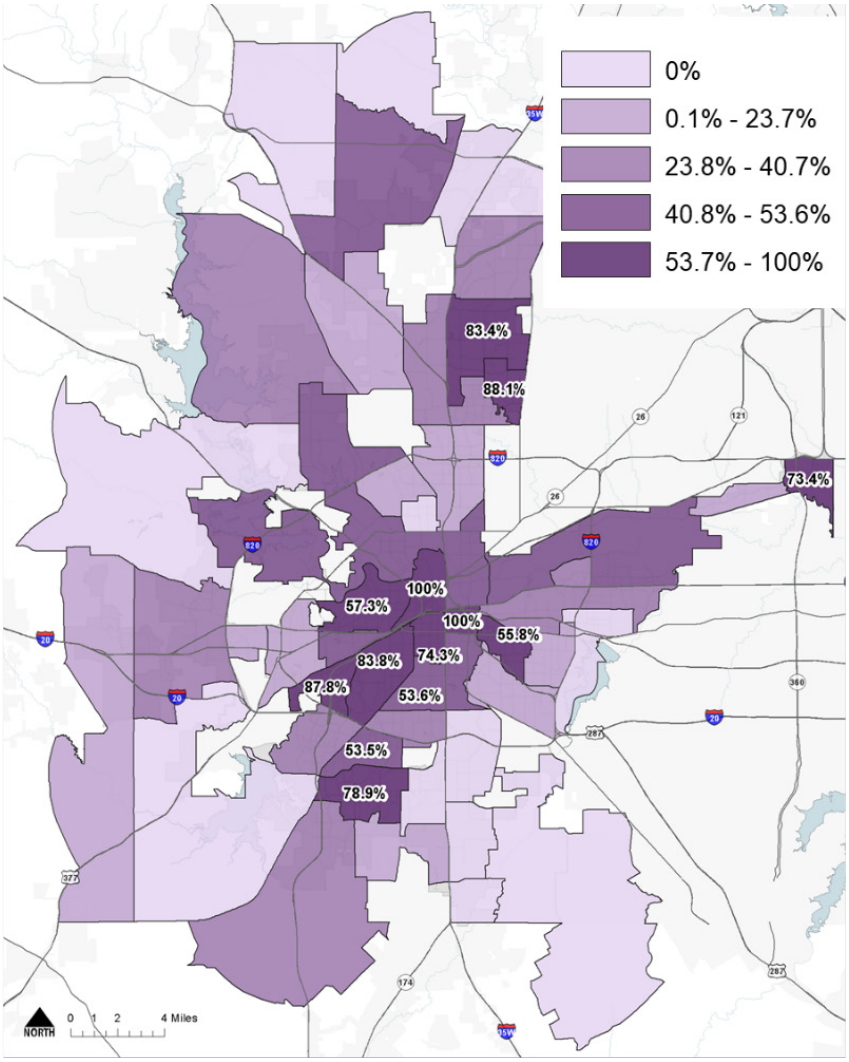


Figure 5. Percentage of population within ½ Mile of Bikeways and Trails, 2017. Source: Planning and Development

Economic Development Strategy

The City of Fort Worth's Economic Development Strategic Plan found that while Fort Worth is a fast growing city, the jobs-housing balance is shifting with an increasing number of residents traveling to jobs in other cities in the region.[3]

The City's strategies are to:

- Increase non-residential development and land value of commercial, industrial, mixed-use areas
- Improve jobs/housing balance
- Improve educational attainment
- Attract higher wage jobs
- Support residential development in and around Downtown to support higher wage job growth

These goals are compatible with developing a robust active transportation network: bicycling and walking facilities attract workers, support mixed-use development, and support downtown residential development. The strategy identifies "Multiple Growth Centers," including 24 Regional Mixed-Use Centers and Community Mixed-Use Centers. These are likely strong candidates for investments in bicycling and walking. The strategy also calls for more areas zoned for mixed-use developments. With a combination of retail, residential, or other uses in close proximity, these areas generally have shorter trip distances and enable more walking and bicycling trips.

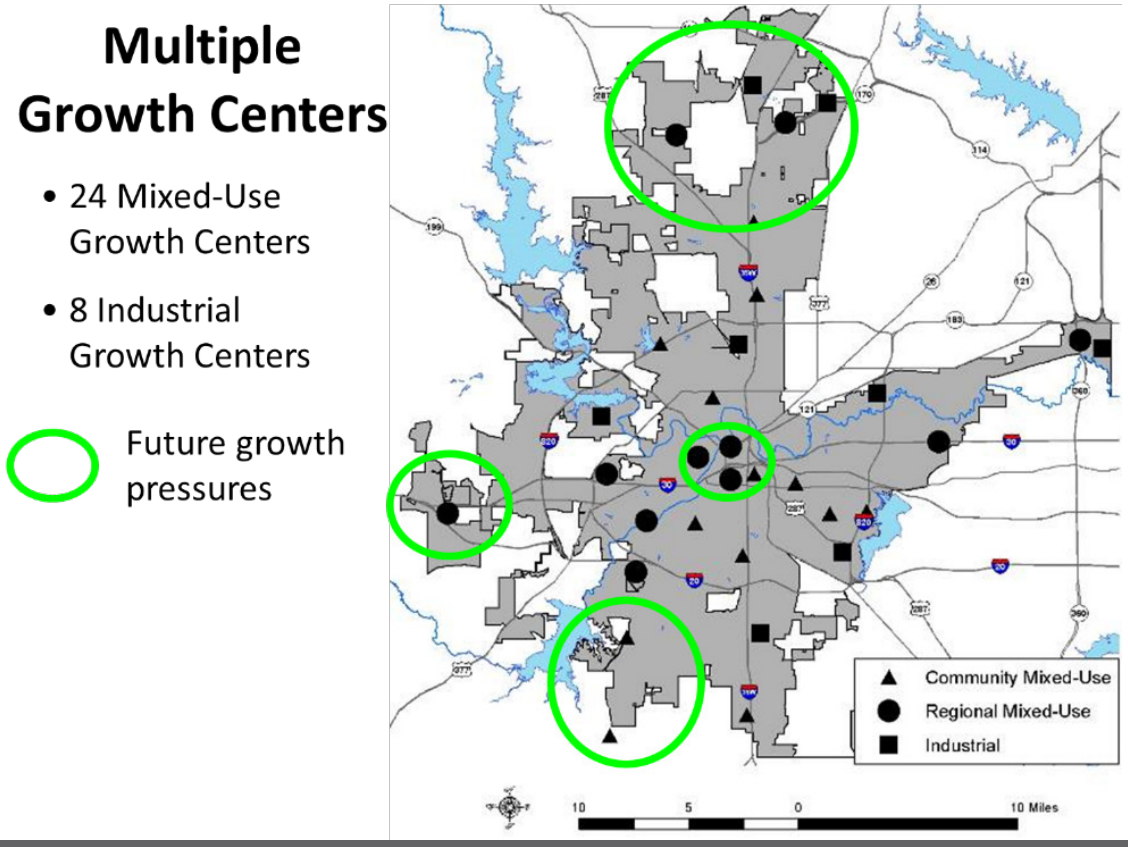
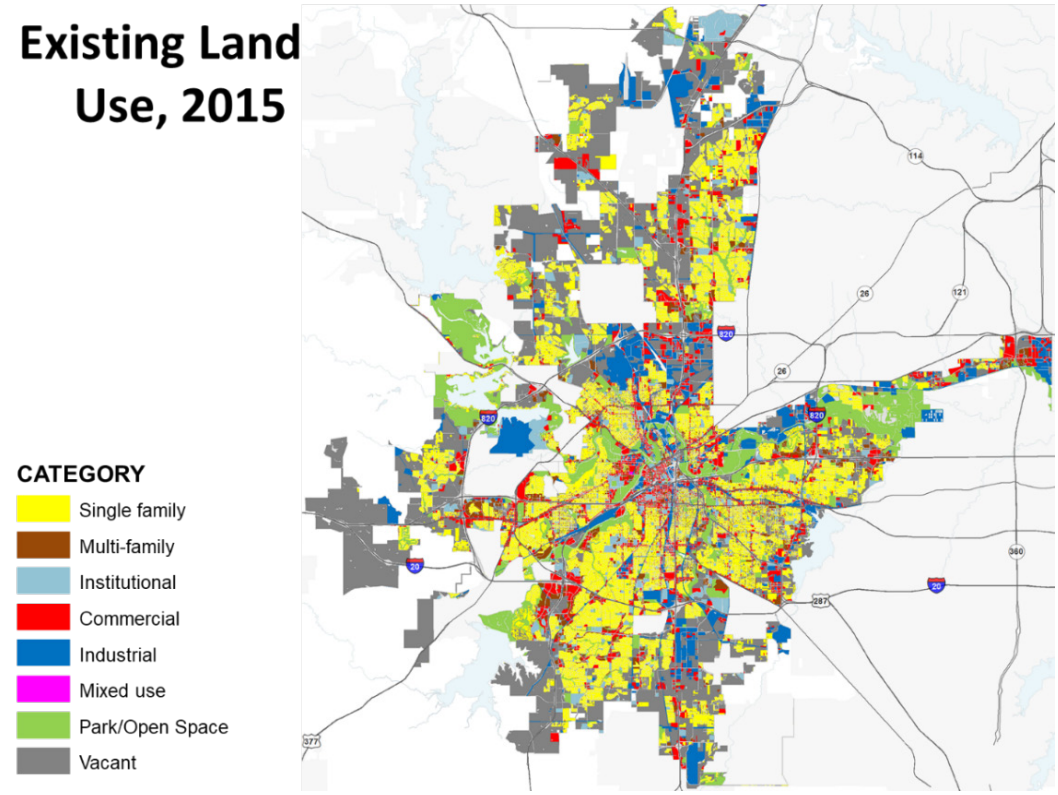
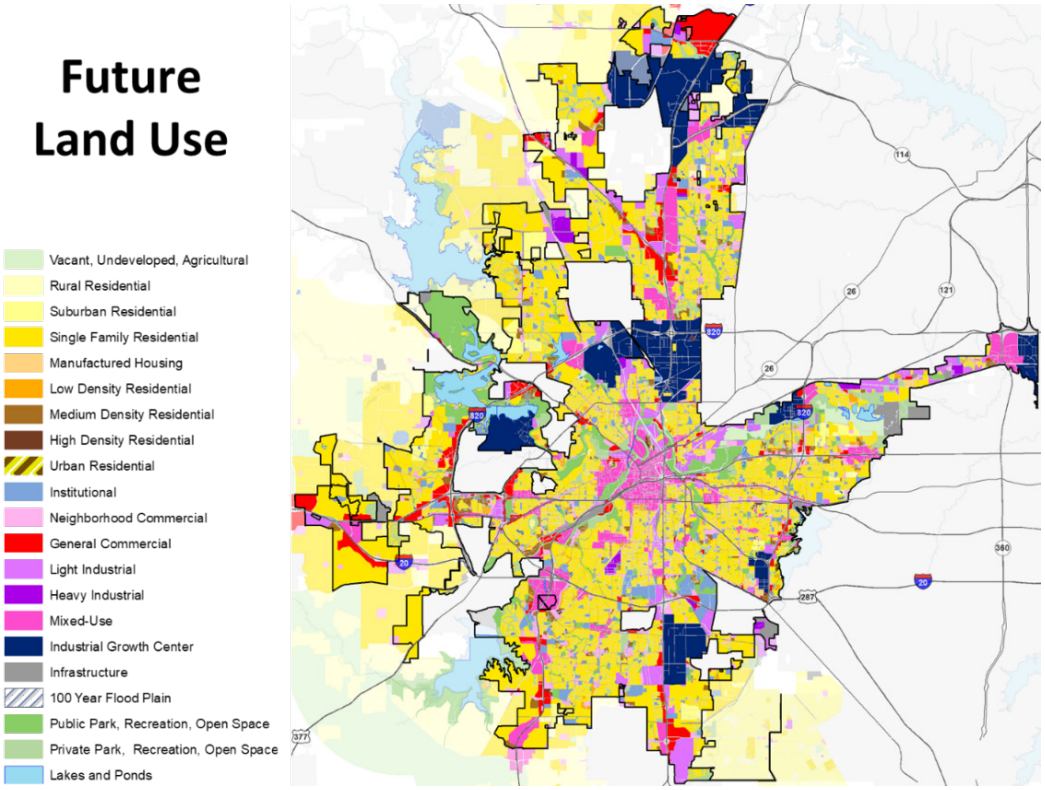


Figure 6. Multiple Growth Centers.

3 "Economic Development Strategy," Presented to the City Council, February 9, 2018





Figures 7 and 8. Existing Land Use and Future Land Use Maps of Fort Worth. The amount of Mixed Use is expanded in the Future scenario, indicating potential demand areas for active transportation infrastructure.

Task Force on Race and Culture Transportation Committee

In August 2017, the Fort Worth City Council appointed a task force to advise on issues related to race and culture in Fort Worth.[4] The task force is calling this initiative and the community input phase *One Fort Worth*. Through this effort, data has been collected on issues related to race and culture in the city, including access to transportation.

Fort Worth is 60 percent non-white and has many "majority minority" neighborhoods, meaning that a majority of the residents are people of color. These neighborhoods have a disproportionate share of the pedestrian and bicycle crashes and fatalities (see Table 1). Poverty and unemployment are concentrated in the south and eastern parts of the city (see Figures 9, 10, 11, and 12). Figure 11 shows the majority minority communities that are located within a ½ mile from a bicycle and pedestrian trail (green) and those that are not (yellow). Figure 12 shows the distribution of bike share stations in relation to majority minority communities. Planning for safe bicycling and walking facilities throughout the city is a critical aim of the Fort Worth Active Transportation Plan.

Table 1. Pedestrian and bicycle crashes—citywide and in Majority Minority Areas.

	Fort Worth	Majority Minority Areas	Percent in Majority Minority Areas
Total Population	815,930	489,686	60%
Pedestrian Crashes	1,163	798	69%
Pedestrian Fatalities	112	88	79%
Bicyclist Crashes	378	227	60%
Bicyclist Fatalities	7	6	86%

4 Task Force on Race and Culture Transportation Committee, "Continued Data Review & Subject Matter Expert Interviews," March 8, 2018.

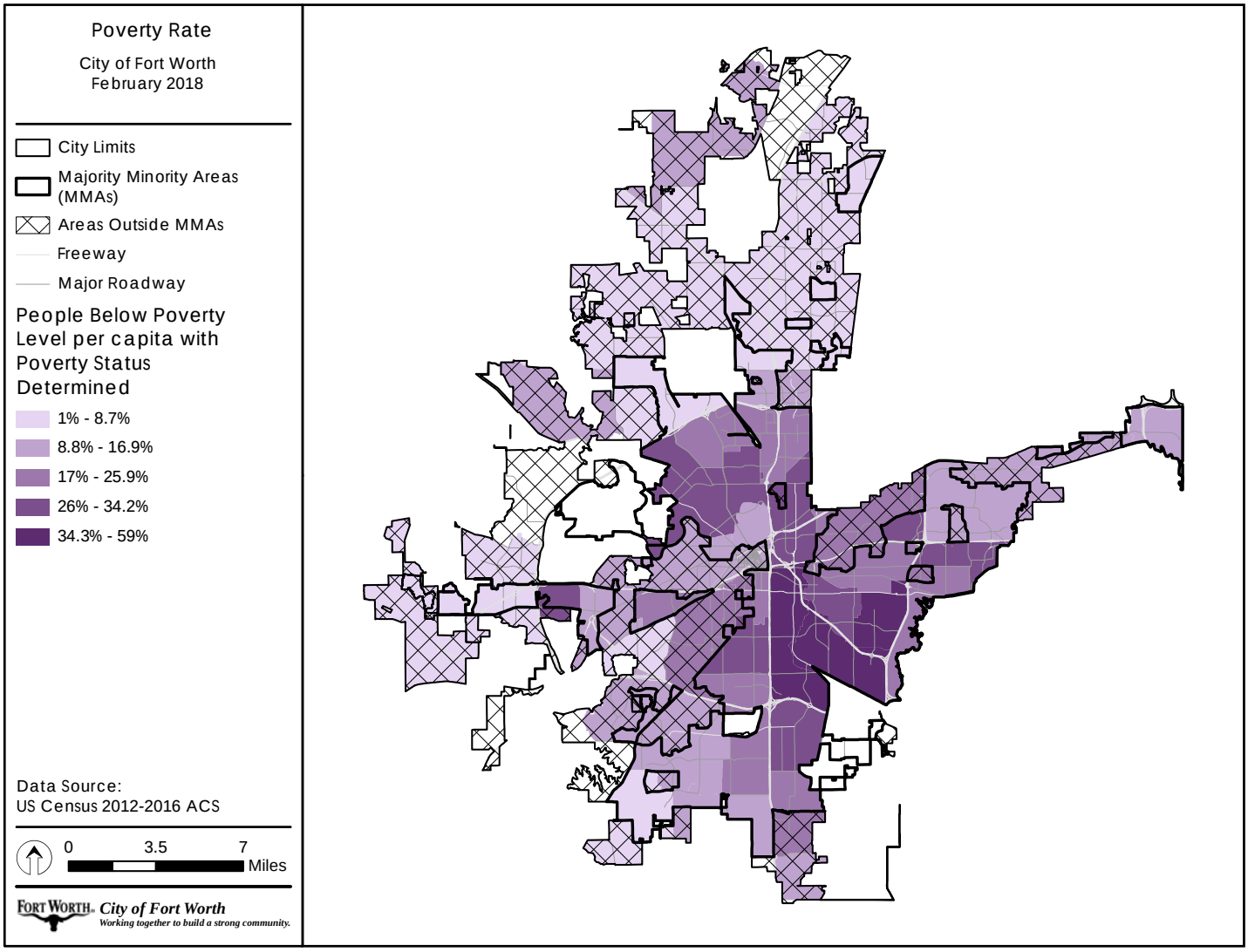


Figure 9. Spatial distribution of poverty in Fort Worth.

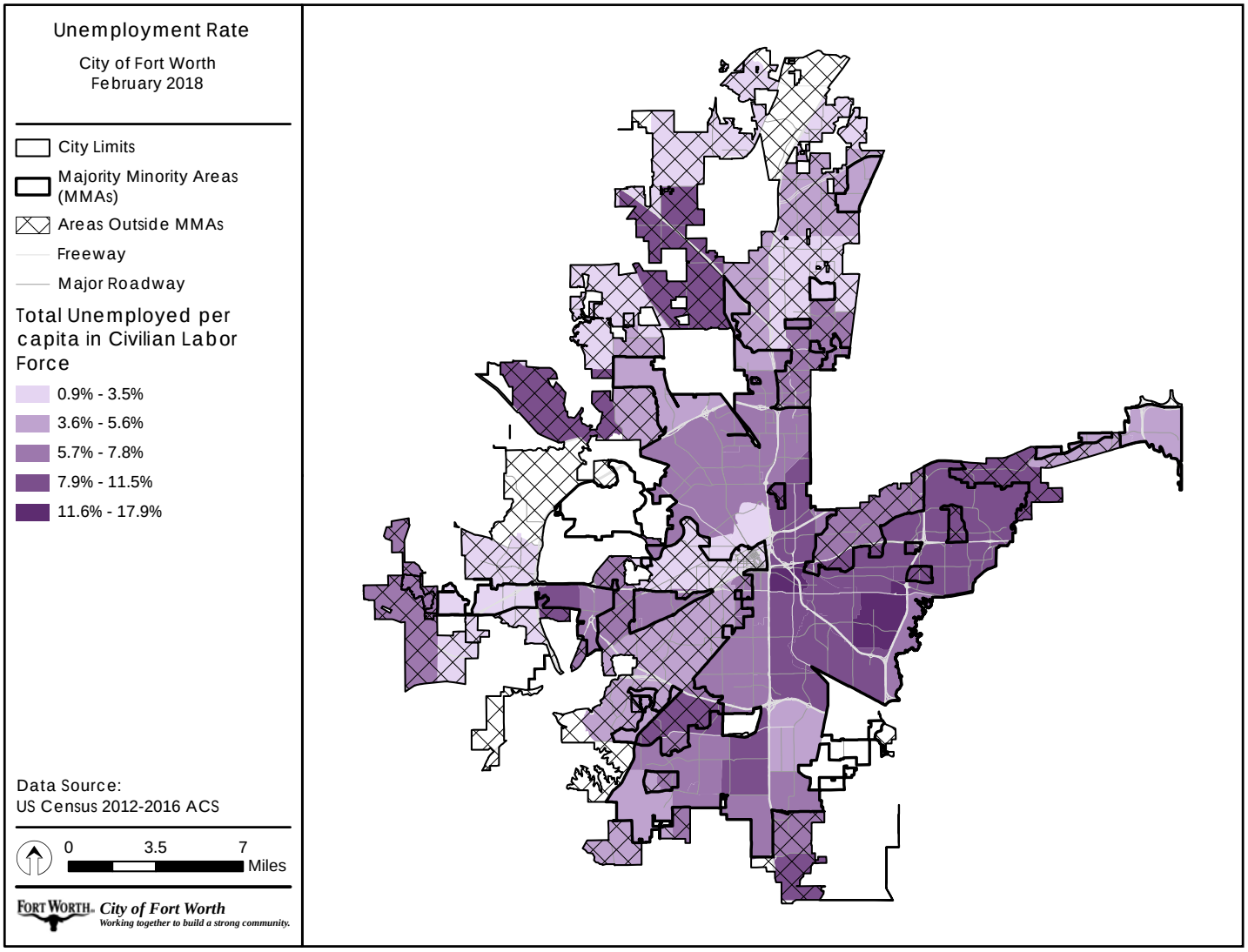


Figure 10. Spatial distribution of unemployment in Fort Worth.

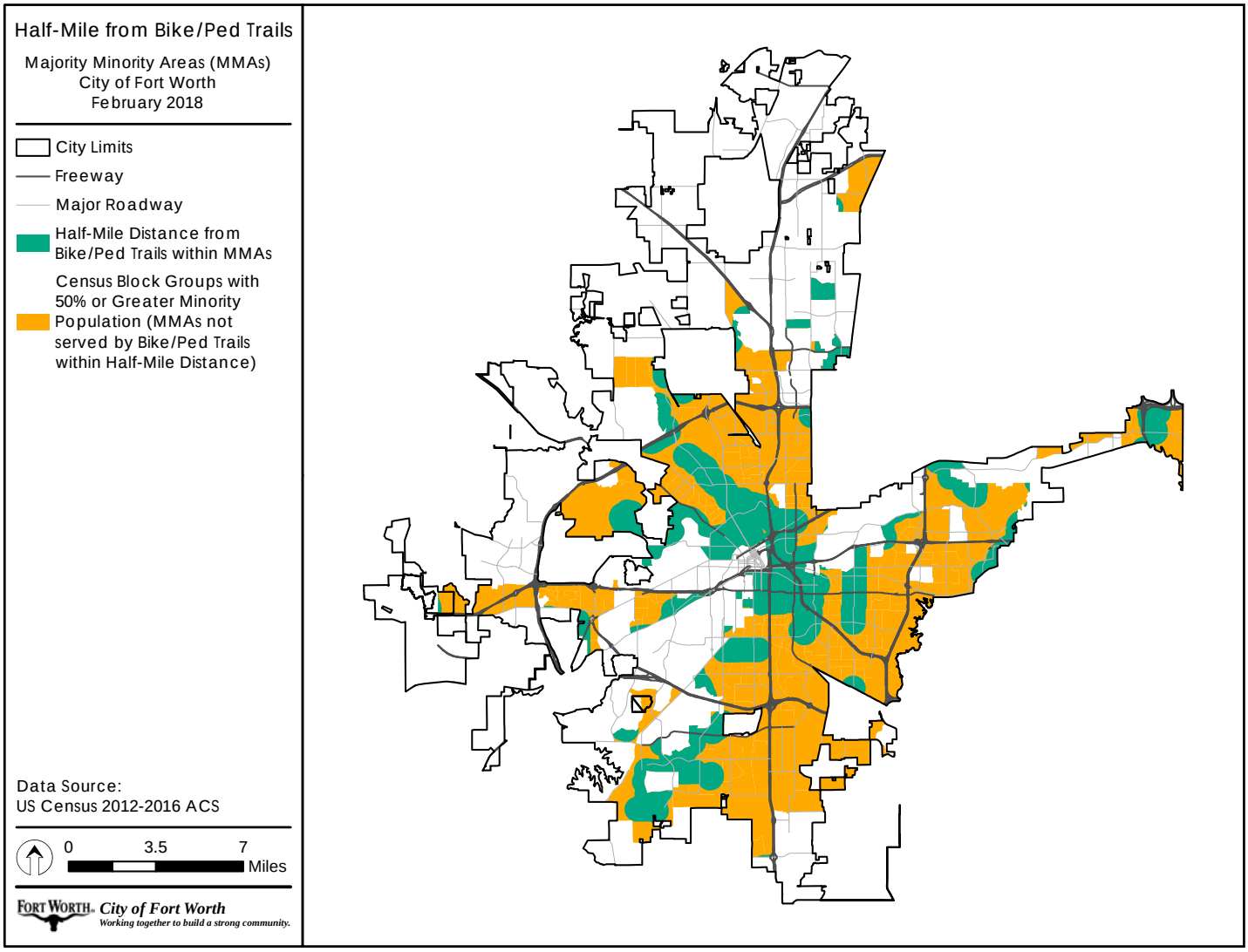


Figure 11. The majority minority communities that are located within ½ a mile from a bicycle and pedestrian trail (green) and those that are not (yellow).

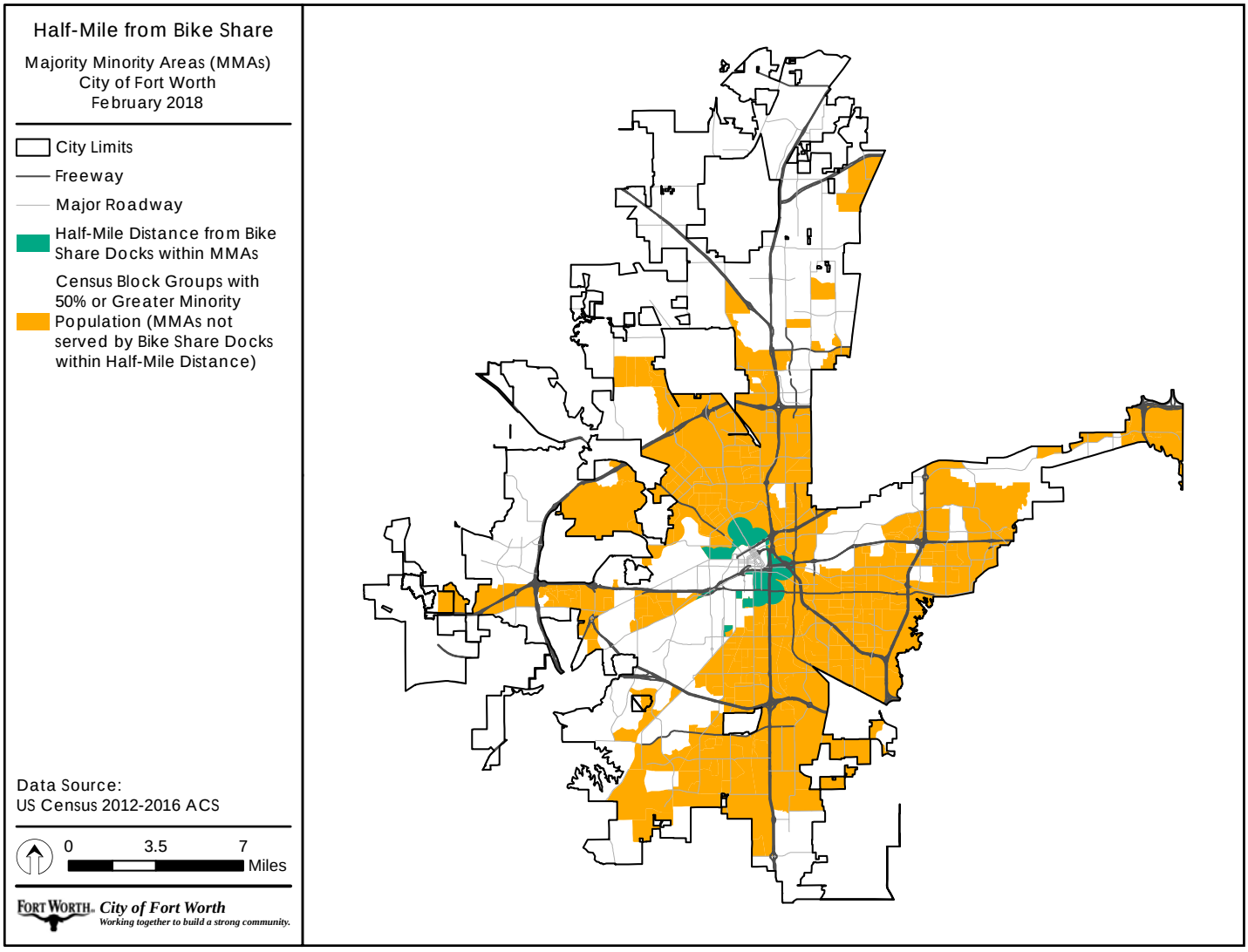


Figure 13. The distribution of bike share stations in relation to majority minority communities.

2

EXISTING PLANS AND DOCUMENTS

Part II: Previous Planning Efforts and Guiding Documents

The following documents have been guiding planning efforts in Fort Worth to date. This section summarizes content in those documents that was relevant to the development of the Fort Worth Active Transportation Plan.

Bike Fort Worth (2010)

Adopted in 2010, the Bike Fort Worth plan has been the City's primary planning document guiding the development of a friendlier bicycle environment. This document includes recommendations to establish policies that are supportive of bicycling; develop programs for bicycle education, encouragement, and enforcement; and promote bicycling for both transportation and recreation. Over 1,000 miles of on- and off-street bicycle facilities are recommended in this plan at ultimate build out. The plan was primarily focused on on-street facilities such as signed routes and conventional bike lanes, many of which were planned to be accomplished as roadway retrofit and road right-sizing projects. Existing and future off-street mixed-use trails were also considered, mainly where they could provide connectivity to the on-street system.

The ultimate plan vision included a total of 762 miles of signed routes, on-street bikeways, and off-street facilities within the city and another 162.7 miles in the Extra-Territorial Jurisdictions (ETJ). A conceptual primary bicycle corridor map was developed to promote the development of a comprehensive and connected network. Projects within this system should have priority for implementation in the bikeway network.

Figure 1: Bike Fort Worth (2009)

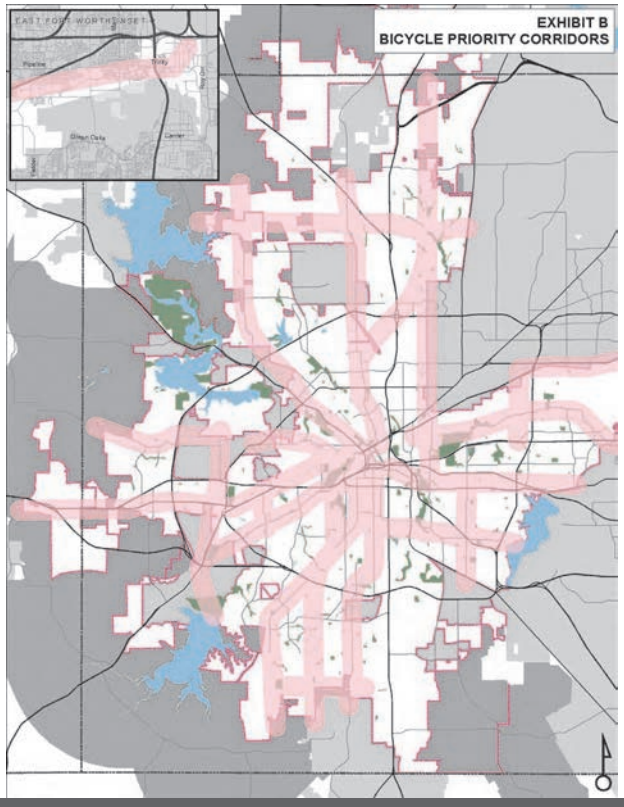


Figure 1: Bike Fort Worth Bicycle Priority Corridors

Implementation

The following is a summary of the implementation progress of on-street bicycle infrastructure since the 2010 plan:

	2010 lane miles	2018 lane miles
Bike Lanes	9.6	86.8
Bike Routes	68.0	87.2

The plan also recommended the consideration of "innovative treatments" where appropriate. The city's first two-way separated bike lane was constructed in 2016.

Many policy and program recommendations included in the plan have since been adopted. These recommendations and achievements include:

- Establish a permanent, mayor-appointed, ad hoc Bicycle Advisory Committee.
  - The Fort Worth Pedestrian and Bicycle Advisory Commission was created by ordinance on March 23, 2015. This Commission meets at least quarterly each year and provides recommendations to the City regarding plans, policies, programs and projects to improve travel for non-motorized users.
- Adopt a Complete Streets Policy and Ordinance.
  - Fort Worth adopted a Complete Streets policy on April 25, 2016.
- Include Bike Fort Worth facility recommendations in the Master Thoroughfare Plan.
  - The Fort Worth Master Thoroughfare Plan (MTP), adopted May 3, 2016, is grounded in a Complete Streets philosophy that supports all transportation users and includes an increased emphasis on active transportation.
- Implement a zoning ordinance for bicycle parking.
  - Fort Worth amended the Zoning Ordinance Article for "Off-Street Parking and Loading" to include Bicycle Parking Requirements for change of use and new developments.
- Adopt a safe passing ordinance
  - A 2011 ordinance requires people driving to give at least three feet of passing clearance for vulnerable road users (e.g., people walking and bicycling).
- Attain official designation as a Bicycle Friendly Community through the League of American Bicyclists.
  - In Fall 2016, Fort Worth was recognized as a Bronze-Level Bicycle Friendly Community.

Other goals and recommendations from the Bike Fort Worth Plan include:

- Triple the number of bicycle commuters (0.2 percent to 0.6 percent).
- Decrease the level of bicyclist related crashes by 10 percent.
- Establish a bicycling education program to promote safe bicycling behavior and interaction on the roads between bicyclists and motorists.
- Distribute an updated Bicycle Map and Commuter Guide.
- Ensure bicycle accommodation on all major transit corridors, station areas, and transit hubs.
- Develop a Bicycle and Pedestrian Transportation Planning Program led by a dedicated Bicycle Coordinator staff position and supported by additional staff and resources as needed to help reach program goals.

Walk Fort Worth (2014)

Walk Fort Worth was adopted in October 2014 and is the City's comprehensive pedestrian transportation plan for developing a more pedestrian-friendly environment for those who travel by foot, wheelchair, motorized scooter, or other mobility aid.

Figure X: Walk Fort Worth (2014)

The plan was created for the fundamental purposes of improving pedestrian infrastructure and design standards, identifying the highest priority needs, and crafting policy recommendations to implement the goals of the plan. The two central goals of the plan are:

1. Create a Safe and Accessible Pedestrian Network
2. Improve the Walking Experience for a Healthier Community

The plan recommends a variety of design improvements to achieve an enhanced walking experience. These include increasing the sidewalk width, designing streets for safer speeds, designing highway interchanges for pedestrian safety, and utilizing best practices for intersections, roadway crossing, and pedestrian-scale lighting treatments.

As part of the 2016 Master Thoroughfare Plan, a "zone system" for sidewalks was adopted as well as design standards that increase the sidewalk width. The plan also recommends separating bicycle and pedestrian paths in high volume or high conflict areas.

Other policy recommendations to support the two goals include:

- Adopt a citywide Complete Streets Policy
  - Fort Worth adopted a Complete Streets policy on April 25, 2016.
- Update the policy on Street Connectivity
  - The City updated the subdivision ordinance to require internal roadway connectivity
- Investigate the cause of pedestrian-related crashes at high crash locations and develop solutions
- Continue the use of road right-sizing projects as a way to reduce speeds and increase buffer between sidewalks and travel lanes
- Educate all road users on traffic laws
- Support and expand neighborhood car free events
- Work with neighborhoods to install pedestrian wayfinding signage
- Develop neighborhood walking maps

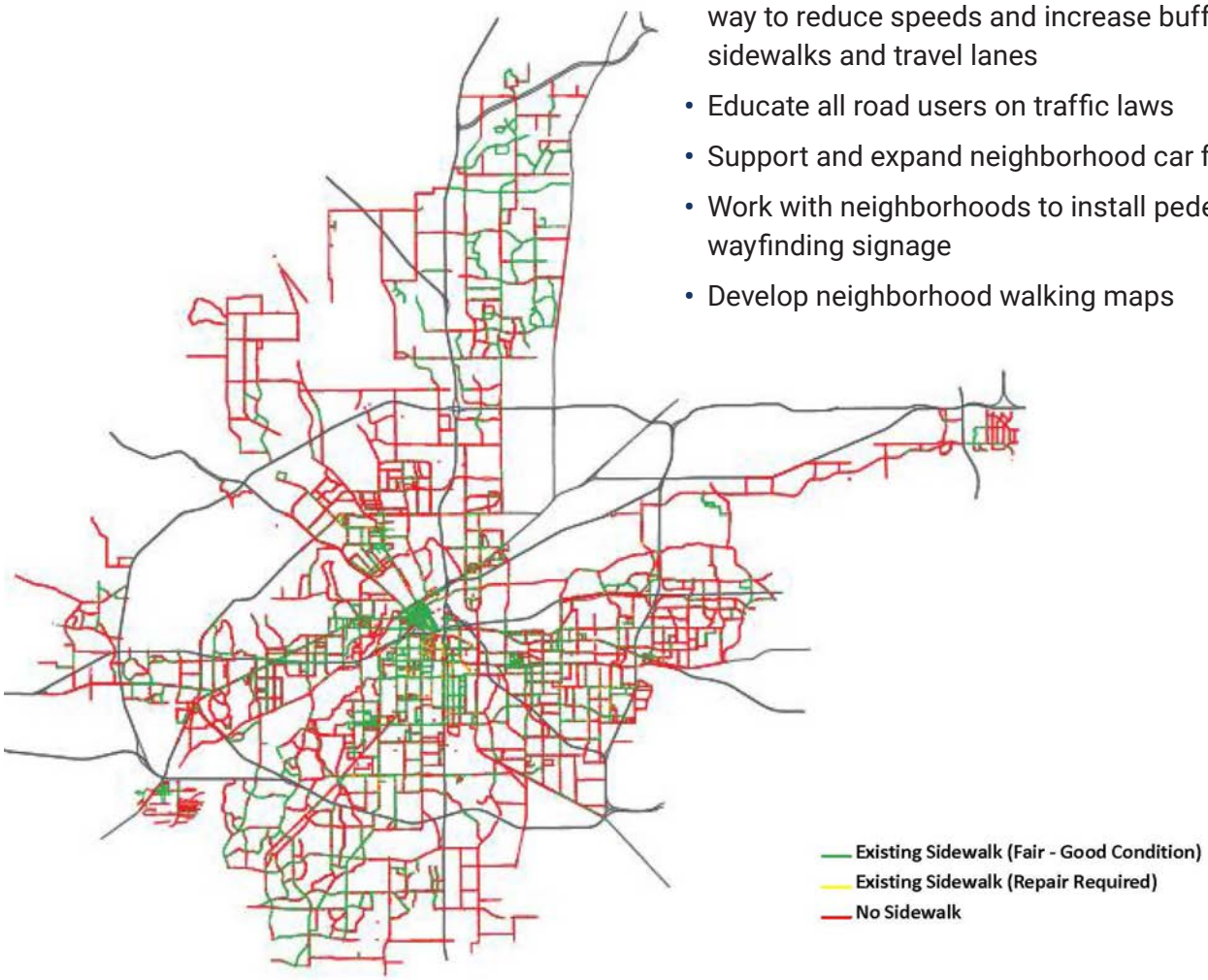


Figure 2: High Priority Corridors (Walk Fort Worth)

The T Transit Master Plan (2015)

In 2015, Trinity Metro (then known as the Fort Worth Transportation Authority, or "the T") updated its 20-year vision and service plan to provide improved transit service to Fort Worth and Tarrant County. The long-term vision proposes comparable service to peer cities in Texas and throughout the U.S., service expansion throughout most of Tarrant County, and premium services in high demand areas. Many of the plan's short-term priorities are tied to bicycle and pedestrian infrastructure and connectivity needs. These include improving transit facilities and amenities such as bike racks, seating, lighting, and paved areas that would benefit active transportation trip options. Another priority of the plan is improving access to transit and first-mile/last-mile connections, which could include a variety of approaches, such as enhanced bicycle and pedestrian connectivity.

Fort Worth Complete Streets Policy (2016)

The Fort Worth Complete Streets Policy was adopted in April 2016 with the goal of guiding everyday decision-making systems to provide a safe, accessible transportation system for all users. The policy applies to all transportation facilities approved by the City and requires that the City utilize design standards based on the latest best practices. Performance measures will be used by the City to measure the success of the Complete Streets Policy over time. These measures include reductions in injuries and fatalities, reduction in transportation gaps, improved emergency services response times, impacts and benefits for traditionally disadvantaged communities, increased usage of alternative transportation modes, reduction in obesity-related illnesses, and economic performance of transportation investments. Some key tasks to be completed include a Complete Streets implementation plan, updated engineering standards, and ongoing staff training.

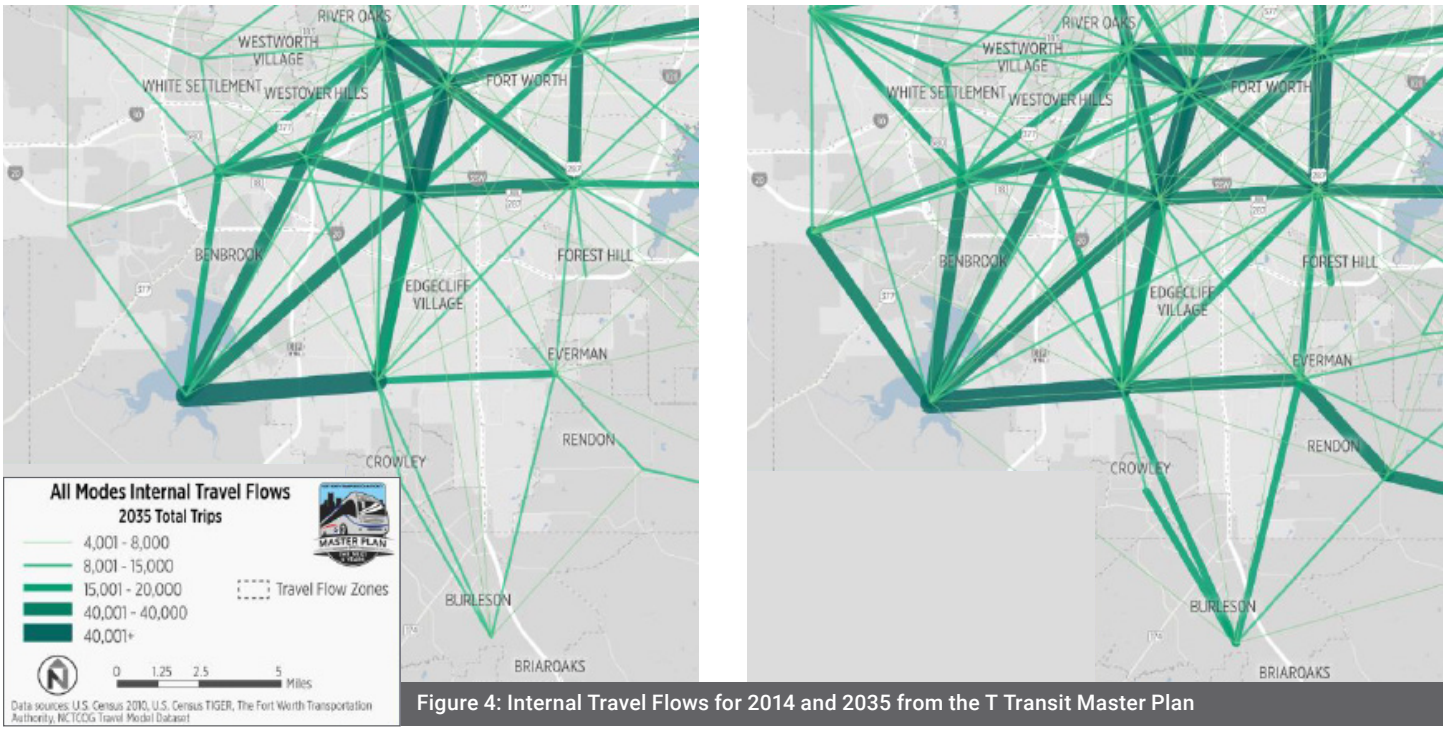


Figure 4: Internal Travel Flows for 2014 and 2035 from the T Transit Master Plan

Fort Worth Master Thoroughfare Plan (2016)

The City's Master Thoroughfare Plan (MTP) update was adopted in May 2016 and complements the Complete Streets Policy's philosophy to support all transportation users with the development of appropriately sized roads that reflect the surrounding land use context of each transportation facility. The MTP categorizes the city's thoroughfares by traffic function, multi-modal activity, land use context, and anticipated traffic volume demand using Street Type designations and Roadway Capacity need maps. The plan also recognizes roadways with existing built infrastructure and limited ability to expand right-of-way due to surrounding development as "Established Thoroughfares." Established Thoroughfares have no adopted cross-section or specific right-of-way requirement, and guidance is provided for preferred street design width ranges. The MTP allows for compatibility with other multimodal plans and resources, using the Bike Fort Worth "Bicycle Priority Corridors", on-street trail connections, Special Transit Corridors, and other transportation facility designations to guide the ultimate determination of thoroughfare right-of-way and multimodal cross section design.

All thoroughfares with an adopted cross-section in the MTP include bicycle infrastructure, whether on-street or off-street. The list of bicycle treatments includes shared lanes, conventional bike lanes, buffered (or protected) bike lanes, and bicycle facilities in combination with parking or transit. Bicycle design elements are determined by land use, vehicle speeds, and volumes to ensure context sensitivity. The MTP also designates a flexible width parkway portion of the right-of-way which may include a variety of desirable active transportation elements such as traditional sidewalks, multi-use sidepaths, or separated bike lanes, depending on the Street Type.

Table 2 summarizes the desirable active transportation street design elements and widths for Established Thoroughfares depending on context. They take into account the bicycle facility "upgrades" identified in the MTP for the Bicycle Priority Corridors from the 2010 Bicycle Plan.

Table 2. Desirable active transportation street design elements and widths for Established Thoroughfares depending on context

Street Design Element	Minimum Width	Maximum Width	Preferred Width	Street Context Considerations
Sidewalks	5'	6'	6'	The minimum pedestrian zone is 6 feet in most cases; 5' minimum where adjacent to a sidewalk-level separated bike lane; No maximum for Activity and Commerce/Mixed-Use Streets
Conventional Bike Lanes	5'	6'	6'	Not applicable to System Links
Buffered Bike Lanes	7-8'	8-9'	8-9'	Applicable when adjacent to parking on Activity and Commerce/Mixed-Use Streets
Raised Separated Bike Lanes	6'	6'	6'	Only applicable to Neighborhood Connectors and System Links
Off-Street Shared-Use Sidepath	8'	12'	10'	Applicable to Neighborhood Connectors, Commercial Connectors, and System Links

Preferred sidewalk width is an increase from previous City sidewalk design standards which required a minimum 4' sidewalk with a landscape buffer or 5' sidewalk if located behind the back-of-curb.

Urban Villages Plan (2007)

In 2002, the Mayor-appointed Commercial Corridors Task Force, with guidance from neighborhood stakeholders and community leaders, identified urban villages along seven high-priority commercial corridors. The villages were identified as areas that are ripe for development and have investment potential despite social and economic redevelopment challenges. These areas are characterized as urbanized places with a concentration of jobs, housing, commercial uses, public spaces, public transportation and pedestrian activity. Since the original plan, the City has implemented a variety of revitalization strategies in 16 urban villages, including capital improvements, mixed-use zoning, and economic development incentives. The mixed-use zoning and urban design strategies often include elements such as walkable streets with wider sidewalks; taller buildings with minimal setbacks and transparent storefronts; and on-street parking and street trees to help separate pedestrians from traffic, all of which support a pedestrian-friendly environment.

The following summarizes the active transportation recommendations from each Urban Village plan:

Berry/University

- Support a future commuter rail station to serve the TCU area near Berry Street and Cleburne Road, with transit-oriented development and multi-modal connections
- Build or widen sidewalks that lead from adjacent neighborhoods to the urban village or consider using some of the existing alleyways to make pedestrian connections to the village
- Include a dedicated bike lane(s) in the new 'people scale' street between the transit station and Merida

Bluebonnet Circle

- Restripe University Drive from Benbrook Boulevard to Butler Road to have on-street parking, bicycle lanes, and two through lanes

Evans & Rosedale

- Establish major pedestrian linkages along Terrell Avenue and East Rosedale Avenue with sidewalk and streetscape improvements
- Add bicycle lanes and clearly marked intersections for pedestrian crossings (completed)
- Improve park interconnectivity between Hillside and Glenwood Parks

Hemphill/Berry

- Streetscape and sidewalk improvements near the Hemphill Street & Berry Street intersection to create a pedestrian-friendly environment

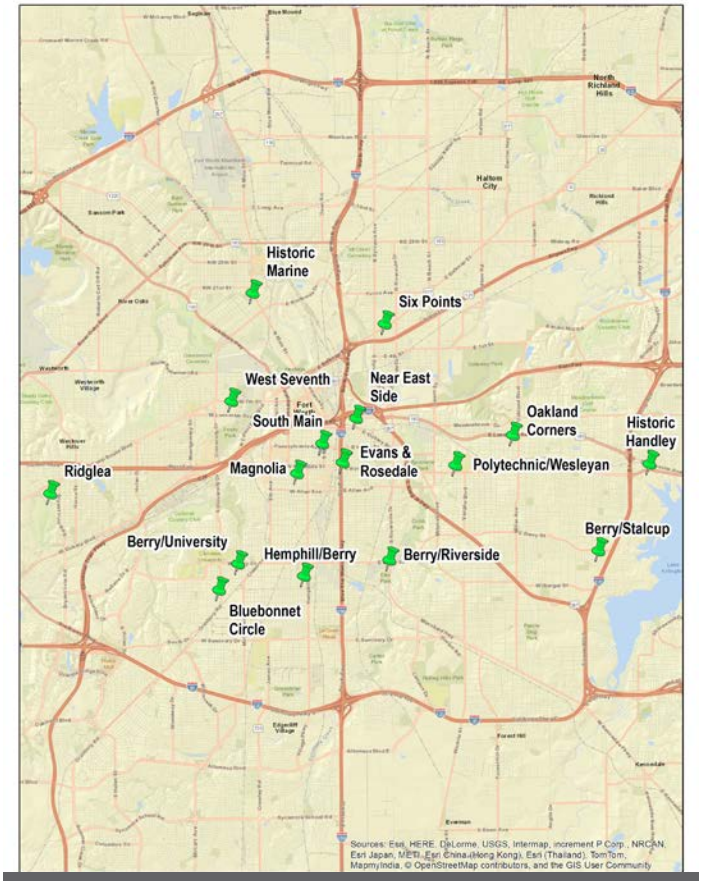


Figure 6: Fort Worth Urban Villages

Historic Handley

- No master plan

Historic Marine

- Create an urban village pedestrian loop with trails and walking paths, connecting the Trinity River, Marine Park, and Circle Park
- Create pedestrian alleyway improvements

Magnolia

- See Near Southside Development Standards and Guidelines—includes a street master plan with recommended street design standards, pedestrian paths and bike lanes

Near East Side

- Extend and improve sidewalks for continuous and unobstructed movement
- Create wider sidewalks along East Lancaster Avenue by increasing parkway width

Oakland Corners

- Extend and improve sidewalks for continuous and unobstructed movement
- Improve pedestrian safety at crossings with additional crosswalks, signage, and flashing lights

Polytechnic/Wesleyan

- Improve pedestrian connectivity along East Rosedale Street and Nashville Avenue
- Create bicycle and pedestrian pathways

Ridglea

- Camp Bowie Boulevard should be a multi-modal street aimed at improving transit lines and making bicycling an option
- Reconstruct Fairfield Avenue as a pedestrian street.

Riverside/Berry

- Extend the Trinity Trail system along the creek and connect new development to the greenbelt
- Widen Sycamore Creek bridge with wider sidewalks to encourage pedestrian activity along East Berry Street and into Cobb Park
- Construct a paved pedestrian/bike path along the eastern edge of the urban village near Sycamore Creek, with a connection to Cobb Park
- Extend sidewalks along East Berry Street and along Glen Gardens from Edward J. Briscoe Elementary School to Cobb Park

Six Points

- Village-wide sidewalk and crosswalk improvements, prioritizing Race Street, Belknap Street, and Sylvania Street
- Race Street streetscape plan (2015) recommends parking-protected bike lanes and sidewalk improvements

South Main

- Village-wide sidewalk and crosswalk improvements
- Recently completed infrastructure improvements include on-street bicycle lanes, widened sidewalks, and pedestrian-scaled streetscaping (between Vickery Boulevard and Magnolia Avenue)

Stalcup/Berry

- Create a linear park along Wildcat Branch Creek with a shared-use trail
- Create pedestrian-friendly streets with wide sidewalks, street furnishings, and pedestrian lighting

West Seventh

- No master plan

Downtown Urban Design Standards and Guidelines (2002/2016)

The Downtown Urban Design Standards and Guidelines (DUDSG) were developed in 2001 and updated in 2016 in partnership with Downtown Fort Worth Inc. (DFWI) and community stakeholders to improve and protect the appearance, value, and function of downtown properties. The intent of the standards and guidelines is to encourage the highest level of design quality, with a development review process that is meant to be predictable, flexible, and to facilitate the timely approval of conforming projects. The guidelines influence the design of pedestrian zones through streetscape and walkway standards, which vary among the four Downtown character zones. The pedestrian zone standards are intended to increase foot traffic and transform the use of sidewalks and streets to create a linear park system. These include guidelines for the application of street trees, landscaping, pedestrian lights, sidewalks, and bicycle parking.

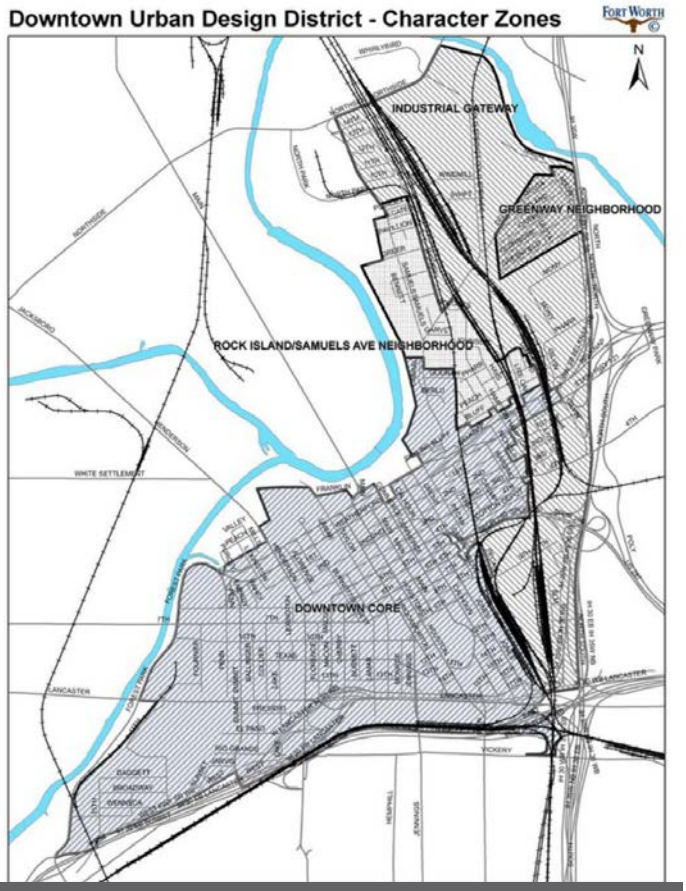


Figure 7: Character Zones from the Downtown Urban Design Standards

Downtown Access and Circulation Study (DACS) (2013)

The Downtown Access and Circulation Study has been reviewed and updated every ten years since the initial plan in 1993 and provides the framework to improve mobility both into and within Downtown Fort Worth for pedestrians, bicyclists, transit users, and motorists. The study includes a number of improvement concepts and recommendations based on the principles that Downtown should "be the regional multimodal transportation hub for Fort Worth and Tarrant County" and "fully integrate pedestrian, transit, automobiles, and bicycle infrastructure and networks within the Downtown core." These recommendations include improved one-way/two-way circulation, improved crossings and sidewalk conditions for pedestrian access, and redesigning existing streets to be more

multimodal. Streets recommended for multimodal redesign include Parkview Drive, West 7th Street, and Commerce Street. Some projects have been completed including the improvement of circulation around City Hall.

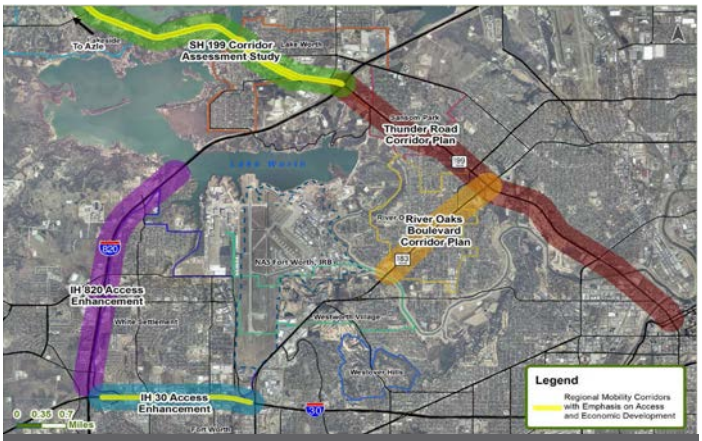


Figure 8: Regional Mobility Corridors (PLMC)

Planning Livable Military Communities Regional Vision (2013)

Adopted in 2013, the Planning Livable Military Communities Regional Vision is a coordinated, inter-jurisdictional planning effort to support and implement regional transportation, housing, and economic development strategies for the communities surrounding the Naval Air Station Fort Worth Joint Reserve Base. This planning area includes western portions of the City of Fort Worth. Improvement of active transportation facilities was represented in the plan's guiding themes, including "Increase transportation choice with the development of transportation options, including bicycle and pedestrian facilities and future transit options." The plan also identified regional corridors that are key for economic development and mobility of this area. These include the SH 183 and SH 199 corridors, both of which provide regional linkages between Fort Worth and surrounding communities.

State Highway 183 Corridor Master Plan (2018)

Recommendations for the SH 183 corridor include a dedicated bicycle and pedestrian shared use path, sidewalk, and strategic placement of amenities in the medians separating the paths from automobile traffic. The NCTCOG Regional Veloweb identifies a future shared use path along the east side of SH 183, from Sherry Lane south to IH 30, also known as the Bomber Spur Trail. This master plan recommends that SH 183 use the northwest side of the corridor right-of-way, and a linear park or greenway with a 14-foot-wide shared-use path (the planned Bomber Spur Trail) be created in the excess right-of-way on the southeast side.

State Highway 199 Corridor Master Plan (2017)

The SH 199 plan recognizes that pedestrian access is a major challenge along this corridor. One of its main recommendations is to convert the existing rural cross-section with open drainage ditches to an urban roadway design with curb and gutter with wide sidewalks. Because of the 45 miles per hour design speed, it is recommended that off-street accommodations for both pedestrians and bicyclists be included in the design, including minimum 10-foot enhanced sidewalks on one side of the corridor. A wider facility could accommodate a separated bike lane, and the Fort Worth Pedestrian and Bicycle Advisory Commission provided a recommendation that more pedestrian and bicycle amenities be included in the final plan.

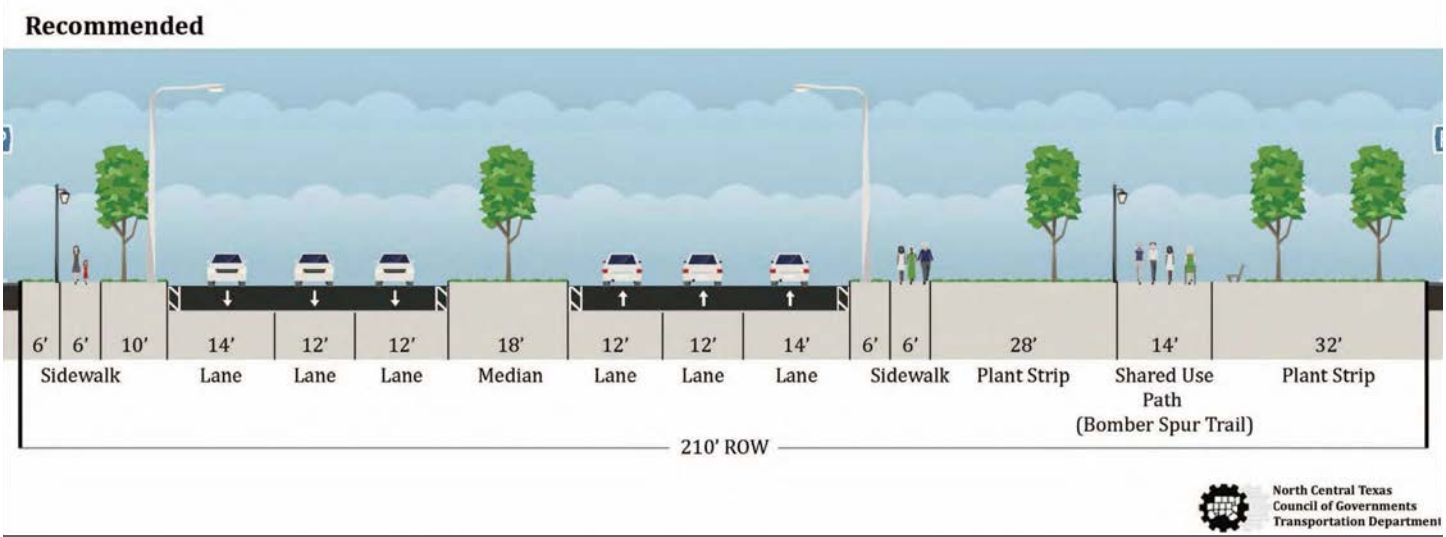


Figure 9: Recommended Cross Section Design

Near Southside Development Standards and Guidelines (2016)

The City, along with Fort Worth South, Inc., recognized the importance of urban design in realizing revitalization goals for the Near Southside area. The Development Standards provide regulations and guidelines for land uses, building design, streets, and public spaces. Street types and cross sections are regulated with context-sensitive street classifications. Contexts are identified as Mixed-Use Streets, Main Streets, or Commercial Streets, and classifications by capacity are Local, Collector, or Arterials Streets. The intent for active transportation circulation is that all streets and sidewalks should be designed to promote pedestrian activity and comfort, and designated road space should be provided for bicyclists. Main Street design standards encourage the greatest space for active transportation, with 10-foot minimum pedestrian paths and 5-foot minimum bike lanes. Mixed-Use and Commercial streets propose 5-foot minimum pedestrian paths and bike lanes, where feasible. Main Street designations include portions of Vickery, Rosedale, Magnolia, Park Place, and Evans. Numerous streets are recommended for dedicated, State Highway 183 Corridor Master Plan (2018)bike lanes on the regulating plan map.

Traffic Engineering Design Standards "Brown Book" (1987, update currently underway)

The Fort Worth Traffic Engineering Design Standards include standards and criteria intended to ensure consistent traffic and transportation design practices in new development or the redevelopment of land within the city limits and extra-territorial jurisdiction. The City utilizes these guidelines and policies when reviewing development proposals and designs. Design guidance includes street widths, placement of sidewalks, pattern of streets and intersection design for all thoroughfares and local streets. This manual includes a Sidewalk Policy section, but no formal guidance for design of on-street bikeways or off-street shared-use paths.

Some of the policies that guide the implementation of sidewalks include:

- Design of sidewalks should be a minimum four-foot wide concrete sidewalk located at least four-feet behind the back of curb, or a five-foot wide concrete walkway located immediately behind the back-of-curb. (The most recent MTP updated this requirement.)

- In newly developing areas, sidewalks will not be required on local residential streets, residential collector streets, or on local industrial streets within industrial parks.
- Sidewalks are required along all minor arterials, expressway arterials, and principal arterials.
- Sidewalks shall be required in redeveloping areas under the same conditions as newly developing areas.
- In developed areas with no existing sidewalks, property owners can request the installation of sidewalks by petitioning the City.

These design standards were developed based on official adopted policies at that time, as well as then current nationally recognized engineering publications. This manual is currently being updated to incorporate City policies and national best practices..

Trinity River Vision (2009)

The 2009 Trinity River Vision Master Plan is an update of previous trails planning for the City of Fort Worth, and was adopted by the Tarrant Regional Water District (TRWD), Streams and Valleys, Inc., the City of Fort Worth, and Tarrant County. A major emphasis of this plan was a Neighborhood and Recreation Enhancement Plan (NREP) which is focused on increased access to neighborhoods, additional safety improvements, water and environmental quality, increased open space along the Trinity River greenbelt, and extensions of the greenbelt. The plan also recommends updated Design Guidelines and Standards to standardize trail width, improved trailheads, and orientation of development to incorporate trail access into site design. Design recommendations include:

- All new trails or reconstructed trails should be at least 10 feet wide
- An updated recommendation for bridge crossings that accommodate pedestrian/bicycle access with a 10-foot path
- Etiquette, right-of-way, wayfinding, and educational signage
- Trail use separation through striping or multiple surfaces

The plan recommends trail extensions and connectivity improvements for six segments of the Trinity River with a focus on linkages to neighborhoods, downtown, adjoining cities, and other special districts.

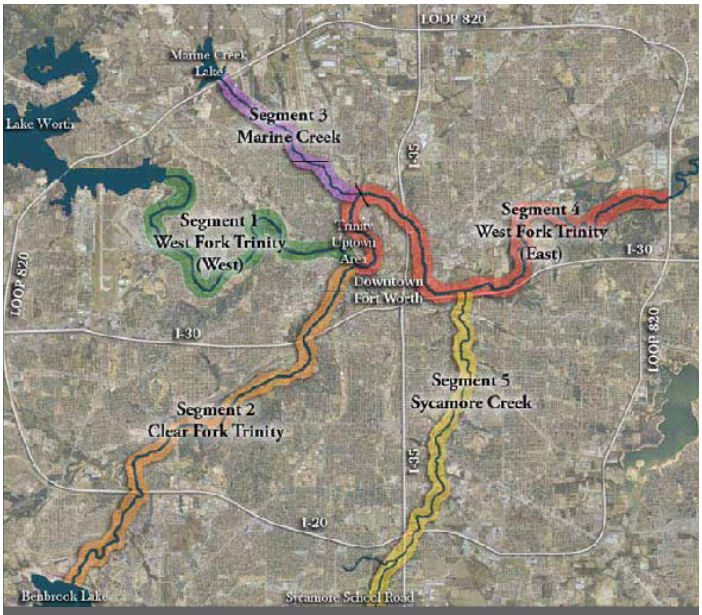


Figure 10: Trinity River Vision Plan Segments

Parks and Open Space Master Plan (2015)

The 2015 Parks and Open Space Master Plan takes a comprehensive look at the city's park, recreation and open space system to develop goals for expanding recreational opportunities and preserve the city's natural, historical and cultural resources. Through the planning process, it was determined that hike and bike trails are a high priority throughout the city and preparation of a citywide trails master plan should be given consideration.

Major plan implementation items that address active transportation include:

- Park improvements at Oakmont Linear Park and Hallmark Park to include hike and bike trails with internal walking trails
- Extending the Trinity Trails system where it currently terminates at Meandering Road to Arrow S. Park at Lake Worth and extending the trail around the perimeter of Lake Worth as funding is available
- Extension of the Trinity Trails from Quanah Parker Park to River Legacy Park in Arlington
- Quanah Parker Park to Richland Hills TRE Station trail connection
    - This is currently complete from Quanah Parker Park to Jack Newell Boulevard
- Oakland Boulevard bike lanes and sidewalk infill
- West Creek Drive Trail and bike lane improvements (complete)

NCTCOG 2040 Regional Veloweb (2016)

The North Central Texas Council of Governments (NCTCOG) maintains and promotes a plan for a connected regional network of on-street bikeways, community shared use paths, and regionally-significant shared use paths. This planned network is based on adopted bicycle master plans and trail master plans within the region, and the regionally-significant shared use paths make up what is known as the Regional Veloweb. The Veloweb network is designed for multi-use trip purposes by bicyclists, pedestrians, and other non-motorized forms of transportation, and is part of the long-term metropolitan transportation plan for the Dallas-Fort Worth area. Within the City of Fort Worth, many of the existing Veloweb connections are along existing Trinity River Trail segments, and planned connections include future trail extensions and shared use paths adjacent to roadways. The Fort Worth Active Transportation Plan provides guidance for future updates to the Regional Veloweb and prioritization of funded bicycle and pedestrian corridors.

Panther Island Development Standards (2016)

The Panther Island Development Standards and Guidelines were established to promote the development of a vibrant urban waterfront district as envisioned in the Panther Island Plan. Development principles that support active transportation include promoting a pedestrian-orientated urban form and maximizing multimodal connectivity and access. The plan includes street standards with recommended bicycle and pedestrian facilities. Most street types are recommended to have minimum 8-foot sidewalks, with 12-foot to 14-foot sidewalks along White Settlement Road and North Main Street. Bicycle facilities are also recommended on White Settlement Road and North Main Street. Other pedestrian or shared-use pathways are recommended along waterways with 12-foot to 8-foot widths.

Trinity Lakes Development Standards (2015)

The Trinity Lakes Development Code was enacted to implement objectives established in the Fort Worth 2012 Comprehensive Plan. The purpose of Trinity Lakes is to encourage economic development within East Fort Worth with a pedestrian-oriented mix of uses and convenient access between area neighborhoods and activity centers. Two street designations are established to designate modal priorities and building orientation. Type 'A' Streets are intended to be the primary pedestrian streets with buildings held to the highest standard of pedestrian-oriented design. Main Street A streets should have minimum 16-foot pedestrian easements and recommends on-street shared bike lanes. Neighborhood Type 'A' streets should have minimum 10-foot pedestrian easements. No street type standards recommend on-street striped or separated bike facilities.

Strategic Stormwater Program Master Plan (2018)

The City's Stormwater Management Program Master Plan outlines strategies, priorities, and policies to best meet the needs of the City over a period of 10 years. The primary topic areas that the plan addresses include maintaining the system, mitigating hazards, warning residents, and overseeing development. As trails and open space facilities often utilize floodplain areas, it may be possible integrate active transportation improvements along with stormwater mitigation and flood risk reduction projects.

Fort Worth Economic Development Strategic Plan (2017)

The Fort Worth Economic Development Strategic Plan is the City's first plan targeted at guiding economic development activities, with the goal of increasing the City's regional and global economic competitiveness. One of the major growth trends recognized in the plan is that while the city's residential growth has been strong in relation to the region, employment growth has been lagging. The city's population is projected to grow by 145 percent by 2040 and a competitive edge is needed to maintain a healthy jobs to housing balance.

Some of the economic opportunities and strategies include increasing development and business attraction opportunities in the city's urban core, maximizing the development potential of other major districts, and strategically promoting Fort Worth's transportation infrastructure advantages. The plan also recognizes the relationship between transportation investments and placemaking to attract certain business sectors. One of the principles for creating "innovation districts" that attract creative businesses is connecting city and region through multiple transportation modes. The plan also recommends enhancing the transportation connections (including pedestrian and bike modes) between downtown and surrounding urban districts, which encourages high-density, mixed-use corridor development.

Target Areas Report

As part of the economic development opportunity analysis, the City identified six target areas for further analysis based on existing assets and development potential. Strategic economic development strategies were identified for these areas that can support the overall strategic plan, as well as guide initiatives in similar neighborhoods and corridors. The six target areas include: Altamesa & McCart, West Camp Bowie, East Lancaster, Evans & Rosedale, Near Northside, and Stop Six. Active transportation opportunities identified in the report include improving connectivity of the various areas to existing trails, the river, and surrounding activity centers. During the public participation process, participants were polled on their level of support for various improvement strategies, and the need for "better sidewalks and bike lanes" was identified as having strong support across the target areas.

Figure 11: Proposed East Lancaster Ave Cross Section

East Lancaster Avenue Pedestrian Improvements/Complete Streets Project (2016)

In 2016, a plan to redesign East Lancaster Avenue was developed to implement a complete streets concept that accommodates numerous modes of travel. This plan includes (in each direction):

- Two 11-foot general purpose travel lanes
- Dedicated 12-foot bus lane
- Separated 7-foot bicycle facility
- 10-foot pedestrian facility
- 16-foot landscaped median
- Landscaped traffic separators

This redesign is intended to improve safety throughout the neighborhood, reduce crashes, improve access to bus facilities, and better connect disadvantaged residents to destinations. The project is also intended to support renewed economic activity of three Urban Villages along the corridor. The East Lancaster Complete Streets Project application is requesting $25 million from the federal TIGER Grant Program, which would fund a portion of the total estimated project cost of $107 million.

Fort Worth Form-Based Code Districts (2012-2017)

Throughout the City of Fort Worth, there are various design districts in which design is regulated through standards and guidelines. Form-based codes have been developed in these districts to replace traditional zoning regulations with standards that address the form of buildings and design elements needed to guide future growth. These districts include the Camp Bowie District, Berry/University, and the Fort Worth Stockyards. Each of these codes accommodates a variety of development form, uses, and relationship to streets through the identification of character areas or subdistricts. Each code also addresses streetscape design and circulation to balance pedestrian and vehicular needs that result in safe, high-quality pedestrian environments. Key pedestrian corridors identified in these codes include:

- Camp Bowie District: Pedestrian-oriented design is intended along all street types designated as a Neighborhood Street or Boulevard, including Camp Bowie Boulevard.
- Berry/University: 10-foot paved pedestrian zones are required along Berry Street, University Drive, and Cleburne Road.
- Fort Worth Stockyards: Pedestrian zones range from 6 feet to 10 feet along all street types, with the greatest emphasis on pedestrian accommodation along Stockyards Boulevard, Main Street, and Exchange Avenue. Street design options that include separated bike lanes are also provided.

Age-Friendly Fort Worth (2016)

In 2016, the Fort Worth City Council adopted a plan that will guide Fort Worth as it adapts to accommodate an aging population. The planning process began in 2014 with Fort Worth joining the AARP Network of

Age-Friendly Communities, assessing the needs of the community's older residents and establishing implementation actions to address those needs. The program measures the city's livability in seven different categories: neighborhood, opportunity, health, transportation, engagement, housing, and environment. The transportation component of the plan emphasizes that the city's transportation system should be "accessible, affordable, convenient, wide-reaching and easy to use" for older adults and those with disabilities. Recommendations to achieve this goal include ensuring all modes of transportation are safe, affordable and accessible. Also, sidewalks or trails should be provided to and within parks with safety and accessibility in mind. Expanding the multi-use trail system for bicycles and pedestrians is also listed as an action item to improve access to outdoor spaces and buildings.

Park Dedication Policy (2009)

Fort Worth's Neighborhood and Community Park Dedication Policy is intended to ensure the provision of "local, close to home" park facilities. New residential development or an increase in density by redevelopment in existing neighborhoods creates the need for additional park and recreation facilities. One of the primary guidelines of the policy is that there should be a minimum of one Neighborhood Park within each designated "Neighborhood Unit" as defined by the Park, Recreation and Open Space Master Plan.

Fort Worth requires residential developers to dedicate subdivision land and/or fees to implement park improvements and meet recreational needs.

Comprehensive Plan (2017)

The Comprehensive Plan is the City's official guide for making decisions about growth and development, and is updated annually. To help the City realize its vision, five major themes emerged: promoting economic growth, meeting the needs of an expanding population, revitalizing the central city, developing multiple growth centers, and celebrating the Trinity River. Strategies to implement these themes related to active transportation include:

- Encourage development that reduces daily vehicle miles traveled for commuters through the creation of urban villages, transit-oriented development, and mixed-use growth centers
- Develop compact, pedestrian-oriented mixed-use growth centers
- Develop a rail transit system that connects the growth centers and urban villages and promotes transit-oriented development
- Link growth centers with major thoroughfares, public transportation, trails and linear parks
- Pursue implementation of the Trinity River Vision Master Plan

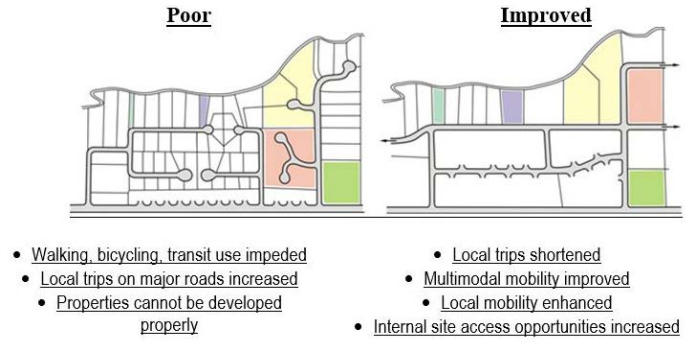


Figure 12: Comparison of Poor and Improved Site Design for Walking and Bicycling, Comprehensive Plan (2017)

Trinity River Strategic Master Plan (currently in progress)

Led by Streams & Valleys, the Trinity River Strategic Master Plan will articulate a vision and implementation strategy for making the Trinity River a world-class recreational and natural amenity and an economic development catalyst for the Fort Worth region. The planning process has identified and scored a number of priority implementation items, including trail connectivity, open space enhancements, park programming, and wetland habitat preservation. A joint survey with the Active Transportation Plan gathered public input on issues, challenges, and

opportunities to further improve the use of open space and multi-use pathways along the river.

Trails Gap Analysis (currently in progress)

The Fort Worth Parks Department is currently evaluating and prioritizing gaps in the trail system. This includes preparing alignment concepts, identifying land ownership, preparing preliminary cost estimates, and providing recommended prioritization.

Access Management and Collector Street Network Planning Policies/ Update Amending Chapter 31 of the Subdivision Ordinance (2018)

The purpose of the 2018 Subdivision Ordinance text amendment regarding collector network planning is to ensure the establishment of a network of collector streets as necessary to support the thoroughfare network, advance the complete streets vision, and enhance connectivity and mobility.

The Collector Street Network Planning polices effect active transportation by promoting street connectivity, providing continuous connections

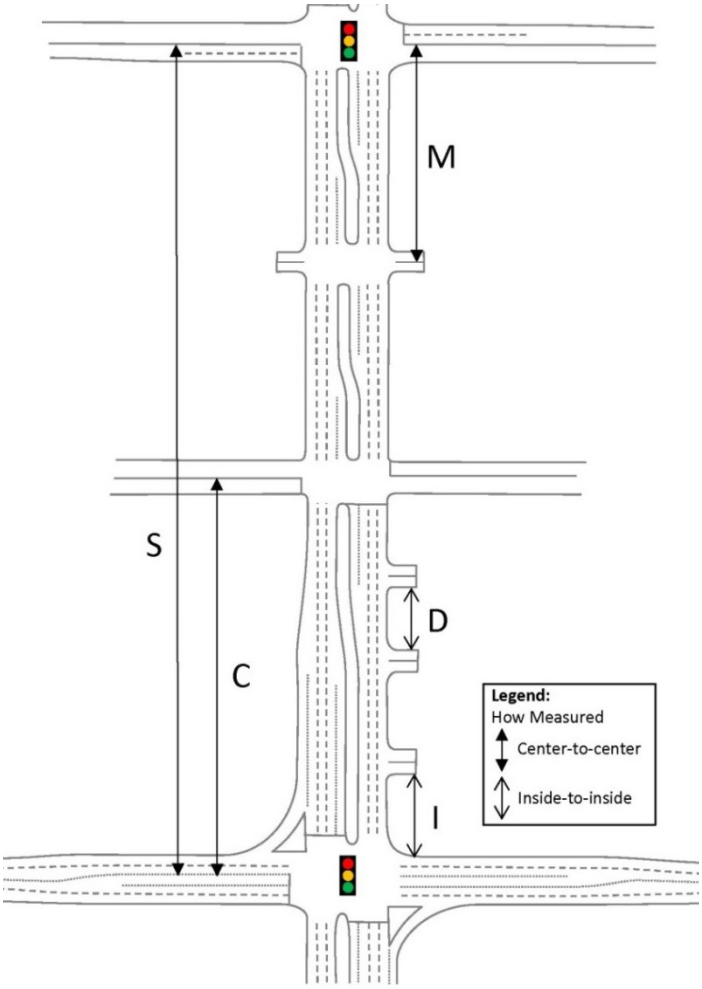


Figure 13: Street Spacing Distance Schemati, Access Management and Collector Street Network Planning Update to the Subdivision Ordinance (2018)c

Street Type	*MTP Target Speed (mph)†*	*MTP Range of Through Lanes*	**D** Driveway – Driveway Spacing (ft)	**I** Intersection – Driveway Spacing (ft)	**S** Signalized Intersection Spacing (ft)	**C** Cross Street Spacing (ft)	**M** Median Opening Spacing (ft)
System Link	*35 to 45*	*4 to 6*	300	300	1,320	1,000-1,320*	500 - 800
Commercial Connector	*30 to 35*	*2 to 6*	250	250	1,000	660-1,000*	500 - 800
Neighborhood Connector	*30 to 35*	*2 to 6*	200	250	1,000	660-1,000*	500 - 800
Commerce / Mixed-Use St	*25*	*2 to 4*	150	150	600-1,320*	300-660*	NA
Activity Street	*25*	*2 to 4*	100**	100**	400-800*	300-660*	NA***
Collector Streets****	*25 to 30*	*2*	100‡	100	NA	250	NA
Local Streets****	*25*	*2*	75‡	75	NA	250	NA

† Target speed is defined in the MTP as the recommended design speed
* Refer to guidelines for a discussion regarding allowable minimums and desirable maximums
‡ This does not apply to residential driveways
** New driveways on Activity Streets are only allowed if there is not access from a lower class roadway
*** Median treatments and openings for Activity Streets must be examined on a project- and context-specific basis
**** Collector/Local Streets: Values shown are for guidance only; closer spacing may be permitted at the discretion of the City Traffic Engineer

Table 1: Street Spacing Distances by Street Type, Access Management and Collector Street Network Planning Update to the Subdivision Ordinance (2018)

between thoroughfares, connecting adjacent neighborhoods, facilitating the dispersion of traffic, and promoting opportunities for bicycle and walking by providing the critical connections throughout the networks and bridge the gap between local streets and the thoroughfares.

The design of these collectors must strongly encourage speeds of 25 mph or less and provide visual cues to drivers that the street is not intended for long trips by using design techniques such as curvilinear street, neighborhood entry features, and traffic calming measures. The subdivision layout can be properly planned to achieve the desired balance between speeds and traffic flows.

Collectors must include pedestrian facilities both sides and should be connecting link in the bicycle network.

Access management is the coordinated planning, regulation, and design of access to and from roadways, with the goal of improving the safety and operation of the city's street network. An effective access management program can reduce crashes, increase roadway capacity, and reduce travel time delay. The proposed Access Management policy includes requirements for driveway, intersection, street, and median-opening spacings, auxiliary turn lanes, and joint- and cross-access.

The street spacing distances (C) shown in Figure 13 indicate the minimum allowable street spacing and a desirable maximum for each street type. The minimum spacing is to promote the safe and efficient movement of traffic on the different street types, while the desirable maximums are to promote appropriately dense street grids which provide access and promote pedestrian and bicycle connectivity

Unified access and circulation plans are prepared for all development sites and the number of connections mist be the minimum necessary to provide reasonable and adequate access. Shared access points should be provided between adjoining parcels and cross-access driveways must be provided.

Planning Efforts and Guiding Documents Summary

Table 2. Matrix indicating whether each plan listed addresses policies, programs, or recommends projects.

Previous Planning Efforts and Guiding Documents	Policies Sets policy direction that influences active transportation planning or implementation decisions	Programs Establishes or recommends active transportation programs	Projects Recommends active transportation or transit projects to be integrated into the ATP network
Bike Fort Worth	✓	✓	✓
Walk Fort Worth	✓	✓	✓
T Transit Master Plan	✓		✓
Fort Worth Complete Streets Policy	✓		
Fort Worth Master Thoroughfare Plan	✓		✓
Urban Villages Plan	✓		✓
Downtown Urban Design Standards and Guidelines	✓		
Downtown Access and Circulation Study	✓		
Planning Livable Military Communities Regional Vision	✓		✓
Near Southside Development Standards and Guidelines	✓		✓
Traffic Engineering Design Standards	✓		
Trinity River Vision	✓		✓
Parks and Open Space Master Plan	✓		✓
NCTCOG 2040 Regional Veloweb			✓
Panther Island Development Standards	✓		
Trinity Lakes Development Standards	✓		
Strategic Stormwater Program Master Plan	✓		
Fort Worth Economic Development Strategic Plan	✓		
East Lancaster Avenue Pedestrian Improvements/Complete Streets Project			✓
Berry/University Form Based Code	✓		✓
Age-Friendly Fort Worth	✓	✓	
Park Dedication Policy	✓		
Comprehensive Plan	✓		
Trinity River Strategic Master Plan	✓		✓
Trails Gap Analysis			✓
Access Management & Collector Street Network Planning Policies	✓		

3

EXISTING CONDITIONS MAPS

Part III: Existing Conditions Maps

A key part of the existing conditions review is the spatial analysis of data in Fort Worth related to commuting patterns, existing infrastructure, crashes, economic and demographic patterns, and factors that are likely to contribute to higher demand for sidewalks, trails, and bicycle facilities. The following pages contain maps of existing conditions and the latent demand analysis.

Commuting Data

The 2016 American Community Survey indicates that 0.1 percent of residents commute by bicycle citywide, while 1.2 percent walk, 1.4 percent use transit, and 90.5 percent use a motor vehicle. The combined rate of walking and bicycling to work in Fort Worth ranges from less than 1 percent in places where population and employment is less dense to over 20 percent in the Upper West Side and Sunset Terrace neighborhoods, and near Texas Christian University. Walking and bicycle commuting is between 9 and 20 percent in Downtown and the Near South Side. Other high walking and bike commuting locations include Centreport, Six Points, near Historic Marine, and Ephriham Avenue. See the map in Figure 1.

Figure 2 shows commuting by transit in Fort Worth, also from the 2016 American Community Survey. The Near East Side, Polytechnic/Wesleyan, John T White Road east of I-820 have transit ridership rates over 11 percent. Berry/Stalcup, I-35W and Will Rogers Boulevard, James Avenue and Hemphill Street north of California Parkway South have rates exceeding 6 percent. Neighborhoods along Camp Bowie Boulevard to the west have transit ridership rates exceeding 3 percent. These are areas where accessibility and connected sidewalks and on-street bicycle facilities will help connect people to bus stops and potentially increase the area effectively served by existing transit routes.

Bicycle and Pedestrian Mode Share

Percent of residents in Census Block Groups
Commuting to Work by Bicycle or on Foot

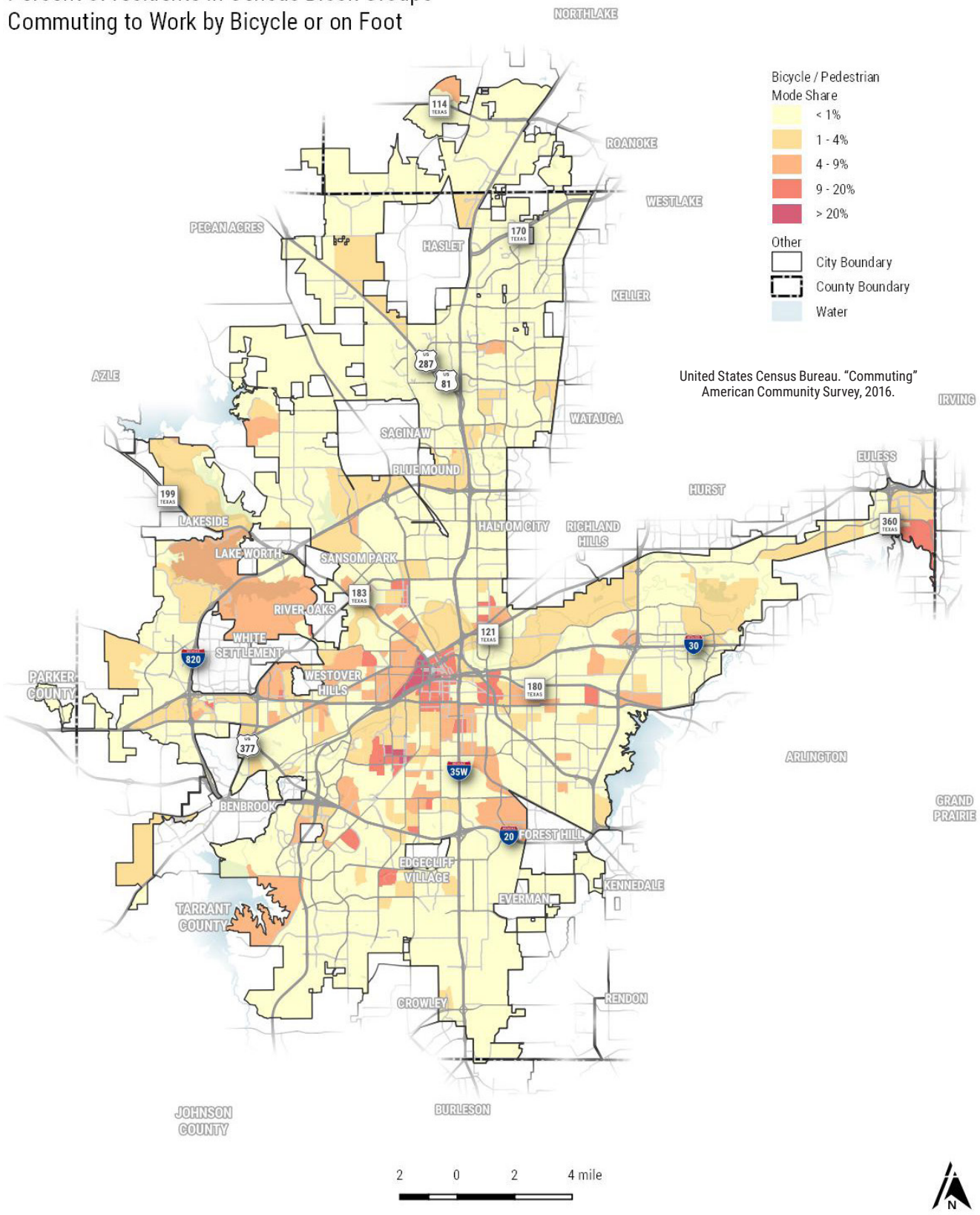


Figure 1. Share of bicycle and pedestrian commute trips across the city. Map reflects current conditions and does not address areas of future growth.

Transit Mode Share

Percent of residents in Census Block Groups Commuting to Work by Transit

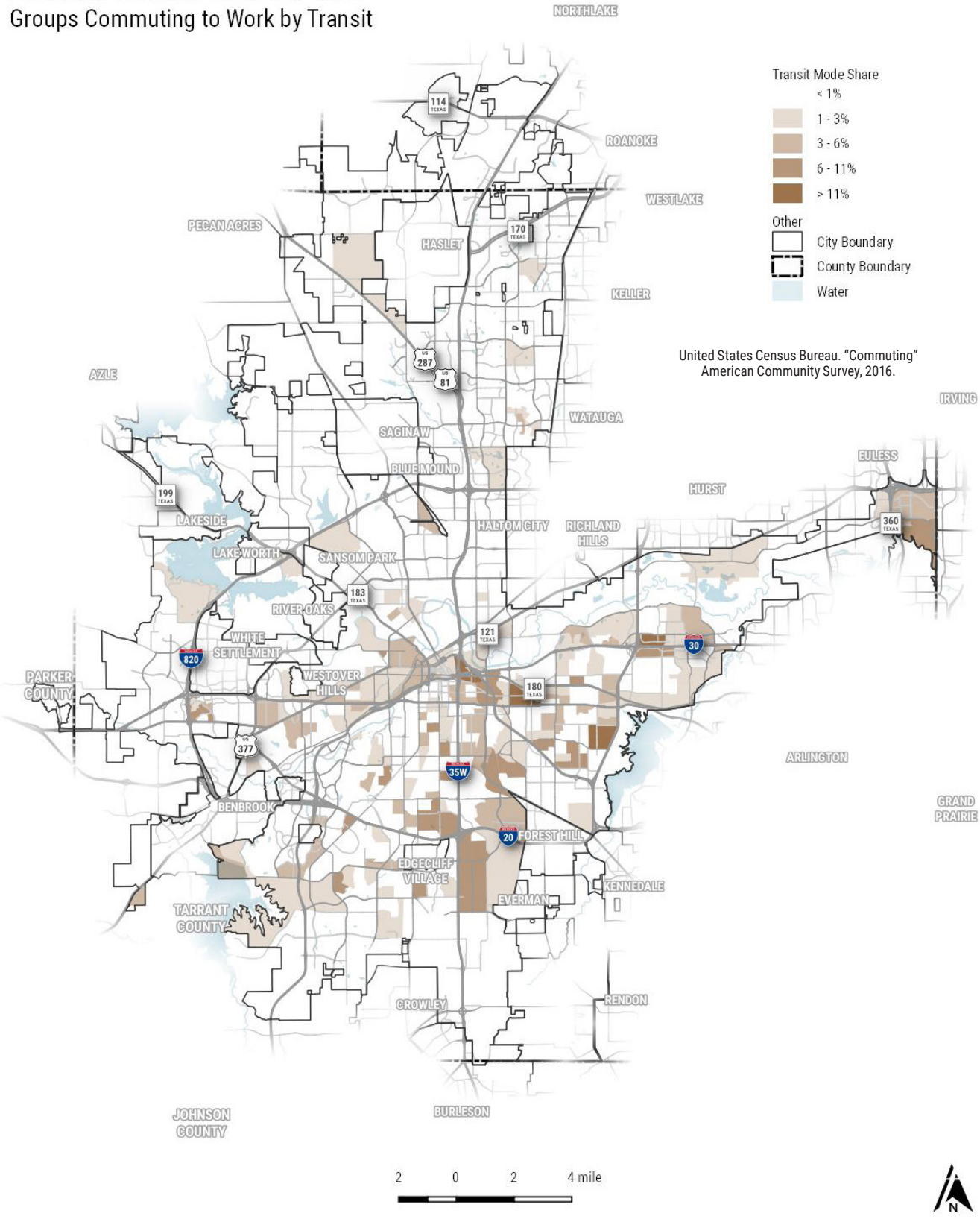


Figure 2. Share of transit commute trips across the city. Map reflects current conditions and does not address areas of future growth.

Existing Networks and Safety

As of 2018, there are 89 miles of paved trail, 30 miles of natural surface trail, and 55 miles of on-street bicycle facilities in Fort Worth. The trails primarily run along the extensive river system and parks in the city. The on-street bicycle facilities are concentrated in the central core with some disconnected bike lanes distributed throughout the city. Several segments of connected bike lanes exist in the northeast part of the city such as stretches of Park Vista Boulevard, Redwood Terrance, and Parkwood Hill Boulevard, which have connecting bike lanes. The Shiver Road bike lanes connect to a shared use path which leads to Heritage Glen Drive. For the most part, however, bicycle facilities are not consistently connected to one another.

While bicycle crashes and fatalities are dispersed across the city, Camp Bowie Boulevard and Lancaster Avenue each have larger numbers of injuries and fatalities than other corridors in the city. In 2016 and 2017, the top factors leading to bicycle crashes were driver inattention, driver failure to yield, and driver failure to control speed. "Other" was the leading factor, indicating a need to collect additional information into the causes of bicycle injuries.[1]

Sidewalk coverage is fairly complete in the downtown urban core and surrounding neighborhoods, as well as newly developing areas, which are required to install sidewalks. However, there are many residential communities that generally do not have sidewalks, as shown in Figure 3.

Pedestrian injuries and fatalities are clustered downtown and along certain corridors. High crash corridors include but are not limited to Camp Bowie Boulevard, I-820, I-35W, Berry/University, Miller Avenue, South Riverside Drive and Mansfield Highway, East Loop 820 North, West Rosedale Street, East Lancaster Avenue, Bridge Street, Jacksboro Highway, North Main Street, and Azle Avenue.

Separated bike lane, crosswalk, and curb ramps leading to a school in Fort Worth.

As Figure 4 illustrates, many of these high crash corridors are also transit routes. Crashes and fatalities are frequently located in proximity to bus stops.

The most common pedestrian crash types in 2016 and 2017 were driver inattention, failure to yield to pedestrians, failure of driver to control speed, backed without safety, and impaired vision. The third most common reported crash type was "Other," which, similarly to the bicycle data, suggests the need for more research into crash causes.

1 Source: City of Fort Worth Police Department, Report Beam

Existing Bike Facilities and Bicyclist-Involved Crashes (2012 - 2016)

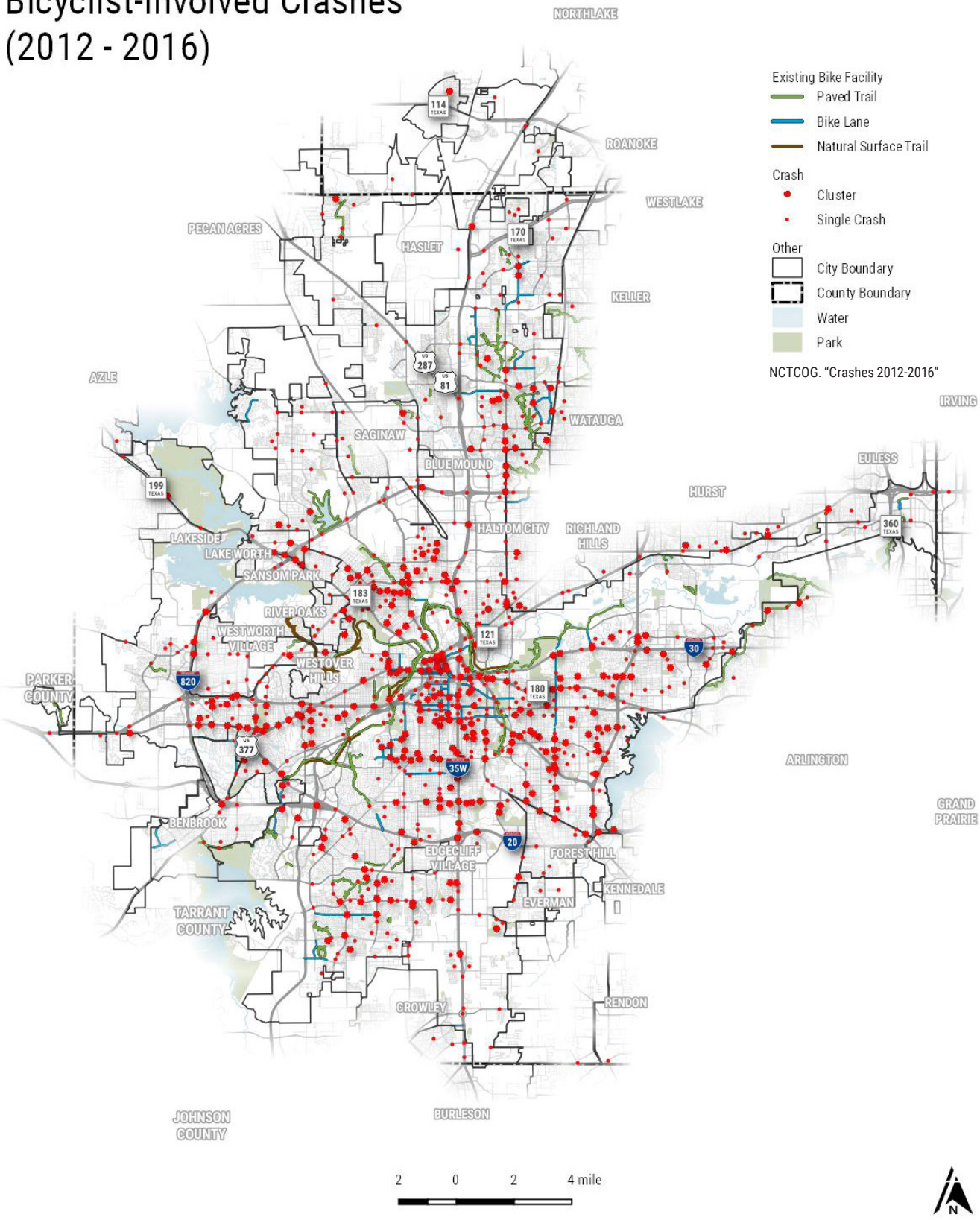


Figure 3. Map of bicycle facilities and bicyclist-involved crashes, 2012-201 (Source: North Central Texas Council of Governments crash data, 2012-2016)6

Existing Sidewalks, Transit, and Pedestrian-Involved Crashes (2012 - 2016)

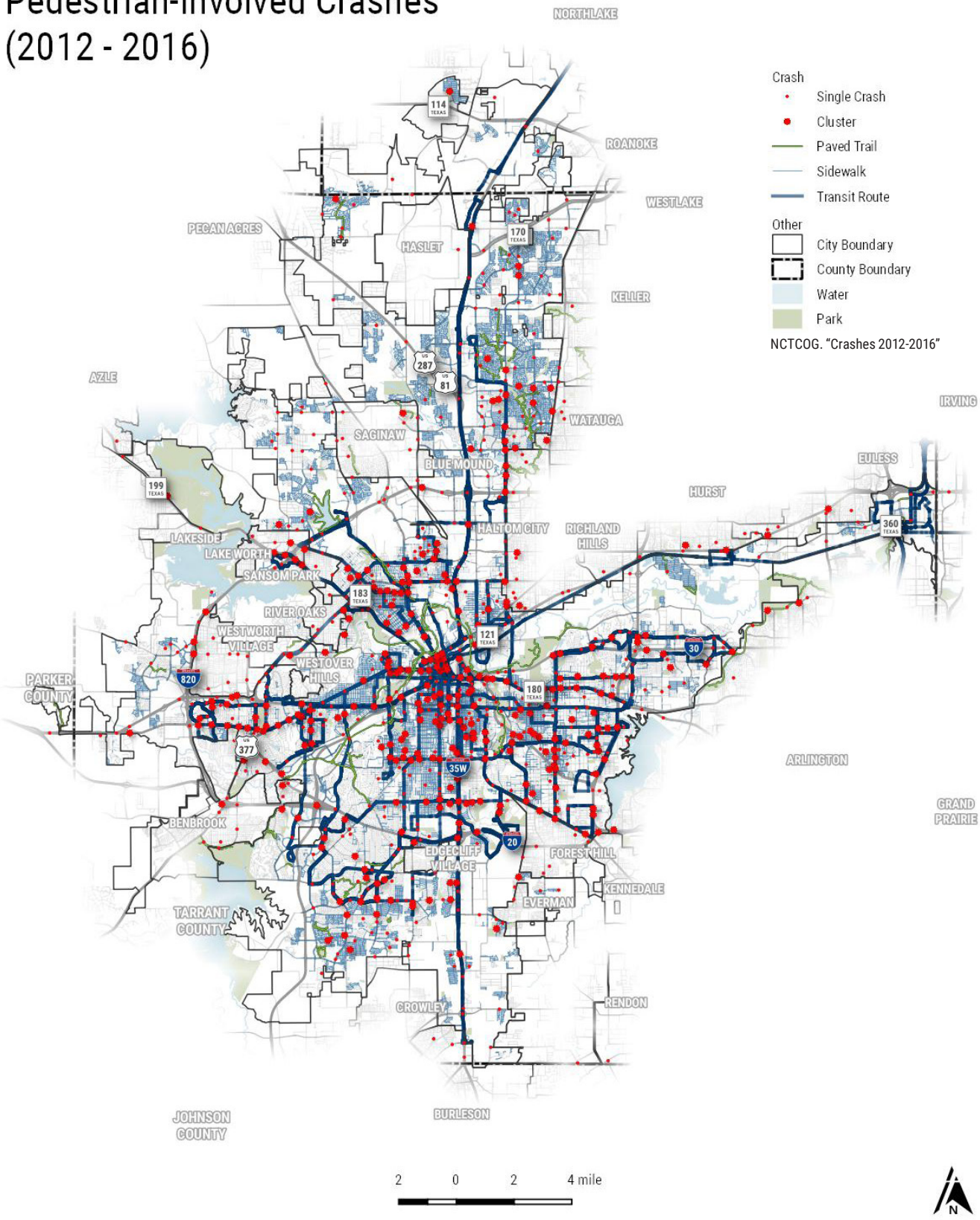


Figure 4. Map of existing sidewalks and pedestrian-involved crashes, 2012-2016

Equity

Bicycling and walking are affordable modes of transportation that can provide low-cost transportation options for everyone in Fort Worth and can be essential for low-income households. Research conducted through the Fort Worth Task Force on Race and Culture shows that low-income households are especially concentrated east of I-35 and north of I-20.

These areas also have a high number of households without access to a motor vehicle. Many zero-car households are located east of I-35, though there are pockets of zero-car households downtown, and in the South Main and Near East Side neighborhoods, where a car may not be seen as being necessary or convenient. Figure 6 shows several other locations with low motor vehicle ownership, which may be important areas to support with sidewalks and bicycle facilities. Figure 7 shows the parts of the city that have higher populations of people with disabilities.

Figure 8 shows the parts of the city that are "majority minority," areas where a majority of the residents are member of a minority ethnicity. It also shows where majority minority neighborhoods are located within ½ mile of a bicycle/pedestrian trail or an on-street bicycle facility. Approximately half (53.5 percent) of the majority minority neighborhoods are located within a ½ mile of a trail of bike lane. Expanding the on-street network for the south and east would help connect majority minority communities.

Similar analysis was also conducted in relation to bikeshare stations (see Figure 9). Because the 46 bikeshare stations are concentrated in the downtown area, many of the majority minority neighborhoods located outside of downtown do not have nearby access to bikeshare.

The Mayor's Committee on Persons with Disabilities receives an update on the Active Transportation Plan.

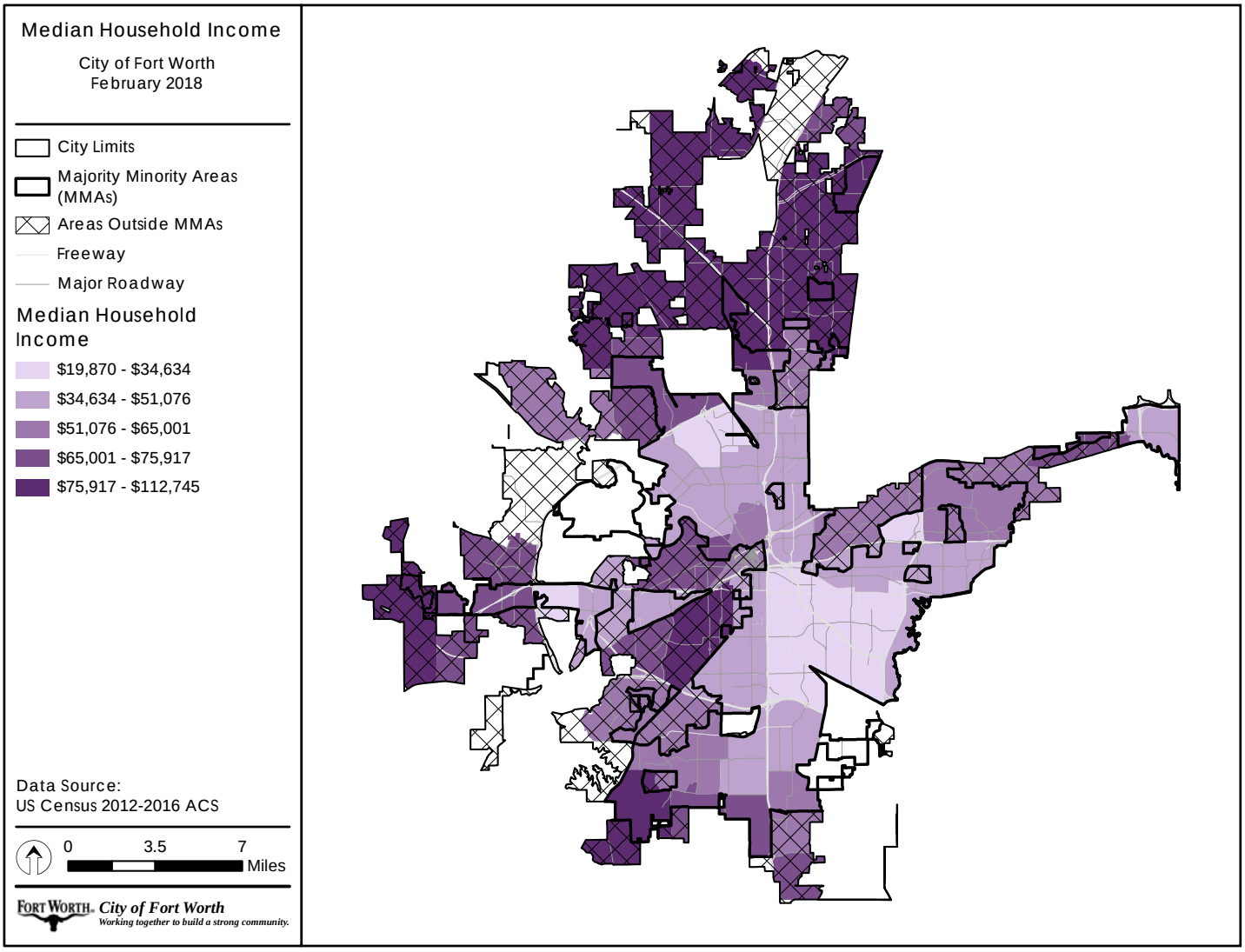


Figure 5. Median household income distribution across Fort Worth

Zero Car Households

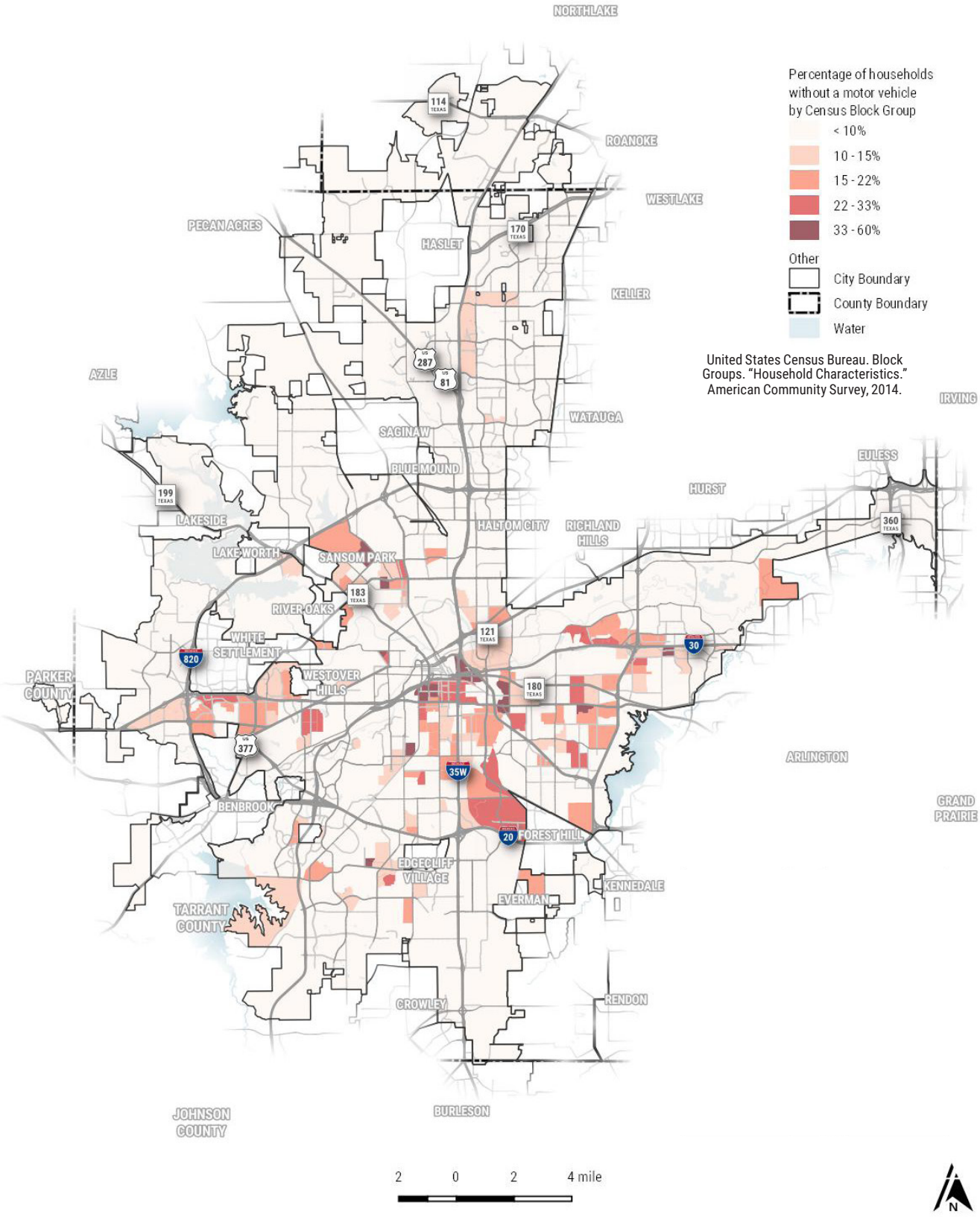


Figure 6. Distribution of households without access to a motor vehicle across the city (Source: United States Census Bureau. Block Groups. American Community Survey, 2014.).

People with Disabilities

Percent of Residents by Census Tract
Living with Disabilities

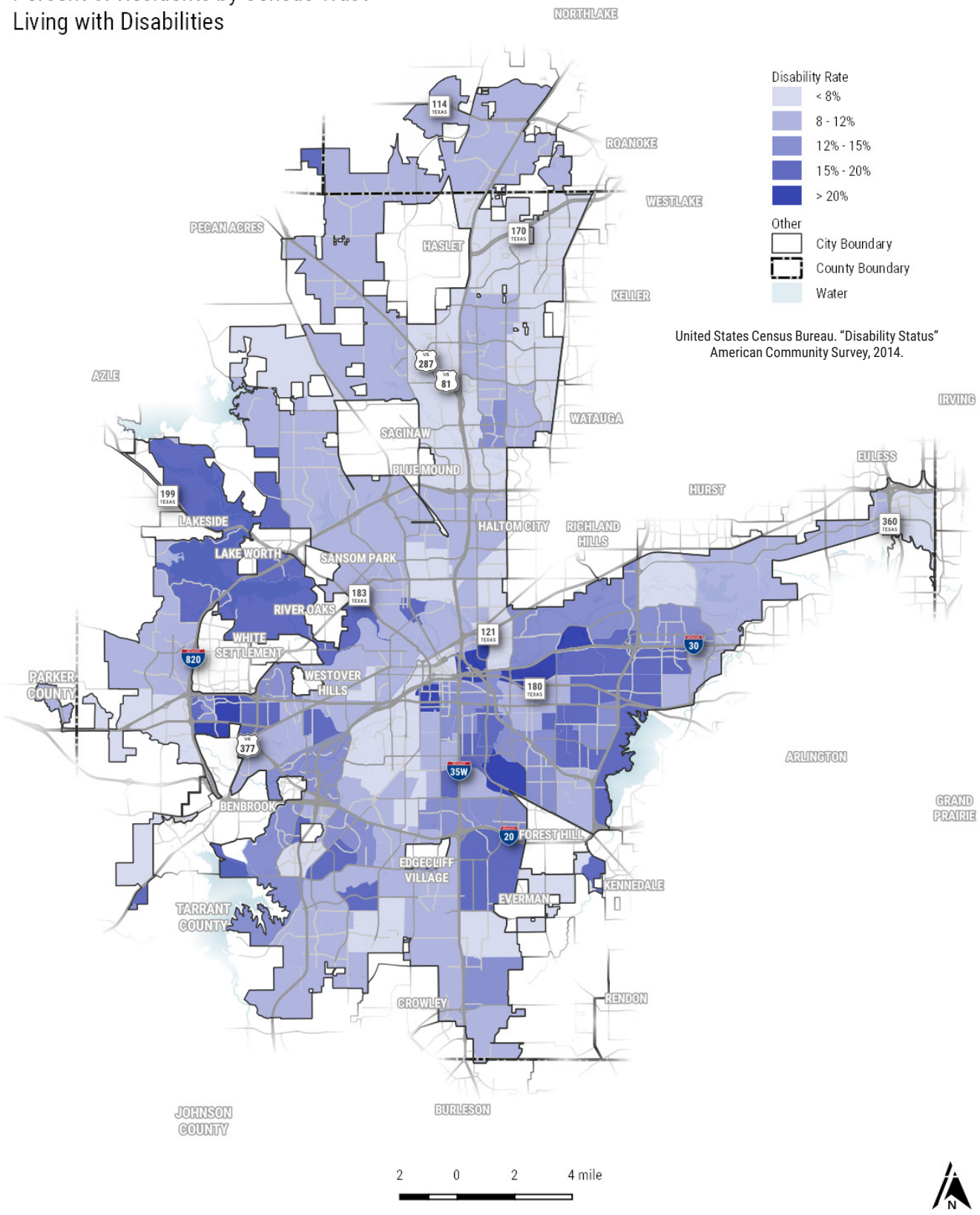


Figure 7. Distribution of people living with disabilities in the City of Fort Worth

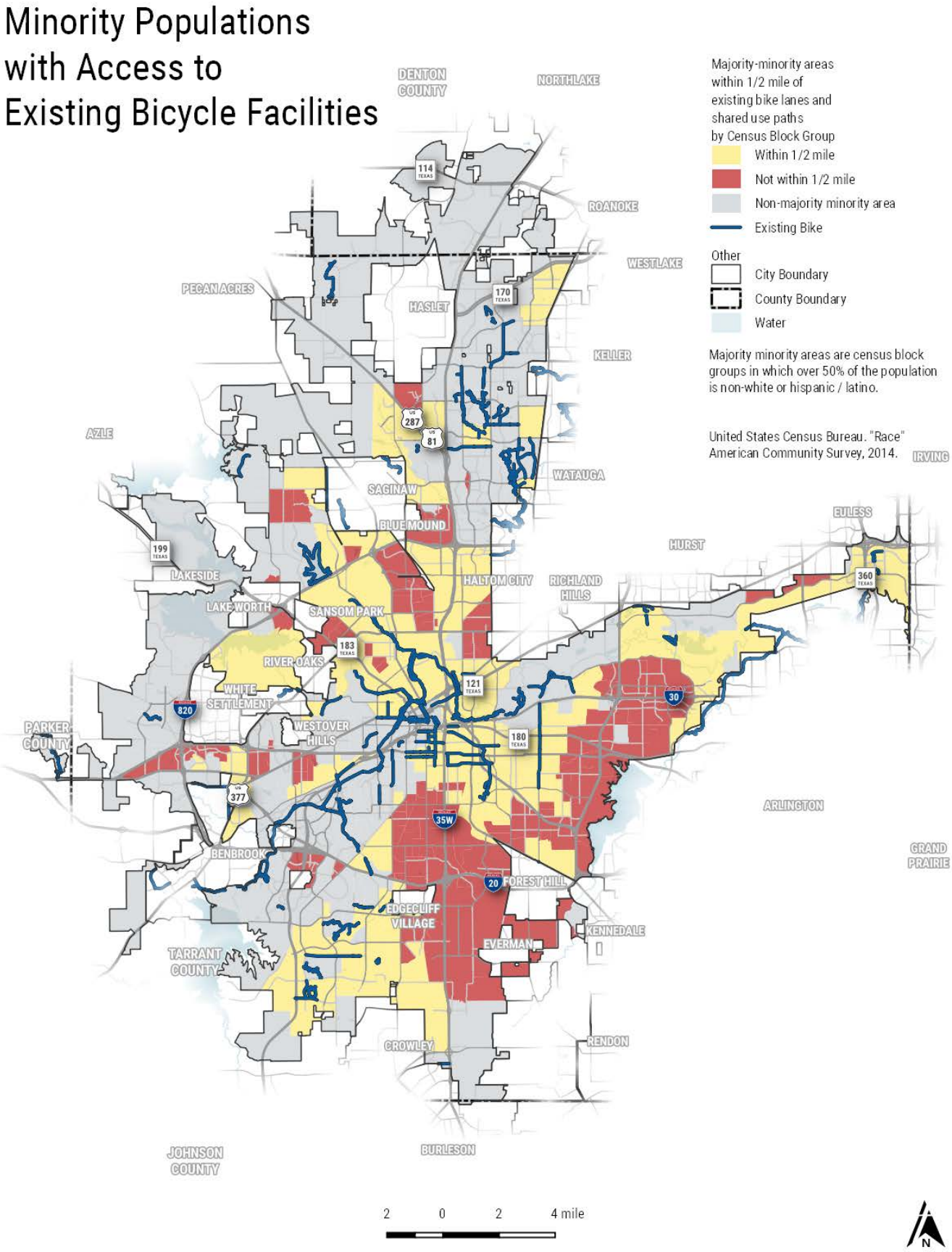


Figure 8. Neighborhoods where a majority of the residents are members of a minority community have access to an on-street bicycle facility or a trail. Shared lane markings and signed routes are not included(Source: United States Census Bureau. American Community Survey, 2014.).

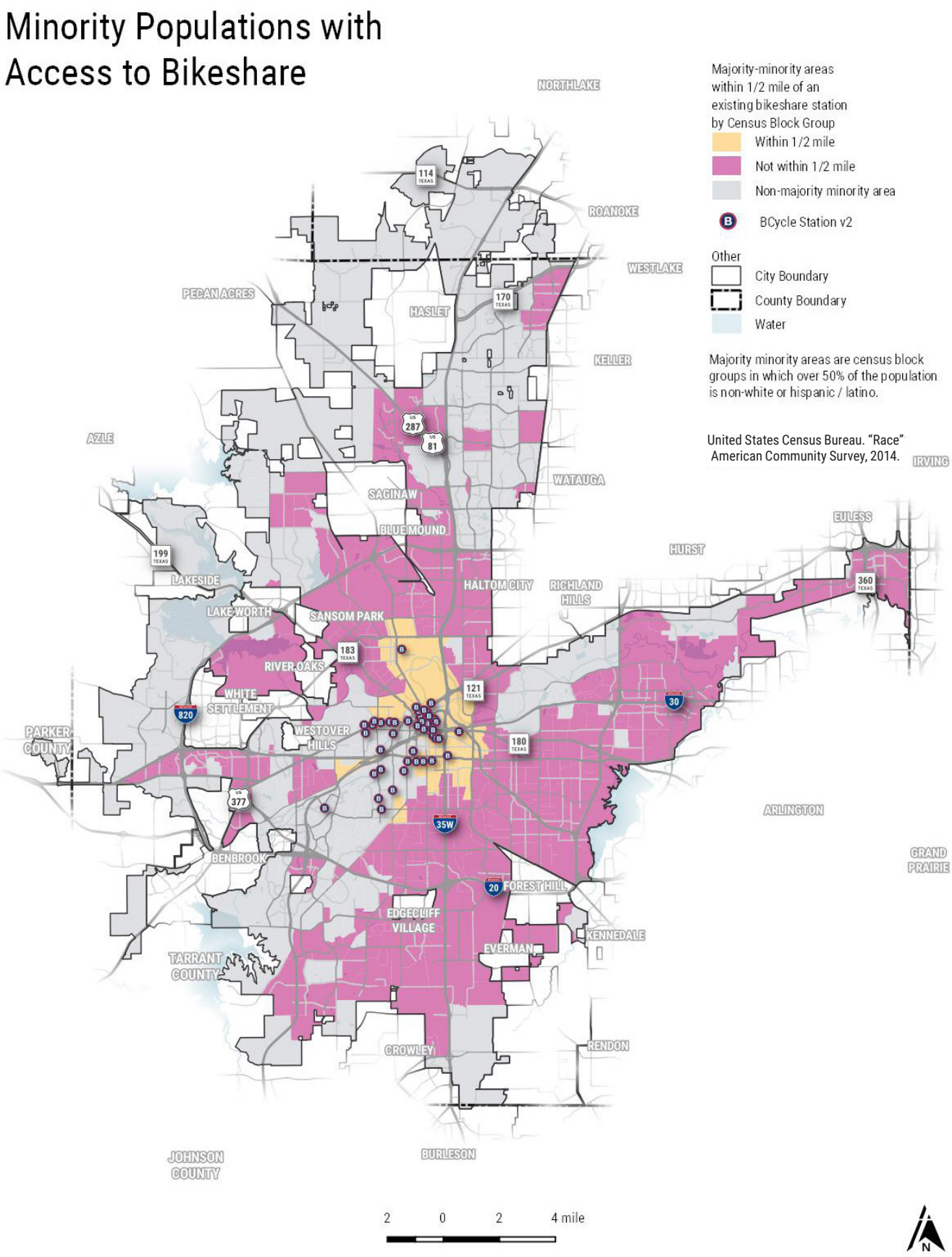


Figure 9. Neighborhoods where a majority of the residents are members of a minority community have access to a bike share station (Source: United States Census Bureau. American Community Survey, 2014.).

Latent Demand Analysis

Many factors influence the likelihood that people will walk and bike for transportation. Latent demand analysis is a tool to determine the locations in a city where bicycling and walking trips are likely to occur if safe and comfortable infrastructure is provided to help prioritize investments. It is based on an analysis of population, employment, and destinations. Locations with higher population and employment densities—where people and jobs are concentrated—are likely to have demand for walking and bicycling because trip distances tend to be shorter. People who use transit are likely to walk to bus stops and stations. Existing trail heads show where trail use is concentrated and may be expanded. Schools are often indicators of potential demand for safe walking and bicycling conditions because elementary and middle school children often live within reasonable walking and bicycling distance from school. Finally, areas with higher concentrations of households without access to motor vehicles are likely to have higher demand for walking and bicycling.

Parents push strollers and bicyclists use the existing Trinity Trails to access parks, restaurants, and retail. Access to trailheads is one element of the latent demand analysis used in this report.

Table 1. The weighted factors for the latent demand analysis map.

Factor	Weight	Source
Population Density	25%	U.S. Census Bureau. Block Groups. "Counts." American Community Survey, 2014
Employment Density	20%	NCTCOG. "Employers"
Bus and Passenger Rail Stations	10%	Fort Worth Transportation Authority. GTFS Feed. NCTCOG. "Features."
Trail Heads	5%	City of Fort Worth. "Trail Bike Lane Connections."
Primary, Secondary, and Post-Secondary Schools	20%	NCTCOG. "Features"
Households without Access to a Motor Vehicle	20%	U.S. Census Bureau. Block Groups. "Household Characteristics." American Community Survey, 2014

Figure 10 shows demand across the entire city. This indicates the general pattern that areas closer to the central core, with its higher densities of jobs and residents, generate higher demand for walking and bicycling. However, at this scale it is difficult to isolate the highest demand neighborhood.

The map in Figure 11 is re-calibrated to show only the areas of highest demand. This map identifies "hot spots" in several areas, including just south of North Tarrant Parkway, the communities to the east and west of Angle Ave and the Fort Worth Branch of the Trinity Trails System, the North Side, Monticello, University Park, Linwood, Downtown, Near South Side, Magnolia, the Texas Christian University Neighborhood, the neighborhood around the Southwestern Baptist Theological Seminary. It is worth noting that the high demand areas are frequently in or immediately adjacent to the city's identified Urban Villages.

This latent demand analysis informed the prioritization of corridors and projects in the recommended network of the Fort Worth Active Transportation Plan.

Latent Demand

Areas where walking and bicycling are likely to be useful and convenient to complete daily trips

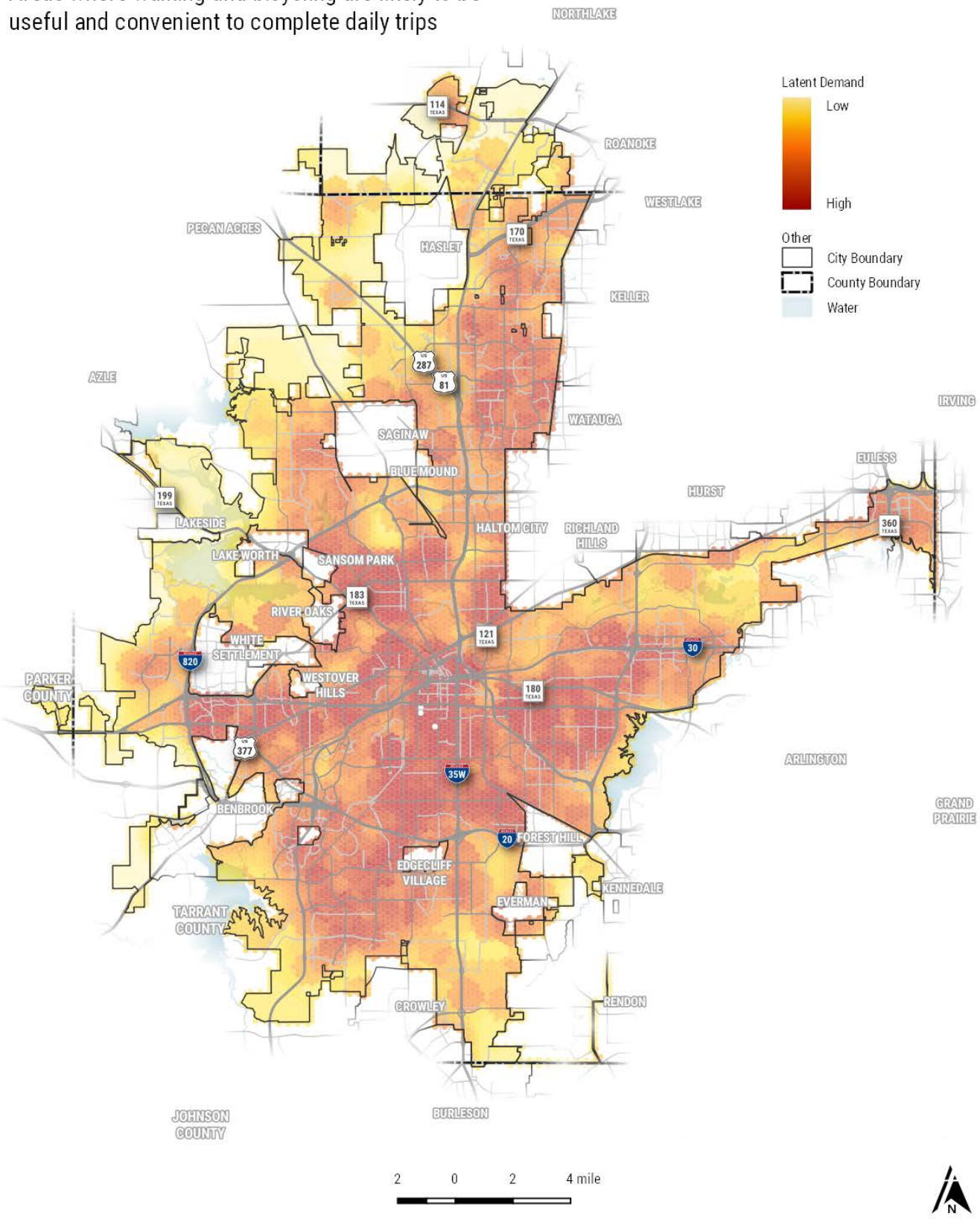


Figure 10. Map showing the results of an analysis of latent demand for walking and bicycling based on the density of population, employment, transit stops, trail heads, schools, and zero-car households.

High Demand Areas

Areas where walking and bicycling are likely to be useful and convenient to complete daily trips

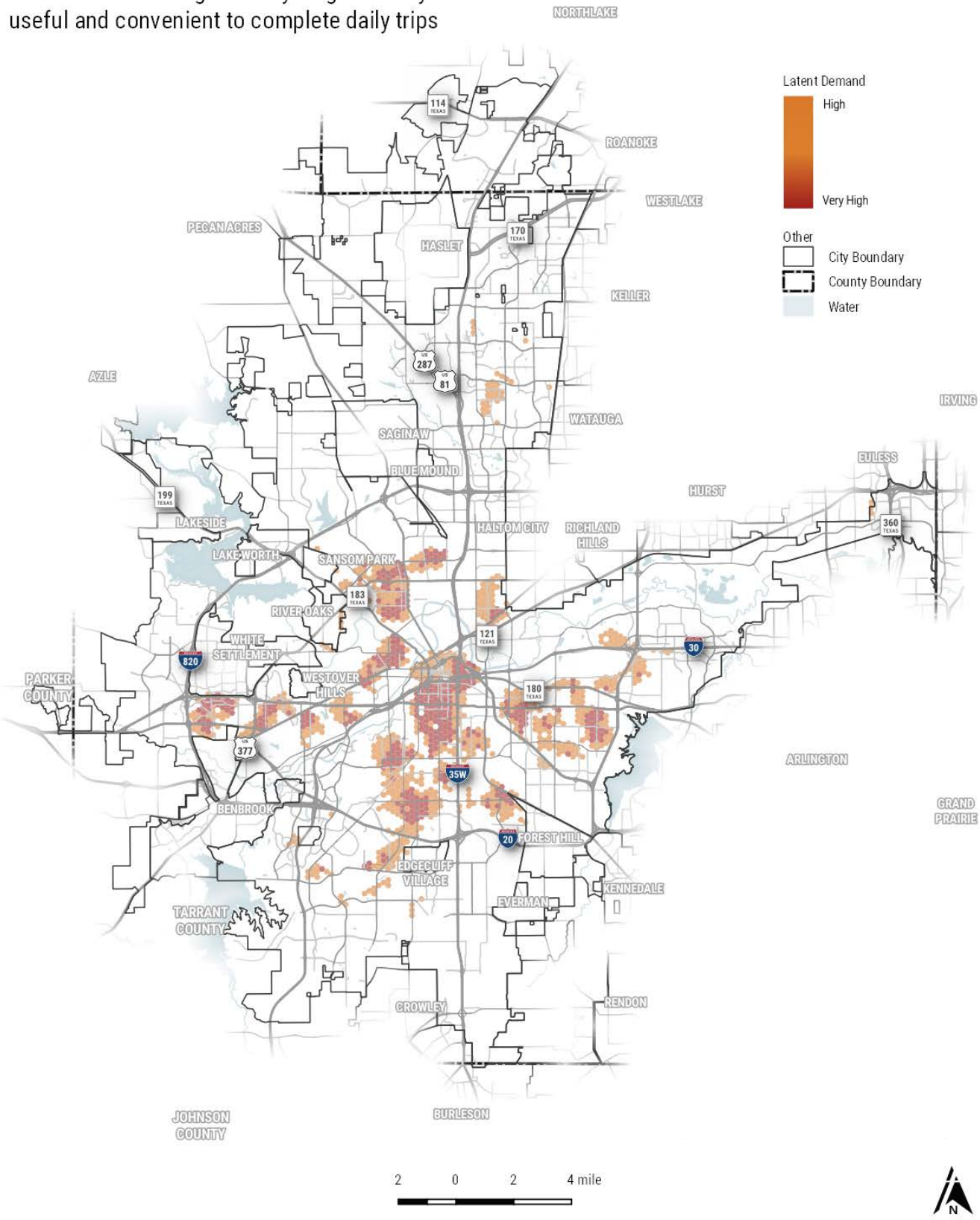


Figure 11. Summary map of highest demand walking and bicycling areas based on the density of population, employment, transit stops, trail heads, schools, and zero-car households.

Fort Worth Active Transportation Plan
Existing Conditions Report

April 2019

FORT WORTH®