

# Georgetown Bicycle Master Plan

**BIKE**  
GEORGETOWN 



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# City of Georgetown

## Bicycle Master Plan

*(Draft as of 7.29.2019)*



## Acknowledgements

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Georgetown's residents have offered incredible insight and local knowledge that proved invaluable in this plan's creation, and the project team would like to extend its gratitude to each individual who participated in helping to produce a bicycle network that will serve the City for years to come.

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# EXECUTIVE SUMMARY

In 2018, the City of Georgetown began updating its 2030 Comprehensive Plan. A component of this update is the Bicycle Master Plan (the Plan), a joint effort between City staff and a project team from the University of Texas at Austin (UT Austin). An initial study of bicycling conditions in Georgetown was conducted in fall 2016 by the UT project team. This study provided a baseline for the formal planning process that began in fall 2018. To inform the plan-making, the project team engaged with the Georgetown community extensively through public workshops, online surveys, and neighborhood intercept surveys; led stakeholder meetings with City and County staff and representatives of regional and state agencies; and administered site visits across the city. In addition, the project team assembled 12 case studies of best practices from around the country and completed 11 topical reports on technical components of bicycle planning, including but not limited to crash analyses, cost estimates, and design considerations.

## VISION, GOALS AND OBJECTIVES

The vision statement of the Georgetown Bicycle Master Plan describes the bicycling environment that the Plan aims to offer to Georgetown’s residents and visitors. The goals and objectives specify strategies, actions, and paths toward the realization of that vision.

## Executive Summary

### VISION STATEMENT

Georgetown will have a safe, well-connected bicycle network that is accessible to all ages, abilities, and backgrounds; supports the local economy; and improves the experience of everyone biking in the community.

Goals	Objectives
<i>Promote safety</i> for cycling on-and off-road	<ul style="list-style-type: none"><li>• Prioritize bike paths that minimize conflicts with vehicle traffic.</li><li>• Design intersections that prioritize protected bicycle and pedestrian crossings.</li><li>• Increase awareness of and respect for bicycle riders through education and enforcement.</li></ul>
<i>Develop connectivity</i> across the city to provide access to popular destinations	<ul style="list-style-type: none"><li>• Design and build bicycle corridors that connect residential areas with the city center and major destinations.</li><li>• Integrate with regional trails and bicycle networks.</li><li>• Overcome barriers at critical crossing points to provide east-west and north-south connectivity across the city.</li></ul>
<i>Enhance equity</i> in bike access	<ul style="list-style-type: none"><li>• Balance the needs and interests of cycling groups and the general public.</li><li>• Improve bicycle and pedestrian access around schools.</li><li>• Build flat paths where possible to accommodate users of all abilities.</li><li>• Expand transportation choices in underserved areas through bicycle infrastructure and connections to public transportation through first and last mile bicycle connections.</li></ul>
<i>Support the economy</i> through bicycling	<ul style="list-style-type: none"><li>• Implement bike and pedestrian-oriented urban design to increase transportation options to downtown businesses.</li><li>• Promote bicycle tourism by fostering partnership between public agencies, private business, and non-profit organizations.</li><li>• Ensure that commercial destinations have adequate bicycle parking.</li><li>• Attract bicycle-oriented business.</li></ul>
<i>Foster a bicycle friendly culture</i>	<ul style="list-style-type: none"><li>• Educate residents about proper bicycling behaviors for bicyclists, drivers, and pedestrians.</li><li>• Provide bicycle network maps and install wayfinding signage.</li><li>• Pursue a Bicycle Friendly Community Designation.</li><li>• Promote cycling as an easy, inexpensive way to enhance public health.</li></ul>

### SWOT HIGHLIGHTS

A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis was conducted based on information gathered from public engagements and field investigations. *Safety, connectivity, equity, economy, and culture* are key themes that emerged from the SWOT analysis. These themes have become key attributes of the vision and directed the formulation of goals and objectives of the Plan.

#### Strengths

- Bicycling for recreation is already very popular within the community.
- Recreational trails are utilized and enjoyed by residents and visitors.
- The Georgetown Public Library and the Sheraton Hotel both manage well-used public bike sharing services, and Southwestern University provides its students with on-campus bike sharing.
- Residents expressed support for additional bicycling facilities.

#### Opportunities

- Survey respondents stated that expansion of off-street trails would encourage bicycle use.
- Projects and infrastructure improvements that overlap with planned or proposed projects in other departments (e.g. Streets) can be prioritized for their low cost and high reward.
- There exist roads that can be utilized as a secondary low stress network to guide bikes away from major roadways.

#### Weaknesses

- The lack of bike lanes and bike facilities makes some residents feel unsafe while riding bikes.
- Drivers and bike riders lack knowledge and experience comfortably sharing the road.
- Most bicycle trips are recreational rather than for commuting or running errands. This is potentially due to Georgetown's proximity to a large city, its extensive parks with existing trails, and lack of bicycle infrastructure connecting popular destinations.

#### Threats

- Rapid development outside of Downtown does not lend itself to biking due to long distances between destinations.
- Improvements made to major arterials without incorporated bicycle infrastructure will fortify existing barriers to bike connectivity and likely create new threats.
- Lack of coordination among public agencies and private developers or advocates concerned with biking might delay or deter the implementation of City-wide bicycle system integration and infrastructure improvement.

### PROPOSED BICYCLE SYSTEM

Planning and design of the bicycle network are guided by the Plan Vision, Goals, and Objectives. The essential elements of the proposed system can be characterized using the “5-4-3-2-1” framework below. A map of the proposed system is shown in Figure 1.

<p><b>5</b> types of bicycle infrastructure</p>	<p>It is not feasible nor economical to provide bicycle treatment on all streets, roadways, and intersections. The Plan proposes <i>five types of common bicycle treatments</i>: off-street path, physically protected bike lane, buffered bike lane, striped bike lane, and sharrow. Application of each type should be based on the assessment of system needs and local conditions.</p>
<p><b>4</b> sets of critical connections</p>	<p>The Plan proposes improvement to <i>four sets of critical connections</i> in order to overcome the identified bicycling barriers. The first set includes four bicycle crossing points along I-35 to improve east-west biking connectivity. The second set includes three crossing points along San Gabriel River to improve north-south connectivity in northern Georgetown. The third set includes three crossing points along University Ave. The fourth set connects Sun City to Overlook Park and Downtown while minimizing conflicts with Williams Dr.</p>
<p><b>3</b> closed bicycle loops</p>	<p>Upon completion of the four sets of critical connections, the Plan presents <i>three closed bicycle loops</i> to serve the whole of Georgetown.</p> <ul style="list-style-type: none"> <li>• Loop 1: Central Georgetown components San Gabriel bike trail to the north and west, Maple St. and Holly St. to the east, 15<sup>th</sup> and 16<sup>th</sup> St. to the south</li> <li>• Loop 2: Southern Georgetown components San Gabriel bike trail to the north, Inner Loop to the east, 21<sup>st</sup> St. to the south, Wolf Ranch Pkwy. to the west</li> <li>• Loop 3: Northern Georgetown components San Gabriel bike trail network to the west and south, trails in Berry Springs Park to the east, Shell Rd. to the north</li> </ul>
<p><b>2</b> corridors in central Georgetown</p>	<p><i>Two corridors</i> connect the three bicycle loops described above. They form a secondary low stress network that minimizes conflicts with Austin Ave. and 7<sup>th</sup> St., which carry large volumes of vehicular traffic. The north-south corridor follows Main St. and the east-west corridor is along 8<sup>th</sup> St. They intersect at the Square, Georgetown’s historic center.</p>
<p><b>1</b> central core</p>	<p><i>The Square</i> is the vibrant, people-centered focal point of Georgetown. The Plan aims to enhance connectivity between the Square and the rest of the city, building off of existing roads and integrating with park paths.</p>

# Executive Summary

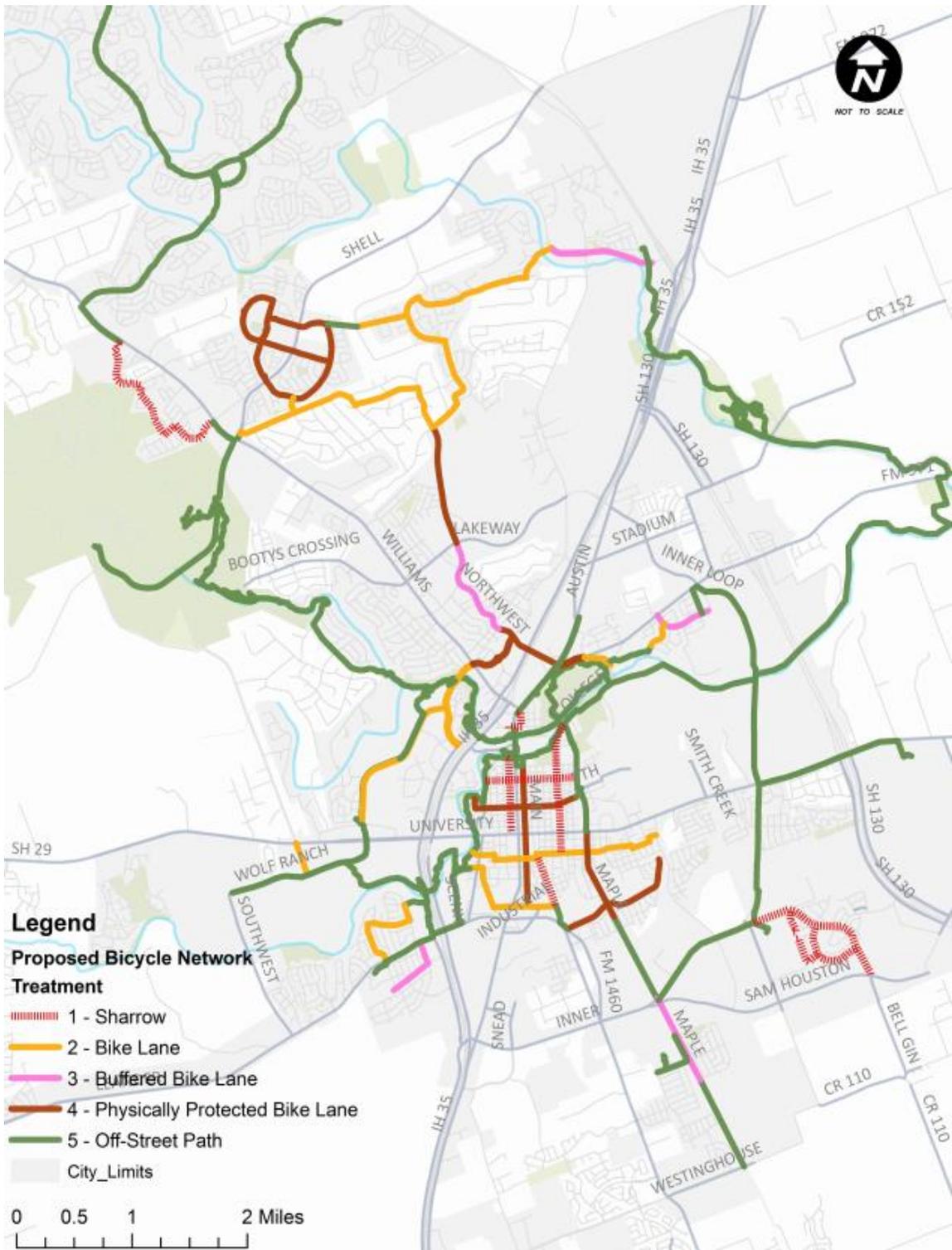


Figure 1. Proposed Bike Network

\*for descriptions of the types of bike infrastructure shown in Figure 1, see page 44

# ENGINEERING, EDUCATION, ENCOURAGEMENT, ENFORCEMENT, AND EVALUATION PLAN

Engineering, Education, Encouragement, Enforcement, and Evaluation make up the “5E’s” framework, the industry standard for implementing bicycle or pedestrian improvements. The City already possesses an extensive network of off-street cycling trails, which are popular among local bike riders and visitors and stimulate economic development for local businesses. The citizens of Georgetown have expressed interest in connecting the off-street trails and other key areas of the city via on-street facilities. To fulfill these requests, this plan utilizes the 5E’s framework. High level recommendations for each E are as follows:

### Engineering

- Strengthen the City’s Complete Streets policy
- Adopt NACTO guidelines in all design manuals

### Education

- Expand the Safe Routes to School program
- Train City engineers in bicycle facility design
- Partner with local bicycle advocacy groups to provide educational classes for adults and students

### Encouragement

- Create a bicycle advisory committee
- Implement bicycle encouragement programs
- Work toward recognition as a Bicycle Friendly Community

### Enforcement

- Work with the Georgetown Police Department to refresh officers on bicycle safety
- Enhance local laws and regulations to improve safety for bicyclists and all

### Evaluation

- Create a bicycle and pedestrian counting program
- Implement a set of system performance measures

# Chapter 1:

## Introduction

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### 1.1 PLANNING PURPOSES

The purpose of the Georgetown Bicycle Master Plan is to fulfill the goals established by the Overall Transportation Plan (OTP) and to advance the City's 2030 Comprehensive Plan vision. Each iteration of the Plan will recommend actions that City staff take to best fulfill those objectives.

The City's need for a Bicycle Master Plan has been addressed in a number of existing plans and policy documents, including the 2030 Comprehensive Plan, the Overall Transportation Plan, the Sidewalks Master Plan, the Downtown Master Plan, the Overall Transportation Plan, and the Parks and Recreation Plan. The Bicycle Master Plan's goals have been developed to align with and build upon the vision of the 2030 Comprehensive Plan.

These existing plans focus on improving conditions for cycling in the City of Georgetown and enhancing connectivity through on- and off-street facilities. The Overall Transportation Plan references the presently limited state of bicycle accommodations, as well as limited availability of right of way on city streets to install them. The OTP also recommends amendments to the Unified Development Code (UDC) to include more considerations for bikes.

The 2030 Comprehensive Plan identifies a lack of roadway connectivity, including bicycle connectivity, and outlines the need to build key transportation linkages. The Downtown Master Plan similarly references lack of bike route continuity in terms of access from outlying areas to Downtown. It recommends strengthening these linkages and improving signage to key destinations. Proposed improvements can be aligned with and connected to existing planned projects in the Sidewalks Master Plan and Parks and Recreation Plan to fully integrate cycling facilities into the city.

These documents were vital in shaping the goals and objectives of the Bicycle Master Plan. As City staff are currently in the process of updating the 2030 Comprehensive Plan, this iteration of the Bicycle Master Plan may not reflect the adjusted document.

### 1.2 PLANNING PROCESS

The project team from UT Austin conducted an initial study of bicycling conditions in Georgetown in fall 2016. Findings from the 2016 study provided a strong starting point for the formal planning process in fall 2018.

The 2018 planning process consisted of eight main activities:

1. Kickoff meeting with City staff
2. Community workshops open to the general public
3. Round-table discussions with key stakeholders and representatives of related agencies
4. Online surveys
5. Neighborhood intercept surveys
6. Field investigations of existing roads, intersections, and trails
7. Peer city case study reviews
8. Topical research reports

#### 1.2.1 PUBLIC INVOLVEMENT

Georgetown community members participated in the public involvement process through a series of activities co-organized by the project team and City staff. This process included community workshops, stakeholder meetings, presentations to the Advisory Committee and City agencies, a number of online engagement opportunities. The project team gathered additional information through multiple field investigation trips, which included conducting intercept surveys.

Community and stakeholder meetings were held in the fall of 2018, including one kickoff meeting to discuss preliminary scoping for the Bicycle Master Plan, two community workshops, and two stakeholder meetings. The community workshops cumulatively attracted over 60 attendees and a total of 72 comments were submitted as a result. Workshop attendees expressed various concerns regarding bicycling conditions in Georgetown and offered experience-based assessments of cycling strengths and opportunities throughout the city. They shared their ‘secret cycling paths’, favorite cycling spots, and desired destinations; this provided the project team with valuable feedback on the draft plan and proposed design improvements. In the stakeholder meetings, a group of local officials and professionals provided their perspective on biking challenges and potentials in Georgetown. They identified tasks for the bike plan to tackle, discussed community outreach efforts, identified gaps in the City’s current bicycle facilities, reviewed and commented on the draft plan, and suggested tools for plan implementation.

With assistance from the City’s Communications Office, the proposed improvements were also displayed online to allow those who could not attend the workshops to view and comment<sup>1</sup>. Community workshop and stakeholder meeting details are available in Appendix 1: Review of Community Engagement.

1 - <https://transportation.georgetown.org/bike-plan>

### 1.2.2 ONLINE AND ON-SITE INTERCEPT SURVEYS

The project team developed a 28-question survey to solicit information about Georgetown residents' and visitors' current cycling and travel activities, their preferences for and attitudes towards cycling, and their opinions on and suggestions for investing in cycling infrastructure improvements. The survey was implemented through SurveyMonkey and publicized through the City's internal mailing lists and social media accounts (e.g. Facebook). The online survey was first administered in 2016 and then reopened in 2018. Over each period the online survey was open for one month and was hosted in both English and Spanish in order to solicit input from minority and non-English speaking community members. The online survey generated a total of 1,172 valid responses after duplicate responses from both years were excluded.

To reach residents with limited access to the internet-based survey, the project team developed a complementary, on-site intercept survey. The intercept survey contained fewer questions than the online version and was administered using the following steps.

1. The project team designed two versions of the survey questionnaires, one targeting cyclists and the other non-cyclists.
2. The team used a spatial sampling approach to select intercept sites to ensure that neighborhoods and important destinations were well covered. Areas like Downtown and the Southwestern University campus were intentionally over-sampled because of the concentration of activities. Minority neighborhoods in southeast Georgetown were also over-sampled due to the relatively low response rate to the online survey.
3. The project team dispatched two-person groups to the selected sites and conducted on-site intercept surveys during peak- and non-peak hours.

The intercept surveys generated 307 responses. *Figure 2* below shows the locations of the on-site intercept surveys administered in 2016 and 2018.

**Appendix 5: Survey Prompts** provides detailed analyses and reports on the responses from both online and intercept surveys.

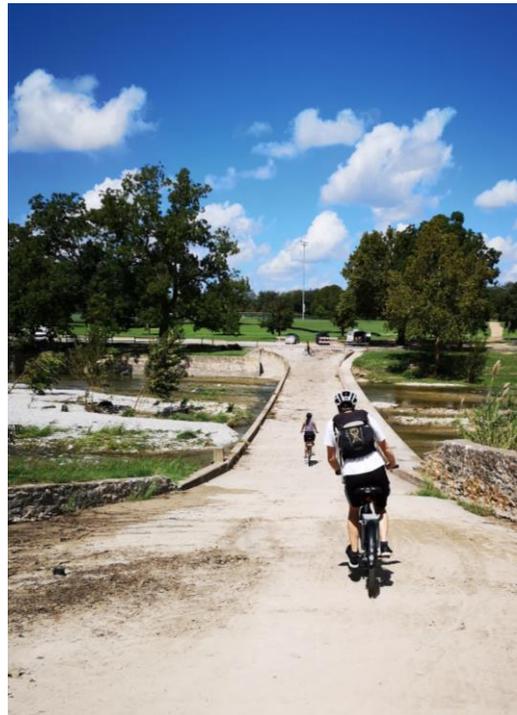
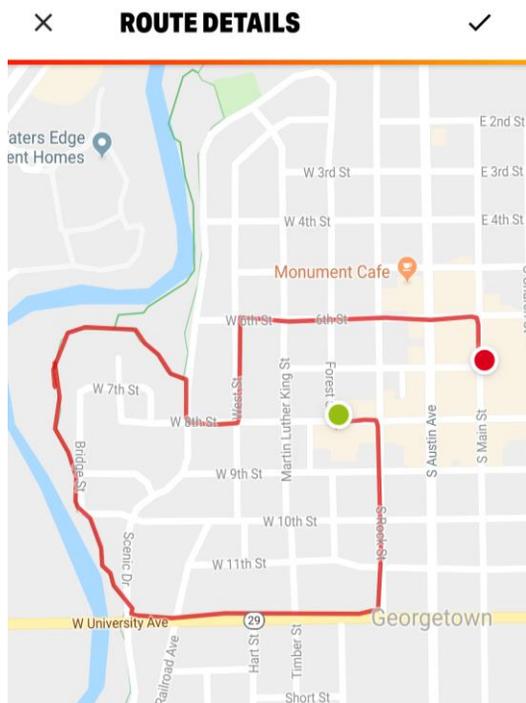


## Introduction

### 1.2.3 FIELD INVESTIGATION AND EXPERT CONSULTATION

The project team took multiple trips around the City to conduct field investigations. They applied a smartphone app, MapMyRide, to record more than 100 site visits. For each site visited, the team completed environmental audits to assess the existing conditions of the cycling environment and verify the on-the-ground accuracy of Geographic Information Systems (GIS) data compiled from a variety of sources.

The knowledge of outside planning professionals with various expertise was leveraged throughout the planning process. Through case studies of best practices and targeted research, the project team ensured best practices were being followed. These consultations are outlined in **Appendix 1: Review of Community Engagement** and **Appendix 9: Case Study Reviews**.



*The smartphone app MapMyRide was used to record field data from site visits*

# Chapter 2:

## Current Conditions

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### 2.1 STUDY AREA

Georgetown, a historic city located in Central Texas, is the county seat of Williamson County. It is home to more than 70,000 residents as reported by the 2018 US Census. The City has experienced fast population growth in recent years; the 2018 US Census estimated Georgetown to be the nation's sixth fastest-growing city in 2016-17.

The Capital Area Metropolitan Planning Organization (CAMPO) projects in its 2040 Regional Transportation Plan that Williamson County will more than double in population to 956,459 people between 2010 and 2030. Georgetown is likely to experience a similar growth trend, and CAMPO projections report a population of over 225,000 within Georgetown's legal jurisdictional boundaries by 2035. The city's rapid growth can be attributed to many factors, including its proximity to major employment centers such as Austin, access to highway networks, high-quality public services, and natural beauty.

The project team created a set of Geographic Information Systems (GIS) maps to document and visualize the City's natural, physical, and socioeconomic and demographic characteristics.

Data was compiled from the U.S. Census Bureau, the Federal Emergency Management Agency (FEMA), the State of Texas, CAMPO, the City of Georgetown, and a variety of other sources. A complete collection of these maps can be found in **Appendix 2: Current Conditions Analysis Supporting Maps.**

### 2.1.1 GEOGRAPHIC FACTORS

Natural geographic factors are fundamental to bike network planning and design. Floodplain areas offer both opportunities and threats to off-street bicycle trails; while FEMA-designated floodplains are not suitable for development, alongside scenic rivers and streams they are prime locations for bicycle trail corridors. However, these areas are often inaccessible during flood events, which can significantly diminish the connectivity of bike networks. Georgetown currently offers ample bicycle trails in its park and recreational areas; some of which are within floodplains.

Most bicyclists prefer flat paths; therefore, special attention should be paid to slope conditions when designing cycling routes. The steepest slopes in Georgetown exist along portions of the San Gabriel River banks.

### 2.1.2 MAJOR BARRIERS

The City of Georgetown possesses a number of manmade and natural barriers to bicycling. Major roadway barriers include IH-35, University Avenue (SR-29), Williams Drive, and Austin Avenue. The San Gabriel River and its creek system offer natural contours for bicycle routes but restrict cross-river bicycle flows. Major roadway barriers, displayed in Figure 3 below, inhibit safe bike access to Downtown Georgetown and the existing parks and trails network. Specific intersections that were reported as feeling unsafe are shown in Figure 4 below.

#### **IH-35**

IH-35 divides east and west Georgetown. At this time there is one safe path across IH-35 for bikes: a trail bridge along the San Gabriel River built and maintained by the Parks and Recreation Department. This single access point is insufficient for all residents on the west side of the City to reach Downtown Georgetown by bike, creating the need for additional crossing points.

#### **Williams Drive**

This high-speed and high-volume roadway is the primary arterial road in northwest Georgetown. It is the most direct path for cyclists from Sun City and other northwestern neighborhoods to central Georgetown. The river and winding street network both prevent bike riders from taking neighborhood streets eastward toward Downtown. Parts of Williams Dr. have a wide bikeable shoulder, but in many places this additional space is used for center turn lanes. Similarly, a portion of Williams Dr. has a sidewalk that some bicyclists utilize as an alternative to the high-speed road, but ultimately riding on the road is unavoidable. There are multiple reportedly intimidating intersections on Williams Dr., including D.B Wood/Shell Rd. and Del Webb Blvd., which must be crossed to access the trails that connect to Downtown.

#### **University Avenue (SR-29)**

University Ave. separates residents in southwestern Georgetown from an existing trail network that begins at Booty's Park. As University Ave. is a

# Current Conditions



Figure 3: Major Bicycling Barriers

## Current Conditions

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high-volume roadway, it is unsafe for bikes to share the road with vehicles. There are sidewalks wide enough to accommodate bicyclists along parts of this road, but these are discontinuous and require riders to integrate with traffic at various points. East of IH-35, University Ave. prevents residents in southern Georgetown from safely accessing Downtown Georgetown and Southwestern University, and is an unsafe route for students accessing East View High School. This east-west barrier bisects many areas that community residents could bike to, such as parks, commercial shopping centers, and the Downtown Square. The intimidation of riding along and crossing University Ave. typically encourages potential bikers to drive instead.

### **Austin Avenue**

Austin Ave. bisects Georgetown, running parallel to IH-35 and intersecting with it to the north and to the south of Downtown. The high speeds and volumes on sections of

Austin Ave. create very dangerous conditions for bicycle users. Austin Ave. also serves as a barrier for east-west travel, where it intersects with University Ave., Williams Dr., and 8<sup>th</sup> St.

### **The San Gabriel River**

Along stretches of the riverbank runs an existing hike and bike trail. While the system is highly popular among both residents and visitors, it also acts as a barrier, separating the neighborhoods in the northern and western parts of the City from central Georgetown. Rain events frequently make existing low-water crossings along the river impassable, and past severe events have completely washed them out. Since the river runs through all of Georgetown (with the exception of the southeastern region) it is taken into consideration when planning for much of the community. The new bicycle network should optimize the river network as an amenity for bike riders instead of a barrier.



*River/weather barriers: Bike path crossing the San Gabriel River before and after flooding*

# Current Conditions

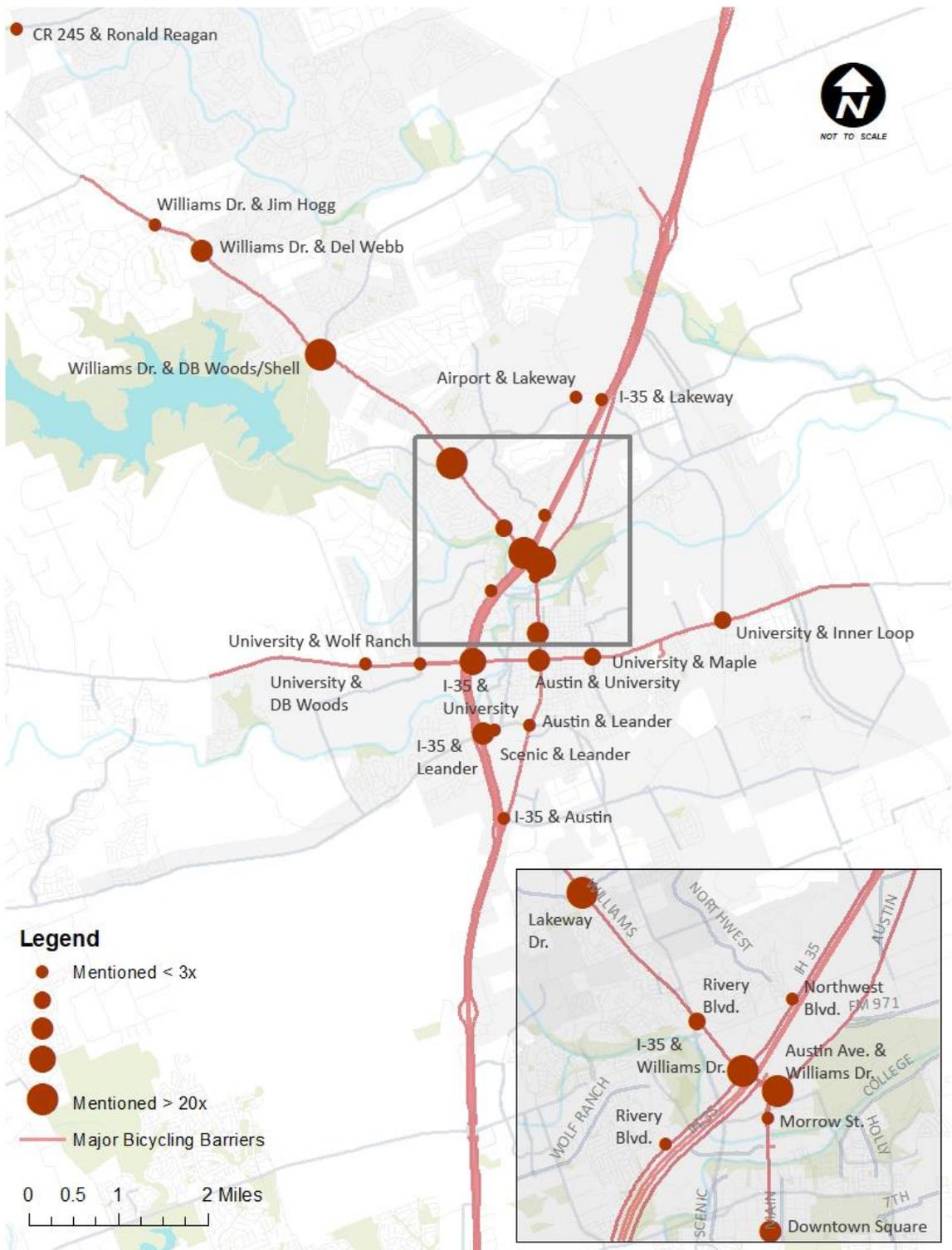


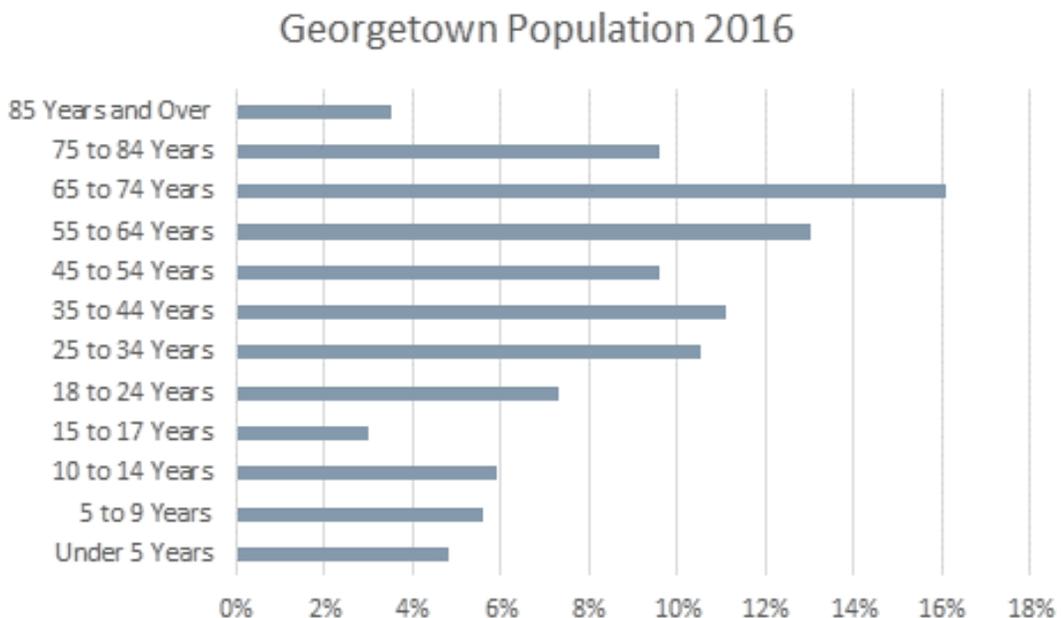
Figure 4. Most Unsafe Intersections in Georgetown (Source: Online Survey Responses, 2018)

### 2.1.3 DEMOGRAPHIC FACTORS

Demographic factors such as age, gender, ethnicity, household income, and employment can all influence a person's likelihood to utilize a bicycle. Of Georgetown's 70,000 residents, 73.7% of the current population identifies as White and non-Hispanic. The next largest demographic group is Hispanic or Latino (of any race), who make up 21.3% of the population<sup>2</sup>.

Fifty-two percent of Georgetown's population is over 45 years old, and only 15% of the population is made up of school-age children between five and 17. The median age is relatively high at 47, and is trending upward. In 2010, 23.7% of the population was under 18 and the median age was 40.9. If these trends hold, the

population in Georgetown will continue to skew older which will affect cycling initiatives. The city's age profile may impact the overall demand for and usage of the bike infrastructure, although the City is currently home to many bike riders over the age of 55. See Figure 5 for the age distribution in Georgetown.



*Figure 5: Georgetown Population, 2016 (Source: American Community Survey)*

2 - Sallis, James F., Terry L. Conway, Lianne I. Dillon, Lawrence D. Frank, Marc A. Adams, Kelli L. Cain, and Brian E. Saelens. "Environmental and Demographic Correlates of Bicycling." *Preventive Medicine* 57, no. 5 (2013): 456-60. doi:10.1016/j.ypmed.2013.06.014.

## Current Conditions

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Driving is the primary mode of transportation in and around the city. According to American Community Survey Census data, 89% of the current population drives to work, while only 0.03% bike to work. Thirty-nine percent of Georgetown commutes 30 minutes or longer, with an average commute of 27 minutes. An aging population and a long commute out of the city, mostly to Austin, explain the current lack of biking infrastructure and bicyclists.

More than 11% of residents in Georgetown do not have access to a vehicle. Since residents most commonly travel by car and much of the city's transportation infrastructure focuses on vehicles, those without a car may feel isolated without a variety of options. These residents could be vulnerable to unemployment without reliable transportation to jobs, and implementing bike infrastructure

could benefit this segment of the population by connecting them to employment. Biking could also offer a more affordable and equitable means of transportation for the 7.1% of Georgetown residents who are living with an income below the poverty line.

The final demographic consideration is that Georgetown's population is 52.5% female and 47.5% male. Research has shown that women are more likely to perceive greater threats to their personal safety when cycling and feel more comfortable with completely separated bicycle facilities<sup>3</sup>. This is consistent with the public's response to bicycling barriers, which revolved around perceptions of safety, particularly at intersections. Demographic GIS maps can be found in **Appendix 2: Current Conditions Analysis Supporting Maps**.

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3 - Loukaitou-Sideris, Anastasia. "Women's Issues in Transportation: Summary of the 4th International Conference, Volume 1: Conference Overview and Plenary Papers." 2011.

### 2.2 BICYCLE DEMAND ASSESSMENT

Bicycle demand was determined using four primary public outreach and involvement methods: community workshops, stakeholder meetings, online surveys, and individual intercept surveys. Key findings from the four public participation activities were developed based on a qualitative and quantitative review of all feedback received, and were subsequently used to inform route and intersection choices in Chapter 3.

#### 2.2.1 KEY TAKEAWAYS FROM COMMUNITY WORKSHOPS AND STAKEHOLDER MEETINGS

Georgetown residents were actively engaged during the public involvement process. The following emerged across all meetings:

- Most workshop and meeting attendees felt that real and perceived personal safety while cycling is a major concern for current and future bicycle riders.
- High-priority bicycle infrastructure projects should provide east-west connections across IH-35 and connections between residential neighborhoods and Downtown.
- Bicycle infrastructure should be located away from high-traffic, high-volume roadways and provide safe access to schools and parks.
- Bicycling has community support from an economic standpoint, particularly as a way to attract visitors to Downtown.
- Georgetown residents and decision makers are largely supportive of bicycle planning and investment, and feel there is great potential to build a bikeable city.

#### 2.2.2 KEY TAKEAWAYS FROM ONLINE AND INTERCEPT SURVEYS

In an effort to better understand residents' travel behaviors and their feelings towards bicycling, residents were invited to participate in online and in-person surveys. The 1,172 survey responses submitted during the public involvement process contained valuable input on various issues, needs, challenges, and opportunities that exist across the city. A heat map of survey respondents can be found in **Appendix 2: Current Conditions Analysis Supporting Maps**, and a full analysis of the online and intercept survey responses can be found in **Appendix 6: Survey Report – Analysis of Survey Results**. The principal remarks that recurred across the intercept surveys can be summarized as follows:



### 2.3 BICYCLE INFRASTRUCTURE ASSESSMENT

Georgetown is home to an extensive off-street hike and bike trail network, maintained by the Parks and Recreation Department. This section addresses current bicycle infrastructure and overall infrastructure factors, including schools, transit routes, and commercial areas. Current zoning regulations and Georgetown's Future Land Use Map were also evaluated. A complete Geographic Information Systems assessment was conducted, and can be reviewed in **Appendix 2: Current Conditions Analysis Supporting Maps**.



*Figure 6. Existing Off-street Trail System in Georgetown*

### 2.3.1 EXISTING BICYCLE FACILITIES

Figure 6 depicts current bicycle infrastructure in Georgetown. As reflected on the map, the current network consists of off-street paths and serves a primarily recreational purpose.

### 2.3.2 EXISTING INFRASTRUCTURE FACTORS

#### Schools

Schools are important points of connectivity in a bicycle network that is accessible to all ages and abilities. Designing safe facilities that enable students, teachers, and staff to commute by bicycle provides benefits for public health and community interaction. Additionally, those who regularly commute by bike are more likely to ride recreationally or for other purposes. An assessment of present connections between schools in Georgetown and existing sidewalk and off-street trail networks can be found in Appendix 2: Current Conditions Analysis Supporting Maps.

The Georgetown Independent School District has observed that there are already a number of students who bike to school, despite the lack of bike lanes in many areas. Georgetown ISD expressed interest in stakeholder meetings that these areas should be considered for biking safety improvements.

Since students are already using these areas with no formal facilities, Georgetown ISD is confident that if safer facilities are provided, more students will choose biking. Identified locations include:

- E. State Hwy. 29 from Eastview High School to the Indian Springs and Churchill Farms subdivisions
- Mitchell Elementary School and Wagner Middle School to Saddle Creek
- Maple St. to Purl Elementary to connect the established school walk zone on Quail Valley Dr.
- Stadium Dr. from Georgetown High School to Crystal Knoll subdivision
- Northwest Blvd. from Serenada subdivision and the Georgetown Tennis Center to Benold Middle School
- Northwest Blvd. from the Riverbend area and the Cypress Creek apartments
- Ford Elementary to new neighborhoods under development
- Wolf Ranch and Rockride Elementary into the surrounding neighborhoods

## Current Conditions

### Railroads

The existing railroad rights-of-way in Georgetown occupy important pieces of terrain that could be leveraged through partnerships in the creation of a rails-to-trails project. According to community feedback, the railway is seldom used and held by a private corporation for freight transport of limestone. While the periodic use of the railway may inhibit the option to completely convert Georgetown's railway to a new trail, there is a possibility of adding a trail alongside the existing rail track right-of-way. Utilizing this strategic swath of right-of-way would connect parts of Southern Georgetown with the Southwestern University campus, eastern Downtown and even as far north as Charles Forbes Middle School and Berry Springs. Numerous cities and regions in the United States and abroad have gone through the process of converting old and underutilized freight railways to community amenities in the form of multi-use trails. The Rails to Trails Conservancy (RTC), a non-profit organization, assists local municipalities with creating multi-use trails along existing and operating rail lines through a program called Rails-with-Trails.

RTC's latest Rails-with-Trails report cites 1,397 total miles of trails, of which 555 miles were trail segments along existing rails tracks<sup>4</sup>. A map of current railroad infrastructure can be found in **Appendix 2: Current Conditions Analysis Supporting Maps**.

### Transit

Georgetown has four GoGeo public transit routes which currently operate once hourly, but future growth will likely warrant increased frequency. Bicycles extend the potential radius of transit access beyond the one quarter mile walking threshold of the average individual, encouraging more users to consider transit. The public transit system should complement the proposed bicycle network to provide a safe, interconnected, and accessible multimodal transport network.

A map of current GoGeo transit routes can be found in **Appendix 2: Current Conditions Analysis Supporting Maps**.



4 - Rails-to-Trails Conservancy. "America's Rails-with-Trails." Rails-to-Trails Conservancy, [www.railstotrails.org/resource\\_library/resources/americas-rails-with-trails/](http://www.railstotrails.org/resource_library/resources/americas-rails-with-trails/).

## Current Conditions

### 2.3.3 PLANNING & ZONING FACTORS

The zoning map shown in Figure 7 below indicates that single family housing is the predominant land use in the City of Georgetown.

Commercial and public facilities are located along IH-35 and major roadways, while parks and green spaces are scattered at the edge of the city boundary. Survey responses reflected that parks and green spaces are major attractors for residents, as is the Downtown area for entertainment.

This plan proposes Lake Georgetown and the San Gabriel river trails as major parks which should be connected to the bike system. These same park trails will also be connected to Downtown and major commercial facilities by a low-stress bicycle network.

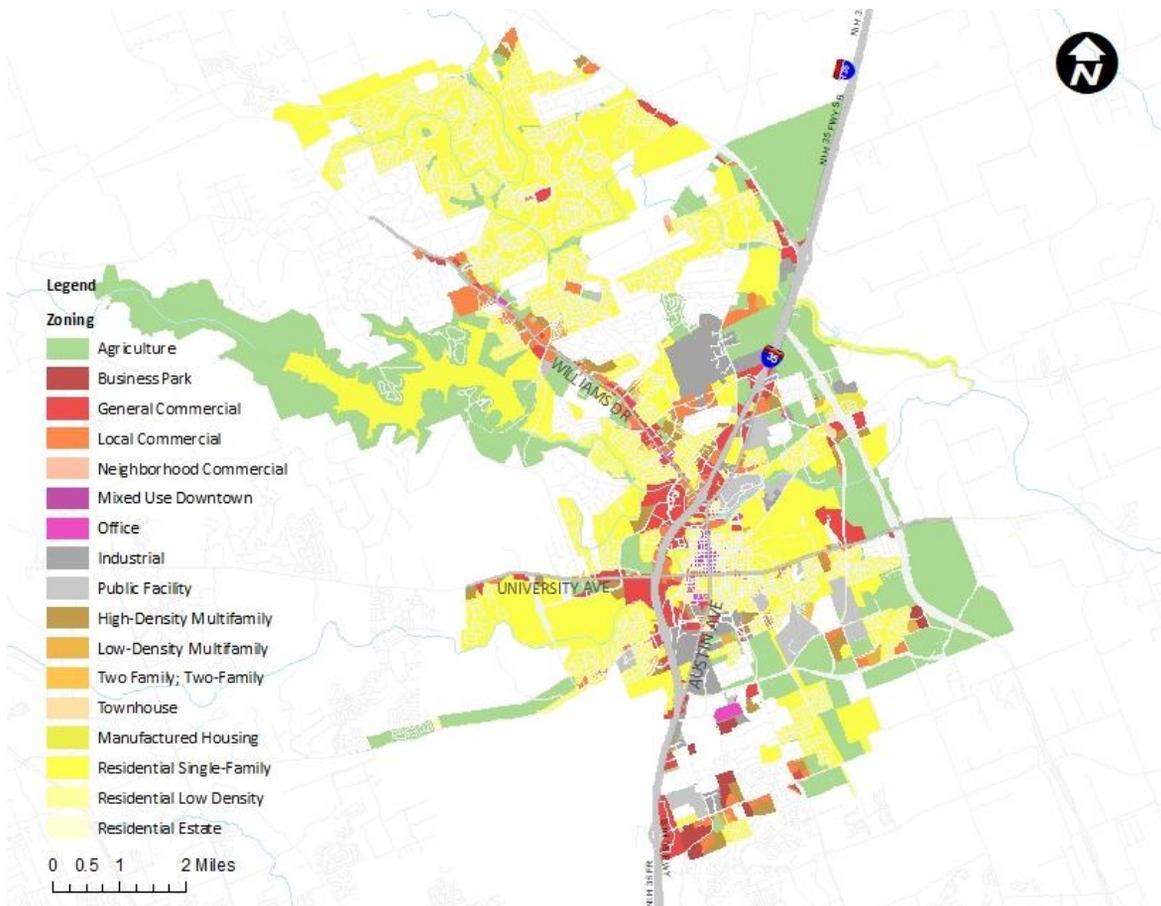
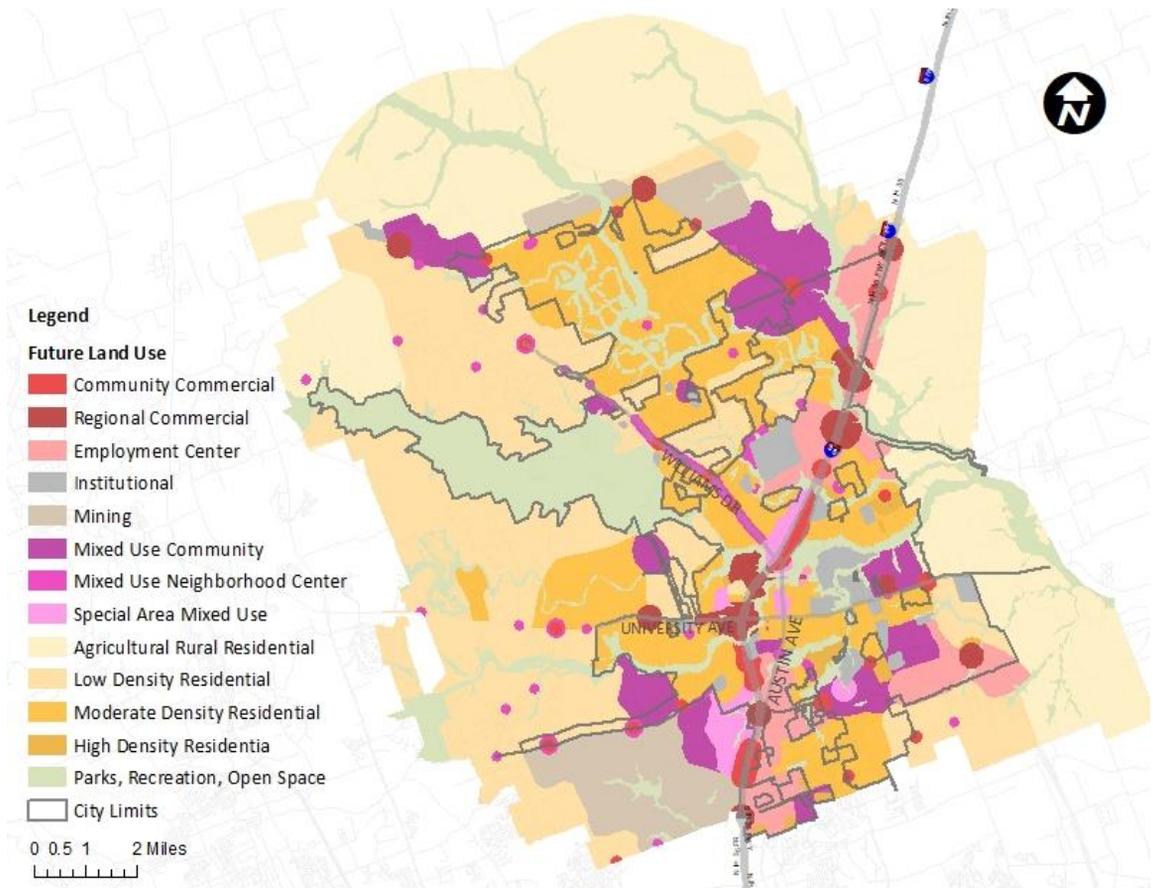


Figure 7. Existing Zoning Classifications

## Current Conditions

Recommendations in this plan were reviewed in accordance with the future land use general plan, shown in Figure 8.



*Figure 8. Future Land Use - General Plan*

### 2.4 CONNECTIVITY ASSESSMENT

A connectivity analysis was conducted to evaluate residents' abilities to access areas of interest within Georgetown. In community meetings, residents expressed the desire to access the existing parks and trail system, Downtown Georgetown, Southwestern University, and commercial areas by bicycle.

**Section 2.4 in Appendix 2: Current Conditions Analysis Supporting Maps** identifies areas that residents can travel to on current bikeable routes, and well as high-impact connections that could enable residents to reach the desired points of interest mentioned above.

Barriers and potential connections shown in Figure 9 below are the result of direct community feedback through in-person meetings, online surveys, and site assessments.

The proposed connections serve as major links in a new bicycle network that will enable residents to safely cross barriers in Georgetown to access Downtown and the existing parks and trails system. Major barriers to connectivity include rivers and creeks, flooded low-water crossings, University Ave., IH-35, Austin Ave., and Williams Dr. Appropriate facility types for each proposed connection and project feasibility are explored in **Section 3.3 Proposed Plans for Focal Areas**.

## Current Conditions



Figure 9. Segments Identified as Primary Connectivity Concerns

### 2.5 BICYCLE LEVEL OF TRAVEL STRESS ANALYSIS

Bicycle Level of Traffic Stress (BLTS) is an objective, data-driven way to evaluate the traffic stress imposed on bicycle riders, developed by researchers at the Mineta Transportation Institute and later adopted by governments and nonprofits<sup>5</sup>. Multiple cities and counties in the U.S. have conducted BLTS analyses, including several here in Texas such as the City of Lubbock, City of El Paso, and City of Austin.

Based on the scale from Dr. Peter G. Furth at the College of Engineering at Northeastern University, level of traffic stress ranges from 1 to 4. Higher stress bike lanes indicate that fewer people are willing to use them. Average Daily Traffic (AADT) volume measures were available on approximately 40 roadway segments of the thousands present in the Georgetown road network, and as a result the analysis was conducted using other available data to represent traffic flow. A detailed BLTS analysis is located in **Appendix 2: Current Conditions Analysis Supporting Maps**.

There are currently very limited on-street facilities for bicycles in Georgetown, and those existing facilities that can be used for cycling, such as shoulders and emergency lanes do not have signage to indicate bikes may be present. However, shoulders that are wider than five feet — wide enough to be considered a feasible cycling facility — provide more comfort than riding directly in mixed traffic.

In an effort to assign the classifications developed by Fruth to Georgetown streets, the following matrix was created to rate BLTS by street segment, shown below in Table 1.

Overall, the BLTS map in Figure 10 reveals that there are a number of streets with low BLTS scores of 1 and 2. These are shown in green, and are suitable for all ages and abilities to use. However, most of these areas eventually face connection barriers, either geographically (e.g. the river), by property (e.g. private property and/or fencing), or by major roadways. IH-35 is the most visible and prominent of these dividers. Downtown is generally highly comfortable to bike around, but crossings on along Austin Ave. and University Ave. break that level of comfort in several places. For the large number of residents who are interested in cycling but concerned with safety, these breaks in comfort can discourage biking.

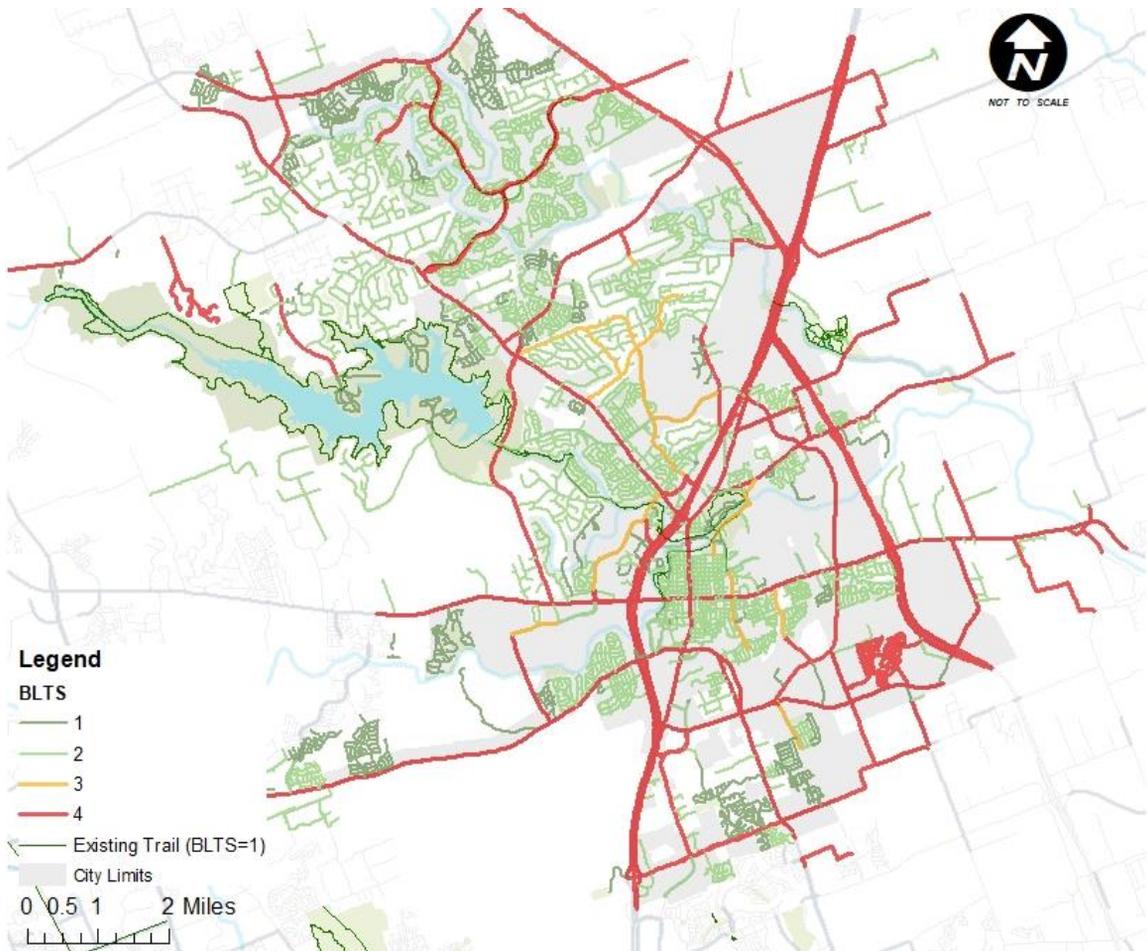
5 - Furth, P. (2012). Level of Traffic Stress. Retrieved from <http://www.northeastern.edu/peter.furth/criteria-for-level-of-traffic-stress/>.

## Current Conditions

*Table 1. BLTS Ratings Utilized to Grade Georgetown, TX*

BLTS Ratings	Undivided		2-3 lanes		4-5 lanes		6+ lanes	
	Yes	No	Yes	No	Yes	No	Yes	No
Up to 25mph	1	1	1	2	3	3	3	4
30 mph	1	2	2	3	3	4	4	4
35 mph	3	4	3	4	3	4	4	4
40+ mph	n/a	n/a	4	4	4	4	4	4

**Key:**



*Figure 10. Final BLTS Rating Map by Street Segment*

### 2.6 CRASH ANALYSIS

A crash analysis was conducted based on pedestrian crash data collected during the creation of the Georgetown Sidewalk Master Plan. Anecdotal data garnered from residents was also taken into consideration.

Available pedestrian crash data, provided by the Georgetown Police Department, identify crashes that occurred between 2011 and 2014, while locations of bicycle crashes were identified in October 2018 without a constrained time of occurrence. This data is consistent with safety concerns noted at the community workshop, with 25% of pedestrian crashes having occurred on University Ave., and 9% having occurred on Williams Dr<sup>6</sup>.

Many primary areas of safety concern have been identified for sidewalk improvements in the Georgetown Sidewalk Master Plan, and have been identified in this plan as critical locations for safe bicycling infrastructure.

Limitations of the data used include the fact that pedestrian crash data does not self-compile frequency of crash occurrences at a particular site, and it also does not include information regarding severity or causes of incidents. It is best practice to use police records or records from local hospitals that identify causes, severity, and the type of crash incident in crash analyses. To augment the bike crash data collected through public comment, Figure 11 displays the locations of crash incidents related to posted speed limits of roadways. **Appendix 2** zooms in to northwest and central Georgetown to evaluate locations of crash incidents in more detail. These two areas were chosen based on a concentrated amount of crash occurrences.

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6 - "City of Georgetown Sidewalk Master Plan." City of Georgetown Sidewalk Masterplan ArcGIS Map Journal, City of Georgetown, [georgetowntx.maps.arcgis.com/apps/MapJournal/index.html?appid=f8ab](http://georgetowntx.maps.arcgis.com/apps/MapJournal/index.html?appid=f8ab659f07944842b3919fde32023c7f)

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## Current Conditions

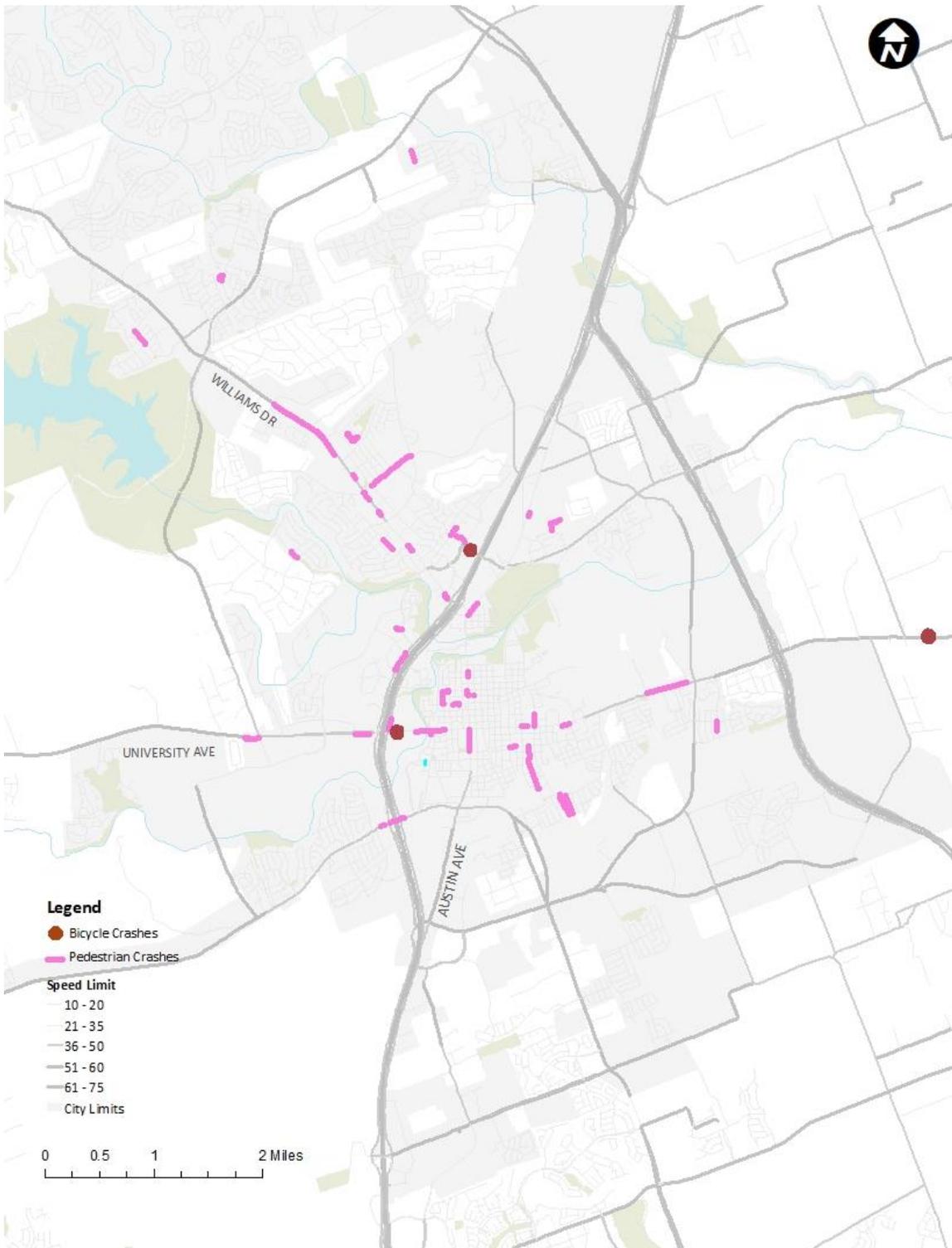


Figure 11. Bicycle and Pedestrian Crashes in Georgetown

### 2.7 SWOT ANALYSIS

Environmental audits and GIS mapping, combined with public feedback revealed many positive aspects about cycling in Georgetown, as well as a number of concerns and opportunities for improvement. To better examine the existing biking conditions, Georgetown's strengths, weaknesses, opportunities and threats to cycling were compiled to create a SWOT analysis. The items in this SWOT analysis were informed through a number of activities and resources noted below.



## Current Conditions

### SWOT SOURCE KEY:

Online survey	●
Intercept surveys	▲
Stakeholder meetings with city and county staff (2)	■
Community meeting	◆
Site visits/environmental audits	❖
Background research and analysis	◀

### 2.7.1 STRENGTHS

- Bicycling for recreation and/or exercise is very popular already, with nearly 87% of survey respondents indicating that they bike for these purposes. ●▲
- Active bike-share programs are present at the library, with 10 shared bikes, and Southwestern University, with roughly 100. ▲■◆❖◀
- The Downtown Historic District's grid street system enables connectivity within and around Downtown. ▲■◆❖◀
- An expansive recreational trail network already exists, which over 90% of survey respondents reporting use of. ●▲
- Relatively flat geography provides easy biking for many Georgetown residents, and only 2% of respondents identified that hills are a barrier to biking. ●▲
- An overwhelming majority of Georgetown residents understand the need for bicycle planning and infrastructure investment, and generally support initiatives to increase biking in Georgetown. ●▲◆
- There is a large population of potential bicycle users in Georgetown — 55% of residents self-identify as biking enthusiasts, and 30% self-identify as interested but concerned. ●▲◆

## Current Conditions

### 2.7.2 WEAKNESSES

- Georgetown residents have noted many perceived threats to personal safety that either prevent or reduce cycling. ● ▲ ◆ ■ ◀
- Most bike trips in Georgetown are not utilitarian — only 8% of people who do ride a bike in Georgetown bike to work — and there is not substantial opportunity to increase commuter bicycle trips as many Georgetown residents don't live very close to work. 91% of survey respondents live within the City of Georgetown while only 26% work in the City. ● ▲ ◆ ■ ◀
- Lack of infrastructure, such as bike lanes, prevents many current residents from biking — 80% of survey respondents claimed that lack of bicycle lanes is a barrier to biking; 77% of survey respondents stated that dedicated bicycle lanes would encourage them to bike more. ● ▲ ◆ ■ ✦ ◀
- Lack of wayfinding signage means vehicles are less aware of bicyclists on the road, and can make navigating the City on a bike difficult for out of town visitors. ● ▲ ◆ ✦ ◀



### 2.7.3 OPPORTUNITIES

- There is potential to increase the number of residents bicycling if bike routes become safer and better connected. ■ ◆ ❖ ◀
- Nearly 60% of survey respondents would be encouraged to cycle more with off-street bicycle trails. ● ▲ ◆
- Bike-share programs are currently utilized, and could be expanded to enable more residents to travel by bicycle. ■ ◀
- Many tourists visiting the City of Georgetown indicate that they enjoy bicycling on Georgetown's trails. The Sheraton Hotel offers bike rentals to their guests, and programs like this could be expanded. ■ ❖ ◀
- New residential developments around southeastern Georgetown provide a great opportunity to promote bicycle infrastructure and Safe Routes to School programming. ● ▲ ◆ ■ ❖ ◀
- Small infrastructure improvements will help tremendously, including informational signage such as "share the road," "cyclists here," etc. ◆ ❖ ◀
- Safe Routes to School (SRTS) initiatives are actively pursued by the City of Georgetown. ▲ ◆
- Parallel roadways create potential for a "shadow", or secondary low stress, bicycle network, which could provide safer options for residents to use. Examples include using Serenada Dr., which runs parallel to Northwest Blvd., and E. Esparada Dr. in lieu of busy Williams Dr. ▲ ■ ◆ ❖ ◀

## Current Conditions

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### 2.7.4 THREATS

- The rapid development pattern outside of Downtown does not lend itself to using bicycles for commuting purposes. ❖ ◀
- Many of Georgetown residents commute to other cities for work and do not have the option of biking to employment. ● ▲ ◆ ■ ◀
- There is potential of resistance to remove on-street parking to make room for bike lanes. ◆
- River crossings are expensive to build and are frequently affected by rain events. ■ ❖
- Many residents living west of IH-35 noted they cannot easily gain access to the east side of IH-35 by bicycle, and the proposed expansion of IH-35 could exacerbate this issue. ● ▲ ◆ ■ ❖ ◀

### *Overall Plan Goals*

*Derived from Public Input from Georgetown Residents*

**Safety:** Many residents identified personal safety as a major threat to biking in Georgetown. More people would be willing to bike if there were bike facilities that would offer protection from cars on the road. Residents were also concerned about lack of proper lighting, lack of signage, debris in bicycle lanes, lack of maintenance and vehicle speed limits being too high.

**Connectivity:** A lack of connections was identified as a major deterrent from biking. This includes major barriers such as IH-35 and busy corridors like Williams Dr. Some residents mentioned that missing connections between trails and streets creates the need to first drive to the trails in order to bike on them.

**Equity:** Residents expressed their interest in and support for increasing bicycling infrastructure around schools to encourage kids to bike to school. Residents also indicated that increased bicycling access would be a positive public health initiative for senior residents. Many residents expressed concerns regarding lack of neighborhood access to the trail system.

**Economy:** Economic development was a common topic in stakeholder meetings. Hotels in Georgetown stated that they provide bicycle rentals, which customers enjoy. Bicycling has the potential to become a tourist attractor for Georgetown that could bring new visitors to local businesses. Improved bicycle connectivity between Southwestern University and Downtown Georgetown would benefit both the students and staff and Downtown stores.

**Culture:** Residents of Georgetown are interested in creating a biking culture within the community by educating and supporting bicycling as a way of traveling.

### 2.8 POLICY ENVIRONMENT ASSESSMENT

This chapter includes an assessment of Georgetown’s current bicycle safety policy environment, evaluated through the lens of the “5Es” of traffic safety: engineering, encouragement, enforcement, education, and evaluation. Funding options for the proposed bicycle projects, shown in Chapter 3, are also identified.

#### 2.8.1 CURRENT “5ES” PRACTICES

##### Engineering

According to Georgetown’s Unified Development Code, “Bicycle facilities are required along Major Collectors and Arterials.”<sup>7</sup> New roadway improvement projects are required to allocate space for bikes in the form of a widened shoulder. This code assists in naturally building a more extensive bicycle network.

##### Education

Currently, there are no educational outreach efforts in the City of Georgetown. A Safe Routes to School grant was won in 2009; however, these funds were used for school zone safety engineering improvements rather than educational efforts.

##### Encouragement

Bicycles are available for rent at the Visitor Center and the Public Library. By providing access to bikes for those who may not own one personally, this type of program encourages and enables everyday citizens to explore the city by bike.



*Figure 12. Georgetown Bike Share Bicycles*

Southwestern University has a program called Pirate Bike, which provides shared bikes for students to use on campus, and it even received an award in 2009 for its Pirate Bike Appreciation Week<sup>8</sup>. Additionally, some local hotels rent out bikes for their guests, enabling tourists to explore the city by bicycle. Expanding programs like these can help encourage cycling across Georgetown.

7 - Georgetown’s Unified Development Code, Section 12.07 – Pedestrian and Bicycle Mobility, C. On-Street Bicycle Lanes.

8 - <https://www.southwestern.edu/live/news/2462-pirate-bike-appreciation-week-2-garners-award/live/calendar>

### Enforcement

Currently the operation of bicycles in Georgetown is primarily regulated under Section 10.04.045 of the Georgetown Municipal Code. An extensive discussion of the Municipal Code is beyond the scope of this plan, however, the following sections of the code are notable:

- *“It shall be unlawful for a person to operate a golf cart, neighborhood electric vehicle, pocket bike or mini motorbike, or moped on a path designated for the exclusive operation of bicycles”*

This section does not prohibit the operation of an electric bicycle, motor assisted scooter, or personal assistive mobility devices on a path designated for the exclusive operation of bicycles.

- *“Additional rules applicable to operation by a child. It shall be unlawful for a child to operate a moped, electric bicycle, or neighborhood electric vehicle on any public street or highway as follows: After daytime hours; or At any time where the posted speed limit is more than 30 miles per hour.”*
- *“It shall be unlawful for any child to operate or ride a moped, electric bicycle, or neighborhood electric vehicle on a public street or highway at any time unless the child is wearing a helmet...It shall be unlawful for a parent to knowingly or unknowingly allow or permit a child to operate or ride a moped, electric bicycle, or neighborhood electric vehicle on a public street or highway at any time unless the child is wearing a helmet.”*

- *“It shall be unlawful for any person to violate any provision of this Section, and any person violating or failing to comply with any provision of this ordinance shall be fined, upon conviction, not less than \$1.00 nor more than \$500.00, and a separate offense shall be deemed committed upon each day during or on which a violation occurs or continue.”*

Bicycling law enforcement under Texas state law comes from the Texas Transportation Code. Notable excerpts are as follows:

- *“A person operating a bicycle has the rights and duties applicable to a driver operating a vehicle (551.101).”*
- *“A person operating a bicycle on a roadway who is moving slower than the other traffic on the roadway shall ride as near as practicable to the right curb or edge of the roadway (551.103).”*
- *“A person may not operate a bicycle unless the bicycle is equipped with a brake capable of making a braked wheel skid on dry, level, clean pavement.”*
- *“A person may not operate a bicycle at nighttime unless the bicycle is equipped with: A lamp on the front of the bicycle that emits a white light visible from a distance of a least 500 feet in front of the bicycle; and On the rear of the bicycle: A red reflector.”*

All of the above statutes could be acted upon by law enforcement today should they be violated. Changes concerning enforcement activities will be discussed in Chapter 4.

### Evaluation

The City of Georgetown does not currently evaluate its existing bicycle network. Evaluation mechanisms are necessary to implement a successful bicycle plan.

### 2.8.2 FUNDING CONSTRAINTS AND OPPORTUNITIES

Federal, state, and local programs cover many different road improvements targeted toward safety for bike riders and pedestrians. Funding programs provided through TxDOT, CAMPO, and bonding are options to help Georgetown expand its bike network. The cost of bike infrastructure may require Georgetown to seek out additional funding sources, such as the State of Texas Parks and Wildlife Department, and national organizations such as People for Bikes and the American League of Cyclists. These organizations can provide a diverse funding profile as the City works to find the financial support to implement each recommended bike project.

### Federal Funding

*Fast Act (Fixing America's Surface Transportation Act)*

The FAST Act authorizes \$305 billion over fiscal years 2016 through 2020 for highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs<sup>9</sup>.

9 - <https://www.fhwa.dot.gov/fastact/funding.cfm>

10 - <https://www.transportation.gov/BUILDgrants>

*Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grants Program*

This program supports a variety of projects such as pedestrian and bicycling facilities. Congress has dedicated more than \$4.6 billion to the program. Projects funded must improve the quality of life, support economic development, and provide environmental benefits<sup>10</sup>.

### State Funding

*Transportation Alternatives (TA)*

This program provides a flexible funding program that supports highway, bridge, transit, pedestrian, and bicycle infrastructure. These funds are available for a variety of smaller transportation projects such as:

- Pedestrian and bicycle facilities, recreational trails, and Safe Routes to School projects
- Trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation that can be on or off the road
- Sidewalks, pedestrian/bicycle signals, calming traffic techniques, lighting, and other safety-related infrastructure
- Rails-to-trails projects, and
- Planning and construction of boulevards within the right-of-way of former interstates or other divided highways<sup>11</sup>.

11 - <https://www.txdot.gov/inside-txdot/division/public-transportation/bicycle-pedestrian.html>

### Regional Initiatives

#### *CAMPO - Transportation Improvement Program*

Through its 2045 Transportation Improvement Plan, Georgetown has been awarded funding to make improvements to major street sections, including bicycle facilities. This tool allows for non-federal sections of a project's cost to be met through a soft match. Transportation Development Credits create flexibility in state and local transit programs by providing the ability to shift funds to other transportation-related expenses<sup>12</sup>.

#### *Recreational Trails Program*

This Texas Parks and Wildlife Department program funds projects that are recreational in nature. Funding can be used to build new trails on public or private lands, repair existing facilities and/or upgrade them to meet guidelines established by the Americans with Disabilities Act of 1990.

Funding can also help acquire easements or land for trails, install educational signage, construct trailside or trailhead facilities that include signage, parking areas, restrooms, benches, picnic tables, bicycle racks, and fencing<sup>13</sup>.

#### *Highway Safety Improvement Program (HSIP)*

The Texas HSIP identifies bicyclists and pedestrians as roadway system users that warrant special protection. Eligible improvements may include:

- Intersection improvements
- Shoulder widening
- Installation of rumble strips
- Improvements at railroad crossings
- Traffic calming techniques
- Improvements that increase the safety of pedestrians, bicyclists, and those with disabilities
- Comprehensive Safe Routes to School program<sup>14</sup>

12 - <https://www.campotexas.org/funding-opportunities/>

13 - <https://tpwd.texas.gov/business/grants/recreation-grants/recreational-trails-grants>

14 - <http://ftp.dot.state.tx.us/pub/txdot-info/library/pubs/gov/shsp.pdf>

### Local-level Initiatives

Voters may authorize local governments (including school districts) to sell bonds to fund capital improvements, including pedestrian and bicycle facilities. Bonds are similar to loans and other financing mechanisms; local governments gradually pay investors back for the money borrowed. Developer-funded facilities can help local planning agencies by providing bike infrastructure. Volunteers are also a great way to maintain bike facilities, therefore lowering maintenance cost. Businesses may be encouraged to provide funding or volunteers to help support construction costs and maintenance efforts.

Unlike other states, such as California and Colorado, Texas has no dedicated funding for bike lanes. This lack of funding encourages cities to establish their own funding sources, or to go through a process in which they submit specific proposals to TxDOT. State-level funding will likely not cover the costs of the City of Georgetown's bike plan implementation, but the opportunities listed above are independent of state decisions and can be approved locally. Another local option is adding bike lane striping when streets are resurfaced – a low cost and effective way to implement facilities.

### 2.9 CURRENT CONDITIONS CONCLUSIONS AND RECOMMENDATIONS

It is recommended that the City of Georgetown Police Department begin recording information regarding crash severity and causes, as well as types of vehicles involved for future safety management and oversight during Bicycle Master Plan implementation.

Tracking this information for future crash analyses will help fine tune recommendations for specific improvement locations, and will increase the ability of Georgetown's Planning and Public Works Departments to report on impacts of new bike infrastructure over time.

Tracking this information for future crash analyses will help fine tune recommendations for specific improvement locations, and will increase the ability of Georgetown's Planning and Public Works Departments to report on impacts of new bike infrastructure over time.

The Georgetown City Council should prioritize alignment of policy and educational programs with infrastructure engineering and design in order to further emphasize safety in all initiatives, even beyond the Bicycle Master Plan.

Recommendations in the Bicycle Master Plan should be aligned with those from the Sidewalk Master Plan to encourage active transportation. There should be a critical focus on specific safety improvements during roadway design and intersection re-engineering to accommodate pedestrians and bicycle riders.

The City of Georgetown should initiate a joint database and reporting structure with Williamson County, Capital Area Metropolitan Planning Organization, and the Texas Department of Transportation for integrated crash data analysis.

# Chapter 3: Recommendations

## 3.1 VISION, GOALS AND OBJECTIVES

### Vision Statement

Georgetown will have a safe, well-connected bicycle network that is accessible to all ages, abilities, and backgrounds; supports the local economy; and improves the experience of everyone biking in the community.

This well-maintained bicycle infrastructure will enhance access to jobs, schools, shops, parks, and public services. The bicycle system will be fully integrated with transit and other modes of transportation, as well as regional and state trail networks. It will attract visitors to the historic and scenic Georgetown, supporting the local economy and enhancing the

vibrancy of Downtown.

By promoting bicycling as a form of transportation and educating bike riders, as well as drivers, on how to share the road safely, it will become an integral part of Georgetown's daily activities, enriching the quality of life for all citizens.



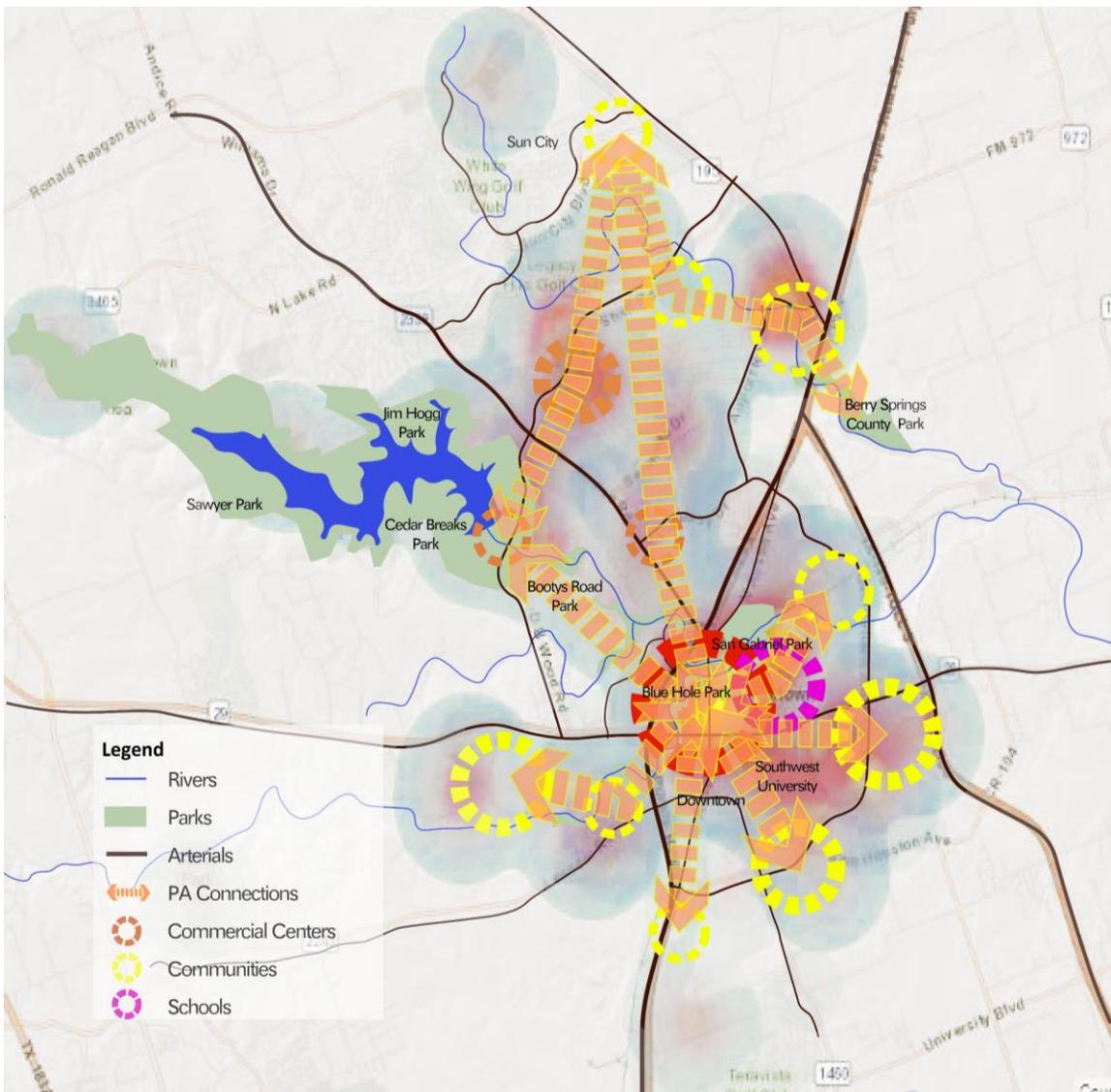
*Georgetown residents in community workshop providing feedback to draft bicycle plan*

## Recommendations

Goals	Objectives
<p><i>Promote safety</i> for cycling on-and off-road</p>	<ul style="list-style-type: none"> <li>• Prioritize bike paths that minimize conflicts with vehicle traffic.</li> <li>• Design intersections that prioritize protected bicycle and pedestrian crossings.</li> <li>• Increase awareness of and respect for bicycle riders through education and enforcement.</li> </ul>
<p><i>Develop connectivity</i> across the city to provide access to popular destinations</p>	<ul style="list-style-type: none"> <li>• Design and build bicycle corridors that connect residential areas with the city center and major destinations.</li> <li>• Integrate with regional trails and bicycle networks.</li> <li>• Overcome barriers at critical crossing points to provide east-west and north-south connectivity across the city.</li> </ul>
<p><i>Enhance equity</i> in bike access</p>	<ul style="list-style-type: none"> <li>• Balance the needs and interests of cycling groups and the general public.</li> <li>• Improve bicycle and pedestrian access around schools.</li> <li>• Build flat paths where possible to accommodate users of all abilities.</li> <li>• Expand transportation choices in underserved areas through bicycle infrastructure and connections to public transportation through first and last mile bicycle connections.</li> </ul>
<p><i>Support the economy</i> through bicycling</p>	<ul style="list-style-type: none"> <li>• Implement bike and pedestrian-oriented urban design to increase transportation options to downtown businesses.</li> <li>• Promote bicycle tourism by fostering partnership between public agencies, private business, and non-profit organizations.</li> <li>• Ensure that commercial destinations have adequate bicycle parking.</li> <li>• Attract bicycle-oriented business.</li> </ul>
<p><i>Foster a bicycle friendly culture</i></p>	<ul style="list-style-type: none"> <li>• Educate residents about proper bicycling behaviors for bicyclists, drivers, and pedestrians.</li> <li>• Provide bicycle network maps and install wayfinding signage.</li> <li>• Pursue a Bicycle Friendly Community Designation.</li> <li>• Promote cycling as an easy, inexpensive way to enhance public health.</li> </ul>

### 3.2 PROPOSED BICYCLE SYSTEM

The Plan Vision, Goals, and Objectives guide the bicycle network planning and design. Figure 13 below illustrates the Plan's spatial concept. The heat map was generated from GIS analysis of spatial patterns of land use intensity and activity concentration. The planned bicycle system aims to best serve the residents by matching the bicycle network with the spatial activity pattern.



*Figure 13. Proposed Network Concept Map*

## Recommendations

Figure 14 displays the proposed bicycle system for Georgetown. The essential elements of the proposed bicycle system can be characterized by the “5-4-3-2-1” framework:

<p><b>5</b> types of bicycle infrastructure</p>	<p>It is not feasible nor economical to provide bicycle treatment on all streets, roadways, and intersections. The Plan proposes <i>five types of common bicycle treatments</i>: off-street path, physically protected bike lane, buffered bike lane, striped bike lane, and sharrow. Application of each type should be based on the assessment of system needs and local conditions.</p>
<p><b>4</b> sets of critical connections</p>	<p>The Plan proposes improvement to <i>four sets of critical connections</i> in order to overcome the identified bicycling barriers. The first set includes four bicycle crossing points along I-35 to improve east-west biking connectivity. The second set includes three crossing points along San Gabriel River to improve north-south connectivity in northern Georgetown. The third set includes three crossing points along University Ave. The fourth set connects Sun City to Overlook Park and Downtown while minimizing conflicts with Williams Dr.</p>
<p><b>3</b> closed bicycle loops</p>	<p>Upon completion of the four sets of critical connections, the Plan presents <i>three closed bicycle loops</i> to serve the whole of Georgetown.</p> <ul style="list-style-type: none"> <li>• Loop 1: Central Georgetown components San Gabriel bike trail to the north and west, Maple St. and Holly St. to the east, 15<sup>th</sup> and 16<sup>th</sup> St. to the south</li> <li>• Loop 2: Southern Georgetown components San Gabriel bike trail to the north, Inner Loop to the east, 21<sup>st</sup> St. to the south, Wolf Ranch Pkwy. to the west</li> <li>• Loop 3: Northern Georgetown components San Gabriel bike trail network to the west and south, trails in Berry Springs Park to the east, Shell Rd. to the north</li> </ul>
<p><b>2</b> corridors in central Georgetown</p>	<p><i>Two corridors</i> connect the three bicycle loops described above. They form a secondary low stress network that minimizes conflicts with Austin Ave. and 7<sup>th</sup> St., which carry large volumes of vehicular traffic. The north-south corridor follows Main St. and the east-west corridor is along 8<sup>th</sup> St. They intersect at the Square, Georgetown’s historic center.</p>
<p><b>1</b> central core</p>	<p><i>The Square</i> is the vibrant, people-centered focal point of Georgetown. The Plan aims to enhance connectivity between the Square and the rest of the city, building off of existing roads and integrating with park paths.</p>



## Recommendations

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The proposed system network (Figure 14) displays connections and type of treatment. Different treatment types provide varying levels of infrastructure safety and bicyclist travel stress.

Green lines represent off-street paths, on which bikes have their own right-of-way constructed adjacent to or in parallel with the roadway, or along a trail system. Red, pink, and yellow solid lines represent the varying scales of bike lanes (conventional, buffered,

and physically protected), which will be described in detail in Section 3.5 Recommended Treatments for Various Street Types.

Finally, dashed red lines represent a “sharrow” treatment in which pavement markings and signage indicate that motor vehicles are to share the roadway with bicycles. Sharrows are only proposed along low-speed, residential roadways. Overall, the proposed system creates a cohesive network that can be traversed and utilized by residents and visitors of Georgetown of all ages and abilities.

## Recommendations

Currently, the city features approximately 32 miles of off-street trails and just over three miles of conventional bike lanes along the newly paved configurations of Rivery Dr. and Wolf Ranch Pkwy. Over 50 miles of cycling facilities are proposed in this plan, amounting to a grand total of 86 miles of interconnected, high-comfort bikeways throughout the City of Georgetown. Treatment types and proposed lengths are outlined below.

*Table 2. Mileage of Existing and Proposed Bicycle Facilities by Type*

Treatment Type	Length (Miles)		
	<i>Existing</i>	<i>Proposed</i>	<i>Total</i>
Sharrow	0.00	7.45	7.45
Bike Lane	3.24	9.84	13.08
Bike Lane - Buffered	0.00	3.95	3.95
Protected Bike Lane	0.00	10.83	10.83
Off-Street Path	32.41	19.07	51.48
Total:	35.64	51.14	86.79

Wayfinding signage is recommended along the full bicycle network to help bike riders locate the nearest cycling infrastructure. As mentioned previously, this plan recommends implementation of a secondary low stress network, with bike lanes running on streets parallel to high-speed roads. Bicyclists will need clear signage to direct them toward these intended routes, as they otherwise may

not realize bike lanes are available and will unknowingly choose a less comfortable path. Wayfinding signage should be installed per NACTO guidelines, with decision making signs directing users toward major destinations at key intersections, and signs confirming the biker is traveling the correct route every  $\frac{1}{4}$  to  $\frac{1}{2}$  mile<sup>15</sup>.

15 - <https://nacto.org/publication/urban-bikeway-design-guide/bikeway-signing-marking/bike-route-wayfinding-signage-and-markings-system/>

### 3.3 PROPOSED PLANS FOR FOCAL AREAS

Detailed examples for the highest priority nodal connections and detailed recommendations for selected sites, such as the Square and schools, are below. Larger maps of the proposed network and specific sections of the city can be found in **Appendix 10: Bicycle Network and Complete List of Improvement Projects**.

#### **Connections to Downtown**

Proposed improvements focus on enabling residents to comfortably access Downtown by bicycle from any neighborhood. Connections from the north end of Downtown across the San Gabriel River are critical — the planned Austin Ave. bicycle and pedestrian bridge will provide one such crossing, and two other areas with consistent flooding issues have been identified as highly important. Other proposed connection points to Downtown include the west San Gabriel River trail, and access from southeast Georgetown neighborhoods. Primary bicycle corridors identified in Downtown Georgetown include:

- Main St.
- Maple St.
- 8th St.
- 21st St.
- Quail Valley Dr.

Several secondary bicycle corridors have been identified to support the proposed primary corridors, including:

- 4th St.
- 15/16th St.
- College St.

The organization of Downtown bicycle corridors was developed with the goal of keeping bike riders off of high-speed and high-volume roads. The implementation of this secondary low stress network will allow bikers of all ages and abilities to access Downtown for recreation or for business.

#### **Connections in Northwest Georgetown**

Northwest Georgetown, particularly the Sun City area, has a heavily involved cycling community that has expressed interest in safe access to Overlook Park and Downtown. In response, a combination of off-street paths along arterial roadways, and bike lanes or sharrows along quieter neighborhood streets are proposed. This will help connect to the park system, schools off of Shell Rd., and Northwest Blvd. entering the Downtown core.

## Recommendations

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### **Connections in Northeast Georgetown**

The Northeast quadrant of Georgetown features an off-street trail system within Berry Springs Park, which terminates shortly after crossing underneath IH-35 to the west. Based on community feedback, the extension of this off-street trail to the Berry Springs neighborhood along Airport Dr. is proposed. Additionally, the Parks Department has long-term plans to connect an existing trail in the river basin to an extension of the San Gabriel River trail system. Much of this loop is located outside of Georgetown city limits and will require coordination with Williamson County.

### **Connections to Southern Georgetown**

East-west connections along 15th/16th Streets, 21st Street/Quail Valley Rd., and Inner Loop are recommended. Proposed north-south connections include Maple St., Main St. and Scenic Dr. Secondary north-south corridors will be along College Ave. and Church St. Many of these roadways are quiet, neighborhood streets where low bicycle stress levels can be achieved with implementation of conventional bike lanes. In other cases, some connections will require off-street paths.

Southwest Georgetown is currently disconnected from the rest of the city by natural or topographical features including the San Gabriel River Basin, and by man-made barriers such as the rock quarry and IH-35.

This plan proposes an off-street trail connection underneath IH-35 near St. David's Medical Center, which will connect the San Gabriel Overlook neighborhood to central Georgetown. Proposed routes also run across Leander Rd., connecting this neighborhood to Tippet Middle School and Pickett Elementary School

### **Connections to Schools**

Extension of the existing Safe Routes to School off-street path which connects Wagner Middle School and Mitchell Elementary School to the Churchill Farms neighborhood is recommended. This route would extend to East View High School along the south side of SR-29, and north along NE Inner Loop to the future San Gabriel River trail. It would ultimately reach Forbes Middle School and Cooper Elementary School. Development is expanding along this stretch of roadway, and it is important to ensure that new off-street paths will provide a variety of safe and sustainable transportation options.

### **Connecting New Development**

As neighborhoods and subdivisions continue to develop, the proposed system will enable bicyclists to cross the river and use off-street paths to access Downtown.

## Recommendations

### 3.3.1 DETAILED RECOMMENDATIONS FOR CRITICAL NODES/INTERSECTIONS

In stakeholder meetings, officials from the Georgetown Independent School District (GISD) voiced concerns about school kids crossing the 130-toll road to get to East View High School. Field

studies determined that there are no sidewalks or bikeways on the Toll 130 overpass. Recommended off-street bike paths that will provide safe crossing are shown below in Figure 15.



*Figure 15. East View High School Safe Crossing*

Mitchell Elementary and George Wagner Middle School are located on Rockride Lane, a two-lane road with speed limit of 50mph, which is not suitable for on-street bike facilities. There are off-street bike lanes from the schools to SR 29 along SE Inner Loop.

Currently, the schools are separated from the nearby Saddle Creek neighborhood. Creating a passage between the schools and Saddle Creek Neighborhood is recommended as shown below in Figure 16.



*Figure 16. Mitchell Elementary and George Wagner Middle School*

## Recommendations

In stakeholder meetings, officials from the Georgetown Independent School District (GISD) voiced concerns about school kids crossing the 130-toll road to get to East View High School. Field

studies determined that there are no sidewalks or bikeways on the Toll 130 overpass. Recommended off-street bike paths that will provide safe crossing are shown below in Figure 17.



*Figure 17. Georgetown and Chip Richarte High Schools*

### 3.4 PHASING AND TIMELINE

This section contains recommended actions to implement the bicycle network in Georgetown. It serves as a guide to help City staff and City Council make decisions in prioritizing and implementing bike projects over the next five to 15 years, and should be evaluated on an annual basis to ensure the progression of this plan.

It is recommended that the bike master plan be implemented in two tiers. Tier 1 addresses “easy wins” — high impact projects with low capital requirements — including painting sharrows and posting wayfinding signs throughout the city. Tier 1 also includes the Top Ten projects identified in 3.4.1 Top 10 Priority Projects below.

Tier 2 includes striping conventional and buffered lanes on newly developed streets, and streets scheduled for upgrades in the future as identified by the Public Works Department. Tier 2 also incorporates large, high cost projects, such as significant intersection connections, bridge connections, and protected bicycle lanes.

The Top Ten recommendations for build-out over the next five to 10 years can be found in Table 3 below.

Bond issuance is the preferred funding method for the City of Georgetown, which will require City staff to strategically time the implementation tiers with the issuance of bond packages. Additional funding options are identified in **2.8.2 Funding Constraints and Opportunities** which may allow the City to implement the bicycle network at a faster pace.

#### **3.4.1 TOP 10 PRIORITY PROJECTS**

Figure 18 provides a visual representation of the geographic distribution of Tier 1 projects. A brief description of each of the Top 10 projects is described below in Table 3.

Estimated costs do not include removal of existing roadway striping, or extensive infrastructure improvements, such as bridges. They only include bicycle-specific materials and actions such as lane striping.

## Recommendations

*Table 3. Top 10 Priority Projects Descriptions*

Rank	Project Name	Cost	Length (Miles)	Status	Description
1	Austin Ave. Bridge	\$\$\$\$	0.49	Planned (approved by Council)	Off-street path connecting across San Gabriel River that will enable bicyclists to safely travel north-south in central Georgetown and connect to the Northwest Blvd. Bridge project
2	8th St: Scenic Dr. trail Connection to Maple St.	\$\$\$\$	1.04	Proposed	Bicycle corridor along 8th St. through Downtown connecting the San Gabriel River Trail, Georgetown Library, City Hall, the Square, and Maple St.
3	Main St: Buffered bike lane from 2nd St. to 21st St.	\$\$\$\$	1.20	Proposed	Bicycle corridor connecting cyclists to central and southern Georgetown as part of the secondary low stress network recommendation to divert cyclists off of Austin Ave.
4	Holly Street Bridge	\$	0.14	Planned (unfunded)	Connection across San Gabriel River from Holly St. to the North San Gabriel River Trail providing a higher crossing for increased resilience in heavy storms
5	Maple St. Phase 1: 7th St. to Britannia St.	\$\$\$\$	1.14	Proposed	North-south route through central Georgetown to Southwestern University that incorporates a combination of off-street paths and protected bicycle lanes, including a safe connection across University Blvd.
6	Northwest Blvd./ IH-35 Crossing Phase 1: Rivery Dr. to FM-971	\$\$\$\$	1.08	Planned and funded	Primary connection for cyclists across IH-35 which the City of Georgetown and TxDOT have existing plans for, including bike facilities
7	San Gabriel River Crossing at St. David's Hospital: Scenic Dr. to Wolf Ranch Town Center	\$\$\$\$	0.91	Proposed	Connection point across IH-35 allowing residents in south and southwest Georgetown to connect to the San Gabriel River Trail, Wolf Ranch Town Center, and the Square
8	Williams Dr: Del Webb Blvd. to Gatlin Creek	\$\$\$\$	0.45	Proposed	Off-street path providing safe cyclist access to commercial spaces in west, central and southern Georgetown through the existing parks and trails network
9	DB Wood Rd: Wildwood Dr. to Overlook Park along Williams Dr. & DB Wood Rd.	\$\$\$\$	0.74	Proposed	Critical connection from northwestern neighborhoods to the existing trail network providing an alternative to riding on arterials
10	SR-29 East View HS connection across SR 130: Reinhardt Blvd. to Eastview Dr.	\$\$\$\$	1.26	Proposed	Critical safety connection giving students and faculty access to East View High School across SR-29

**KEY:** \$ - Under 10k    \$\$ - 10 to 50k    \$\$\$ - 50 to 100k    \$\$\$\$ - 100 to 500k    \$\$\$\$\$ - Over 500k

# Recommendations

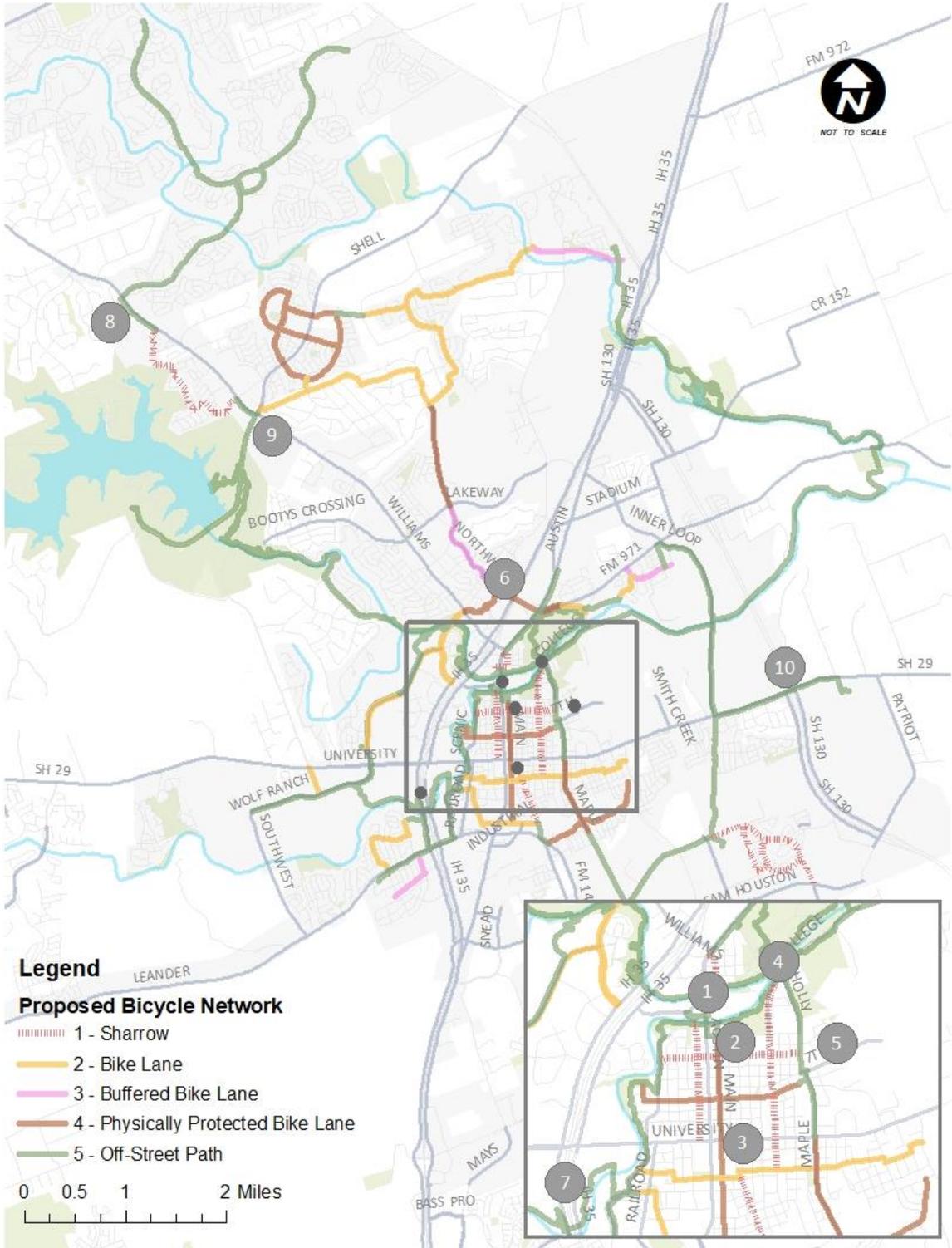


Figure 18. Top 10 Priority Projects

## Recommendations

### Project Prioritization and Timeline

Projects were prioritized based on two metrics: cost and benefits. In the chart below, low-cost high-benefit projects are in the top right quadrant, and the high-cost high-benefit projects are in the top left quadrant. Top 10 projects are located in the top half of the chart. Aside from cost and benefit concerns, safety was used as a vital indicator in choosing priority projects. The prioritized projects are mapped below in Figure 20.



Figure 19: Project Prioritization

# Recommendations

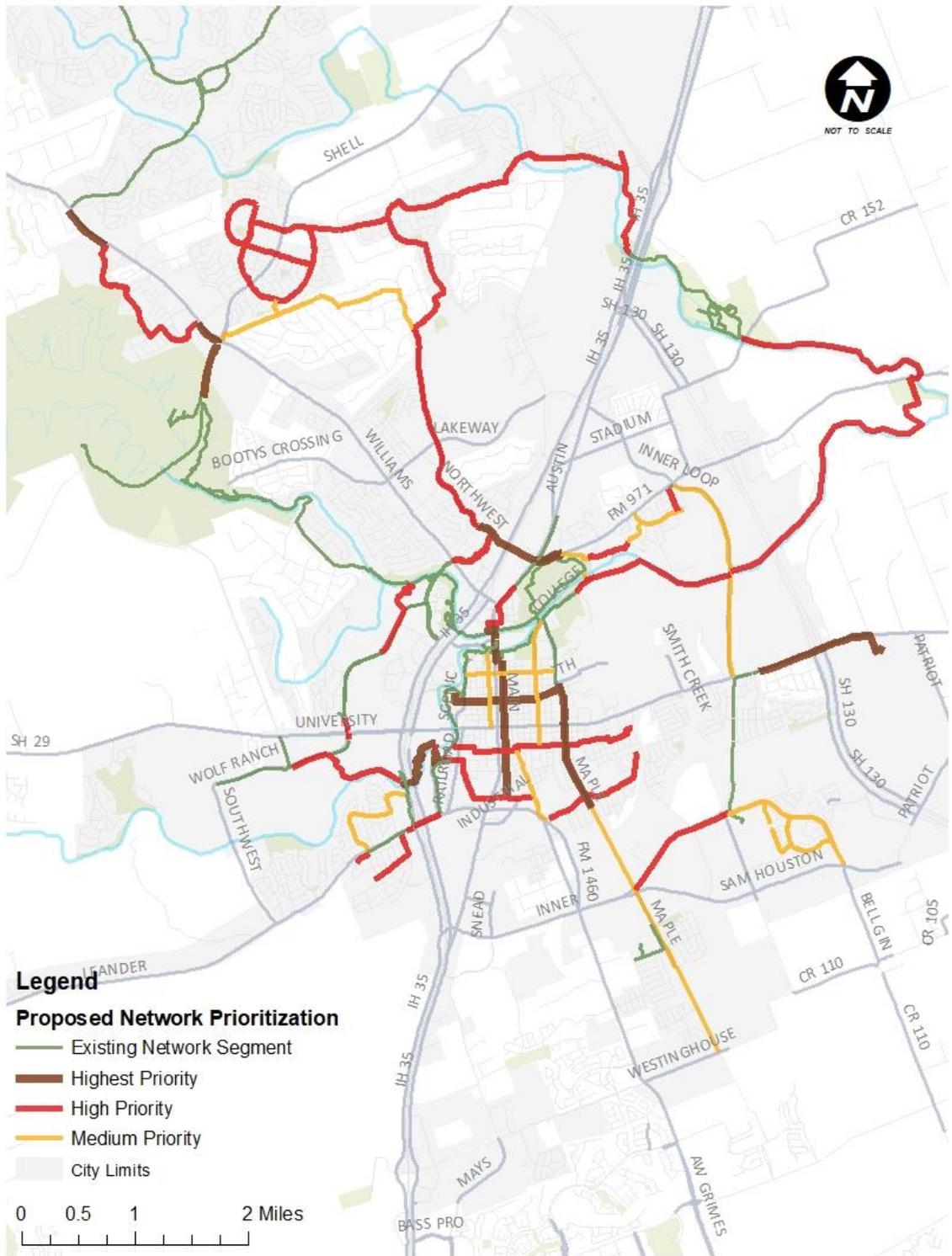


Figure 20. Complete List of Prioritized Projects

### 3.5 RECOMMENDED TREATMENTS FOR VARIOUS STREET TYPES

#### 3.5.1 MAJOR ARTERIAL – INNER LOOP

Major arterials in Georgetown experience Average Daily Traffic counts of approximately 12,500 to 24,000 vehicles, and speed limits between 40 and 55mph. The treatment recommended for roads fitting these criteria is an off-street cycle track, similar to the one present on a portion of Inner Loop (as pictured in Figure 21). This is in line with the Georgetown UDC, which also recommends off-street bike facilities for any new or resurfaced road with speeds over 40mph.

#### 3.5.2 MINOR ARTERIALS-NORTHWEST BOULEVARD

Minor arterials in Georgetown, such as Northwest Boulevard, have Average Daily Traffic counts of 12,000 to 24,000 cars, and speed limits of approximately 30 mph. Figure 22 shows Northwest Boulevard with various treatments added. The first image shows the current conditions of the road, the second depicts a buffered bike lane treatment, and the final image shows a conventional bike lane treatment.

For this type of road, buffered bike lanes are recommended in areas with a high volume of street parking. Buffered bike lanes allow cyclists to maneuver around parked vehicles without venturing into general purpose lanes. If street parking is not allowed or is rarely used, conventional bike striping on the existing road will suffice.



*Figure 21. Current Conditions on SE Inner Loop*

Specific requirements for buffered bike lanes and conventional bike lanes are as follows:

#### **Conventional Bike Lanes**

- Solid white lines should be 6 to 8 inches wide.
- Whenever possible, give more space to the bike rider and widen the bike lane.
- Bicycle symbols and markings are required by the Manual on Uniform Traffic Control Devices (MUTCD).
- Lane width should be 6 feet if next to a curbside and should not be less than 4 feet if adjacent to parking.

#### **Buffered Bike Lanes**

- The buffer should be marked with two solid white lines, 6 to 8 inches wide.
- Hatching between the two white lines is required if they are separated by 3 or more feet.
- Hatched lines should be painted at 30 to 45-degree angles and over an interval of 10 to 40 feet.
- The minimum width for buffered bike lanes is 7 feet.

## Recommendations

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Before treatment



After treatment (Option 1)



After treatment (Option 2)

*Figure 22. Before and After Treatments on Northwest Boulevard*

## Recommendations



Before treatment



After treatment

*Figure 23. Local Street Before and After Treatment*

### **3.5.3 LOCAL STREET/COLLECTOR - 8TH STREET**

Local streets in Georgetown are wide, low-speed roads that do not experience heavy traffic. Because of these conditions, these local roads can be treated with sharrows and bike signage. Sharrows and signs can cost between \$250 and \$400 apiece, and are

considered low-cost project that yield effective results. These treatments are recommended as a first step in this plan, in order to gain public support for larger projects that will require greater investments. Figure 23 above depicts a before and after treatment on 8th St. near the Georgetown Public Library.

## Recommendations



*Figure 24. Holly/College St. Crossing to Bridge and Trail*

The transition from one type of bike treatment to another requires special consideration. The intersection of Holly St. and College St., for example, will require a transition from a local street sharrow to an arterial bike lane. Figure 24 shows that there should be a seamless transition for bicyclists.

## Recommendations

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### **3.5.4 8TH STREET CYCLE-TRACK**

Georgetown should work long-term projects into its bicycle plan. For example, a cycle track in Downtown could be added by removing parking on the outer side of the street. Figure 25 shows a before and after example of what this treatment. This project should be implemented in phases:

*Phase 1:* Remove right-side parking on one of the streets on the Square.

*Phase 2:* Fill in and expand the existing sidewalk, giving the space to pedestrians first.

*Phase 3:* Once foot traffic builds, repurpose the extra space from removed parking as a cycle track.

This is a project that Georgetown can strive toward in the next five to ten years. There is potential for public push back to the removal of parking spaces, however, because of the high volume of cars coming into Downtown, the City has already considered disincentivizing driving by removing parking on the Square. If public sentiment at the time of implementation is that the City should make room for pedestrians and bike riders while maintaining parking options, a parking garage could be constructed nearby.

## Recommendations



Before treatment



After treatment

*Figure 25. Current Conditions and Potential Cycle Track in Downtown Georgetown*

## Recommendations

### 3.5.5 INTERSECTION TREATMENT - MAPLE AND UNIVERSITY

There are many different intersection treatment options for intersections in

the City of Georgetown. One simple solution is pictured below in Figure 26, marking clear paths for bicycles and using color to alert motorists.



Before treatment



After treatment

*Figure 26. Before and After Intersection Treatment of Maple St. and University Ave.*

### 3.6 BIKE PARKING AND BIKE SHARE RECOMMENDATIONS

The recommended expansion of bicycling infrastructure is expected to increase cycling in Georgetown overall, and therefore expand demand for secure bike parking.

In order to determine priority areas for installation of parking facilities, a full bicycle parking suitability analysis has been conducted (see **Appendix 12: Bicycle Parking Suitability Analysis** for details). The results of the analysis indicate that Southwestern University, commercial areas of Downtown, the library, the Square, Blue Hole Park, and the Sun City Texas Community Association should be top priority areas for additions (see Figure 27 and Figure 28 below).

Currently, the Georgetown Unified Development Code does not offer any requirements or guidance for the addition of off-street bicycle parking and should be amended to do so. For example, the City of Austin's Bicycle Advisory Council recently passed a recommendation that the City amend its land development code's bicycle

parking minimums to align with the goals set forth in the Imagine Austin Comprehensive Plan and the Austin Bicycle Master Plan. This requires all new developments to provide 5-15% of the building's maximum fire code person capacity in bicycle parking spaces<sup>16</sup>.

The City should pursue partnerships with existing business owners, Southwestern University and transit providers to expand bicycle parking facilities around Georgetown. Business owners would benefit from attraction of more regular, frequent customers and tourists, as well as from discouraging illegal parking practices such as chaining bikes to trees, street furniture or utility poles that can detract from the atmosphere of the business district.

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16 - 5% represents the citywide mode choice goal and 15% represents the central city area mode choice goal for bicycling according to the Austin Bicycle Master Plan & Imagine Austin Comprehensive Plan.

17 - American Public Transit Association. (2018). Bicycle and Transit Integration: A Practical Transit Agency Guide to Bicycle Integration and Equitable Mobility (Recommended Practice No. SUDS-UD-RP-009-18). Washington, DC. Retrieved from <https://www.apta.com/resources/standards/Documents/APTA%20SUDS-UD-RP-009-18.pdf>

## Recommendations

The University has a limited supply of car parking facilities, and could benefit by converting some car trips to campus to bike trips, reducing the need to expand vehicle parking. It is also a notable benefit that bike parking spaces cost much less than vehicle parking spots, and could provide a cost savings benefit. Bicycle parking facilities should be provided adjacent to bus stops to help accommodate first and last mile connections to transit, especially since each bus has space to carry only two bicycles.

Together, bicycling and transit can offer users more mobility options than either are able to individually, and according to the American Public Transit Association's Bicycle/Transit Integration Best Practices Guide, lack of secure parking at transit stops "will discourage and preclude potential riders."<sup>17</sup> In order to determine how many bicycle parking spaces to provide at each stop, the City should set a quantitative threshold based on peak transit ridership.

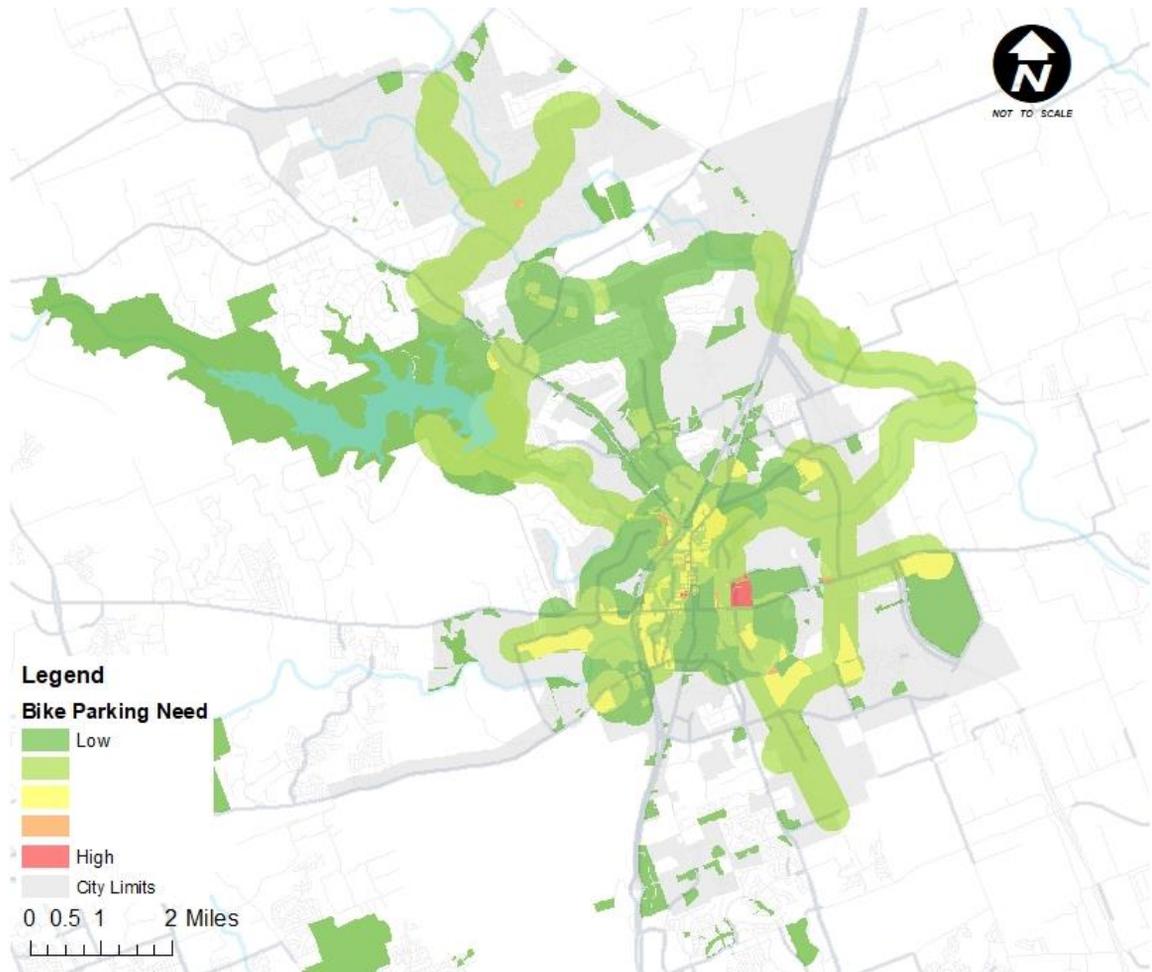
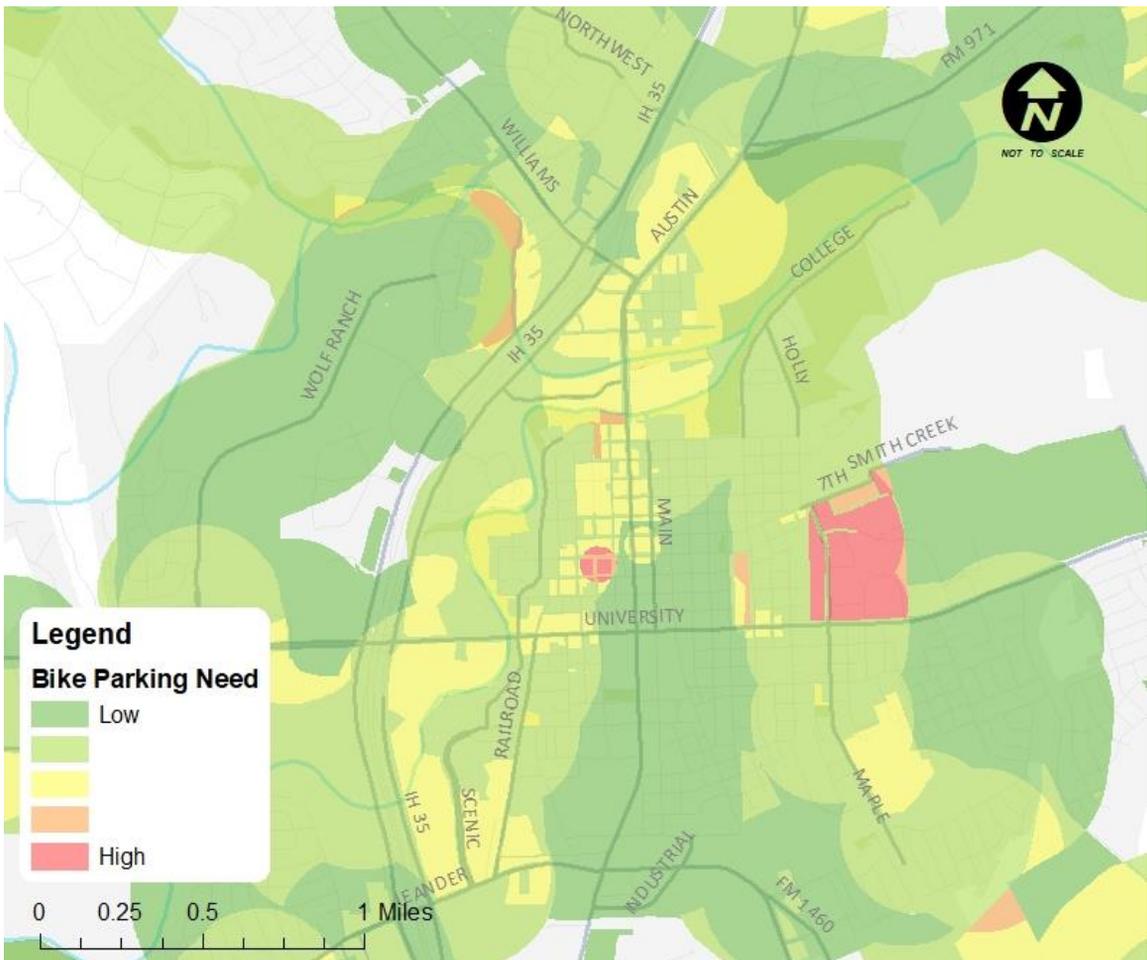


Figure 27. Weighted Suitability for Bicycle Parking Priority Areas

## Recommendations



*Figure 28. Weighted Suitability Analysis for Bicycle Parking Priority Areas (Zoom to Downtown)*

The bike parking hot spots map shown in Figure 27 and Figure 28 can also be used to expand the present bike share program. The popular origins and destinations for bicycle trips shown in red and yellow are natural locations to place future bike share stations. It is recommended that the City begin tracking usage of the shared bikes at the Georgetown Public Library and Visitor's Center. If inventory is often low, additional bikes should be added to these

stations, and new areas with high levels of need for bicycle parking facilities should be explored as a next step in building out the program. There are various automated stations, such as B-cycle in Austin, that could be piloted in Georgetown in order to make bike check out more accessible. Currently, potential users need to enter the library or visitor's center to secure a bicycle, and a kiosk check out point could encourage new users of the service.

## Recommendations

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On its own, the City should proactively pursue opportunities to build bicycle racks in priority areas on sidewalks without impeding ADA access as shown in Figure 29 below. One example of this practice includes converting on-street parking spaces into bicycle corrals; 8 to 10 bicycles can be accommodated by one on-street car parking space, shown in Figure 30 below.



*Figure 29. Bike-U Racks in San Gabriel Park*



*Figure 30. Example of On-Street Parking Spaces Converted to Bike Corral in Austin, TX*

## Recommendations

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### 3.7 POLICY RECOMMENDATIONS

Georgetown's city ordinances and Unified Development Code (UDC) are the main regulatory documents for building bike infrastructure in the city, providing guidance and a legal framework for builders and residents.

In general, these resources have served Georgetown well, however, the City is evolving and its Comprehensive Plan is in the process of being updated to reflect the city's continued growth. This process presents a key opportunity to update the existing ordinances and the UDC to better ensure adequate multi-modal transportation facilities, particularly bike facilities.

Portions of the code should be amended to better serve the needs of bike riders, and the City should work to ensure that its transportation facilities

are serving all residents, regardless of transportation mode choice.

Maintenance and safety are two key issues that must be considered. Currently, the Public Works Department is responsible for street maintenance, and the Parks and Recreation Department is responsible for maintenance of recreational trails. It is imperative that the two coordinate together to ensure that all facilities are well maintained. The section below outlines recommended changes.

## Recommendations

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### **3.7.1 GENERAL AMENDMENTS**

- Amend code so Traffic Engineer responsibilities include designating areas for bike lanes.
- Avoid converting wide shoulders into additional vehicle travel lanes on roadways without allocating space for biking facilities.
- Ensure that bike facility usage and performance is being adequately measured.
- Create an active transportation monitoring program within the Transportation Department to assess current and future trends in cycling and walking. This data can be used to reinforce the need for more cycling and pedestrian infrastructure projects.
- Ensure that all re-pavement and maintenance projects consider a multi-modal component.
- Enforce and educate the public on bicycle regulations and laws.
- Target education efforts about how to properly maneuver the streets of Georgetown toward both bicyclists and drivers.
- Develop a bike facility maintenance program within the Public Works Department to ensure bike facilities are cleaned and functional.
- The City of Georgetown should create a new position, or modify job requirements for an existing position, to introduce an official bicycle/pedestrian engineering coordinator who will be responsible for new policies and programs.

- Require adequate signage along key bike routes in the city.
- Roads that qualify as low speed and traffic volume should have sharrows and signs installed.
- Emphasize safety for bicyclists at intersections by painting bike lanes green a different color (such as green) than the roadway itself.

### **3.7.2 INCORPORATION OF BIKING INTO OTHER PLANNING EFFORTS**

Georgetown must consider how to better incorporate biking into other City planning documents, such as the Comprehensive Plan, Capital Improvement Plan, and Parks and Recreation Plan. By making biking a key component of each of these plans, Georgetown can ensure that it is approaching biking holistically and working to create the best bicycle culture possible. To that end, the following changes are recommended:

- Ensure that the Bike Master Plan is a key component of the Comprehensive Plan.
- Improve biking elements in the Overall Transportation Plan.
- Create a separate Bike Capital Projects category in the Annual Budget.

## Recommendations

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### **3.7.3 PROGRAM RECOMMENDATIONS**

Public engagement and City events can play a key role in promoting biking in the city. Tools such as social media are a great way to ensure that all residents have accurate and up-to-date information regarding community bike events and safety information. After the City installs additions to its bike network, it should incentivize businesses to offer bike parking, as well as storage and showering facilities which can potentially increase people's willingness to bike to work. Organizations such as the Downtown Association host events like the Wine and Music Festival and Market Days, which are a great way to increase tourism in Georgetown. Promoting biking to these events could reduce traffic and increase attendance. The following are programmatic recommendations for City promotion of cycling:

- Ensure adequate communication with residents about new bike infrastructure, bike facilities and city-wide bike events in Georgetown through social media outlets such as Nextdoor, Twitter, and Facebook, as well as flyers and brochures.
- Explore policies that incentivize businesses to provide end of trip biking facilities. These could include creating a simple process for requesting a bike rack from the City, or providing tax credits for shower facilities.
- Promote Georgetown as an active transportation tourism city. Georgetown should consider designating biking and walking as the official transportation modes during active transportation friendly promotions or events. Creating an annual event, such as "Georgetown Bike and Walk Week", is a great way to promote Georgetown as a bike friendly city to tourists.

## Recommendations

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### **3.7.4 DESIGN STANDARDS**

It is recommended that Georgetown adopt design standards to foster a more bike-friendly community. Currently, the City follows standards set by the American Association of State Highway and Transportation Officials (AASHTO); it is suggested the City transition to National Association of City Transportation Officials (NACTO) guidelines due to greater emphasis on bicycle safety. NACTO focuses on decreasing bicycle stress through standards such as increased shoulder widths, wider minimum bike lane widths, and more frequent signage, which help drivers predict the movement of bikes and reduces potential conflicts.

Complete Streets policies were created by Smart Growth America to enable safe access for all roadway users, including pedestrians, motorists, and bicyclists. Complete Streets design may be appropriate on Austin Ave. or Main St.

The following changes in City design standards are recommended:

- Adopt NACTO recommendations as Georgetown's design standard for cycling infrastructure.
- Require adequate bike signage on roadways with speed limits of 40mph or less and shoulder widths greater or equal to 5 feet.
- Adopt a Complete Streets policy to help systematically design streets such as Austin Ave. and Main St. to accommodate all transportation modes.

## Recommendations

### 3.8 COST ESTIMATE

For the completion of the first phase the bicycle network, City staff will need to identify funding options and allocate staff to manage the implementation plan.

*Table 4. Tier 1 (Top 10) Network Cost*

Network Element	Quantity	Cost	Total Cost
On-Street			
Bike Lane	9.84 miles	\$4,382	\$43,119
Bike Lane - Buffered	3.95 miles	\$10,560	\$41,712
Protected Bike Lane	10.83 miles	\$1,322,000	\$14,317,260
Pavement Markings	4 markings	\$249	\$996
Subtotal:			\$14,403,087
Off-Street			
Shared use path	19.07 miles	\$65,000	\$1,239,550
Subtotal:			\$1,239,550
Intersections			
Crossing Markings and Bike Boxes	1 marking	\$11,000	\$11,000
Subtotal:			\$11,000
Total:			\$15,653,637

The cost of Georgetown's bicycle network will vary depending on operating expenses, but Table 4 provides a high-level cost estimate for various network elements. Estimated costs do not include removal of existing roadway striping, or extensive infrastructure improvements, such as bridges. Costs do include any bike infrastructure specific materials and actions such as lane striping, pavement markings, and bollards for at-grade cycle tracks. Cost estimates used were primarily estimated by the City of Portland following their own bike network build out.

The build-out of the recommended priority bicycle network, without considering maintenance costs, staffing, and other operations, is currently estimated at \$15-16 million. The City of Georgetown will need to develop a budget and conduct any required environmental reviews in order to implement the first stages of the bicycle network successfully. A full methodology for determining cost can be found in **Appendix 7: In Depth Methodology for Determining Cost Estimates**.

### 3.9 DECISION-MAKING PROCESS

Georgetown has a council-manager system of government in which:

- Council members are the leaders elected to represent various segments of the community and to concentrate on policy issues that are responsive to citizens' needs and wishes,
- The City Manager is appointed by Council to carry out policy and ensure that the entire community is being served, and
- The Council approves the budget, determines tax rate, and focuses on the community's goals, major projects, and long-term considerations such as community growth, land use development, capital improvement plans, capital financing, and strategic planning.

City Council approves all plans, including the Bike Plan, Master Plan, and Capital Improvement Plan. A budget then needs to be approved to fund planning efforts.

Finally, the City Manager's office works with various departments in the City to implement the plan. In order to formalize and propel forward implementation of the Bicycle Master Plan within this framework, it is recommended that a formal Bicycle (or Bicycle and Pedestrian) Advisory Committee be created. Decision-making advisors, Jack Daly, the Assistant to the City Manager of Georgetown, and Bonnie Sherman, TxDOT's Statewide Bicycle and Pedestrian Coordinator, were consulted to better understand the decision-making structure and advance implementation of a bike plan. TxDOT works with the City to design roads that it manages during resurfacing and expansion projects, and allocates certain types of funding for bicycle and pedestrian projects in Texas.

# Chapter 4:

## Make It Happen: Engineering, Education, Encouragement, Enforcement, and Evaluation Plan

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### 4.1 INTRODUCTION

Implementing successful pedestrian and cycling improvements involves much more than simply building new facilities. Since the 1970's the "5E's" framework has become the industry standard, a more holistic approach that integrates Engineering, Education, Encouragement, Enforcement, and Evaluation.

This framework allows public agencies to expand outreach efforts and measure success. Many traffic safety programs, such as Vision Zero and Safe Routes to School, assess themselves using the 5E's framework.

The state of these existing programs provides a rich body of resources that have been used to construct this 5E implementation plan as a component of the Bicycle Master Plan. The 5E's are defined on the following page.

## 5 E's Plan

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- **Engineering:** These efforts are often the most visible to local citizens and come in the form of painting bicycle lanes on roadways, creating cycle tracks, lowering speed limits, or putting up signage to alert motorists of the presence of bicycles.
- **Education:** Cycling safety education programs are often offered to students through school districts. Adult safety classes are also recommended for both motorists and bicycle users to promote respect and awareness of all travel modes and create safer streets.
- **Encouragement:** Encouragement efforts consist of anything that incentivizes citizens to use bicycles. This can include recognizing National Take Your Bike to Work Week and National Bicycle Month, installing additional bike racks across the city, and incentivizing businesses to provide showers and lockers. These efforts can be initiated by the City, but would ideally originate from community leaders and organizations. Working directly with residents will help people feel more invested in promoting cycling and create a sense of local pride in the cycling community.
- **Enforcement:** A set of laws and regulations should be in place to ensure the safety of vulnerable road users such as bicyclists. It should be a priority to spread awareness of new regulations among local law enforcement and residents.
- **Evaluation:** Statistical analysis helps elected officials make important funding and project decisions to best serve the community's needs. Maintaining bike and pedestrian counts, for example, can demonstrate the impact of cycling infrastructure and inform recommendations for future expansion.

The full 5E literature review that informed recommendations can be found in **Appendix 13: "5E's" Literature Review.**

### 4.2 5E'S RECOMMENDATIONS

More than 40 bike plans, government reports, and agency websites were reviewed and analyzed to develop recommendations for this Bicycle Master Plan that are tailored to existing conditions in Georgetown. For each E, a list of key takeaways from the literature review are presented to inform City employees of important aspects of implementing a cycling improvement project. A set of specific recommendations are also presented in concurrence with the Plan vision. The recommendations for each E include resources and supplemental materials for City employees to use as a starting point when implementing this plan.

#### 4.2.1 ENGINEERING

The proposed bicycle network itself is an engineering recommendation. Engineering improvements should benefit all roadway users and be distributed equitably throughout the city in the form of on- or off-street facilities. The engineering goal of this plan is to create a connected network that serves the whole city.

#### *Key Takeaways*

- Engineering efforts can be creative and vibrant, going beyond simple improvements such as striping a bike lane. Creative projects can become an attractors themselves, stimulating economic development for surrounding businesses.
- Coupling bicycle and pedestrian improvements is recommended to provide facilities for non-motorized users of all ages and abilities
- Complete “low-hanging fruit” bicycle facility improvements first. These should be quick, easy, low-cost projects that have high benefits, such as sharrows and signage.

### *Specific Recommendations*

- **Adopt a Stronger Complete Streets Policy:** A Complete Streets policy provides a framework for engineering improvements that makes facilities designed for all roadway users. The Complete Streets website states that these engineering improvements can be made through "a variety of policies, ordinances, and resolutions, rewrites of design manuals, inclusion in comprehensive plans, internal memos from director of transportation agencies, policies adopted by city and county councils, and executive orders from elected officials, such as Mayors or Governors." Smart Growth America has a section on their website dedicated to providing resources to local governments interested in developing a Complete Streets policy<sup>18</sup>.
- **Adopt NACTO and AASHTO Guidelines in all Design Manuals:** Currently, Georgetown's Construction Specifications manual contains no design guidelines for bicycle infrastructure. Adopting the National Association of City Transportation Officials (NACTO) guidelines will establish baseline standards for any bicycle improvement project. NACTO's Urban Bikeway Design Guide provides recommendations for these standards<sup>19</sup>.

### **4.2.2 EDUCATION**

Education efforts are important for improving safety and awareness of bicyclists. Education for school-aged children in particular should be a priority as courses in bike safety can help reduce dangerous and potentially life-threatening interactions with vehicles. Many educational materials already exist in the public domain that can be adapted for use in Georgetown.

### *Key Takeaways*

- Bicycle safety education programs should be geared toward both bike riders and motorists.
- Bicycle safety education programs should be offered to school-aged children, parents of those children, adults, drivers, and neighbors.
- There exists a plethora of online resources that provide educational materials and courses in bicycle safety.

### *Specific Recommendations*

- **Expand Safe Routes to School Program:** Currently, the extent of Georgetown's Safe Routes to School program includes a grant of \$399,280 that was awarded to Mitchell Elementary School in 2009. It was used to construct sidewalks, crosswalks, and to install school zone flashers. Georgetown can apply for additional SRTS grants to expand infrastructure and implement educational programs. SRTS funds are distributed by TxDOT's Transportation Alternatives Set-Aside (TA Set-Aside) Program.

18 - <https://smartgrowthamerica.org/program/national-complete-streets-coalition/publications/what-are-complete-streets/>

19 - <https://nacto.org/publication/urban-bikeway-design-guide/>

## 5 E's Plan

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- **Train City Engineers in Bicycle Facility Design:** The Federal Highway Administration (FHWA) has teamed up with the National Highway Institute to create a short educational course titled "Bicycle Facility Design."<sup>20</sup> According to the course description, this training will teach planners and designers how to apply existing standards and deal with various technical issues involved in bike facility design. City of Georgetown traffic engineers could benefit from participating in this course.
- **Partner with Local Bicycle Advocacy Groups to Provide Educational Classes for Adults and Students:** Georgetown is home to a number of local cycling advocacy groups, including the Georgetown Cyclopaths and the Sun City Cyclists. There is an opportunity for the City of Georgetown to work with volunteers from these groups to distribute educational materials at tabling events, elementary schools, Southwestern University, and local community centers. Adult evening classes can be offered at the Georgetown Library or other community centers. This is a low-cost alternative to hiring and training an outside teacher to distribute educational information.
- **Utilize Online Material and Explore Education Curriculum Options:** There is a wide variety of online educational material that the City of Georgetown can utilize for education and outreach programs, including but not limited to:
  - The League of American Bicyclists' "Smart Cycling" Course
  - National Highway Traffic Safety Administration's Bicycle Safety Activity Kit
  - TxDOT's Bicycle Safety Education Material
  - Bike Texas College Active Transportation Safety Programs

20 - [https://www.nhi.fhwa.dot.gov/course-search?tab=0&course\\_no=142046&sf=0](https://www.nhi.fhwa.dot.gov/course-search?tab=0&course_no=142046&sf=0)

### 4.2.3 ENCOURAGEMENT

In Georgetown's vibrant Downtown district there are opportunities for the City to set up tables with brochures, handouts, educational materials, and other resources on cycling safety. Participating in events like Ride Your Bike to Work Week or National Bike Month can encourage citizens to explore bicycling as an option. Southwestern University received an award for its Pirate Bike Appreciation Week in 2009, which could be used as a model for similar programs across the city.

#### Key Takeaways

- Bicycling encouragement outreach efforts come in many forms, from programs to projects.
- The goal of bicycling encouragement programs is to expose interested but concerned citizens to the benefits of bicycling.



Figure 31 San Antonio Mayor Leading a Bike Ride

#### Specific Recommendations

- **Create a Bicycle Advisory Committee:** Currently, there are two Tax Increment Reinvestment Zones (TIRZ) in Georgetown that include bicycle infrastructure: the William's Dr. TIRZ and the Downtown TIRZ. A new advisory committee dedicated to resolving cycling issues should be created within the City of Georgetown to advise on funding allocation from the TIRZ and ensure that active steps are being taken to implement the Bike Plan.
- **Implement New Bicycle Encouragement Programs:** Encouragement programs should be fun, engaging, and provide resources for citizens. These programs that could be implemented in Georgetown:
  - SmartTrips – Resource created by the City of Austin to help residents identify their transportation options<sup>21</sup>
  - Youth Bike Club – League of American Bicyclists resource advises on "How to Start a Bike Club"<sup>22</sup>
  - Mayor or Council-led bike rides – San Antonio hosted a bike ride with the Mayor after a local bike summit<sup>23</sup>
  - National Bike Month – Observed in May to highlight the benefits of biking in communities<sup>24</sup>

21 - <http://smartripsaustin.org/>

22 - <http://www.bikeleague.org/>

23 - <http://www.biketexas.org/news/>

24 - <https://bikeleague.org/bikemonth>

- **Work toward Becoming a Bicycle Friendly Community:** One of the goals of the Georgetown Bike Plan is to become a Bicycle Friendly Community (BFC). According to the League of American Bicyclists, which designates these communities, “A BFC welcomes bicyclists by providing safe accommodations for bicycling and encouraging people to bike for transportation and recreation.”<sup>25</sup> The City can apply for specific levels of BFC designation, and the application process alone can help to refine and reinforce Georgetown’s goals and progress toward building a truly bike-friendly community.

### 4.2.4 ENFORCEMENT

The Georgetown Police and Southwestern Police departments can make a substantial difference in local transportation safety culture. Officers should enforce traffic laws related to bicycling through warnings and citations, as appropriate, to reinforce to the community that these laws are taken seriously.

#### *Key Takeaways*

- Efforts from local law enforcement can increase awareness of bicyclists in the area.
- Coupling law enforcement efforts with educational campaigns can increase the impact of these campaigns.
- Enforcement of local laws and regulations for both bikers and motorists is critical to building a natural respect between the two over time.

#### *Specific Recommendations*

- **Work with Georgetown Police Department to Educate Officers about Bicycle Safety:** There are many resources available to increase local law enforcement’s involvement in the safety of bicyclists, the details of which can be found in **Appendix 13: “5Es” Literature Review**. Surrounding cities frequently invite officers to tabling events to allow residents to engage in conversations with them on bicycle safety. This is a practice that should be implemented in Georgetown.
- **Improve Local Laws and Regulations to Improve Safety of Bicyclists:** Nearby municipalities have implemented laws specific to bikes that Georgetown should review and consider. In 1996, the City of Austin passed a bicycle helmet law that requires all persons to wear a helmet when riding a bike. Safe passing laws and laws requiring motorists to yield to bike riders can also help keep bicyclists safe.

25 - <https://www.bikeleague.org/community>.

### 4.2.5 EVALUATION

Georgetown should implement an evaluation program to track the impacts of bicycle facility improvements, if possible as the very first step of Bike Plan implementation. Pre-facility usage numbers are as important as the post-facility improvement numbers, because establishing a baseline is required to measure increases in usage. If baseline and ongoing data are collected, decision-makers will have the ability to see the full impact of new infrastructure as they make choices moving forward.

#### *Key Takeaways*

- Pedestrian and bicycle counts are valuable data to inform spending on further improvements.
- There are various tools that can be used to monitor bicycle and pedestrian counts.
- Choosing performance measures is an important first step, and tracking a few critical pieces of information well is more beneficial than tracking many measures that will clutter the story the data tells.



#### *Specific Recommendations*

- **Create a Bicycle and Pedestrian Monitoring Program:** Use online resources such as FHWA's Traffic Monitoring Guide as guidelines for implementing a bicycle (or bicycle and pedestrian) count program. Certain equipment and software will need to be purchased, so a portion of the budget should be dedicated to obtaining the necessary materials to monitor traffic.
- **Implement a Set of Key System Performance Measures:** Work with Georgetown's City Council and Chamber of Commerce to determine which key performance metrics should be used for Georgetown's Performance Management Program. Fehr and Peers provide a useful online guidebook that lists many examples of active transportation performance measures<sup>26</sup>, and the FHWA's "Guidebook for Developing Pedestrian and Bicycle Performance Measures" could also be useful<sup>27</sup>.

*Figure 32. A new bicycle traffic counter is tested*

*Source: Texas A&M Transportation Institute*

26 - <http://www.fehrandpeers.com/active-transportation-performance-measures/>

27 - [https://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/publications/performance\\_measures\\_guidebook/](https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/performance_measures_guidebook/)

### 4.3 CONCLUSIONS

Georgetown is creating and implementing a Bicycle Master Plan as a component of the 2030 Comprehensive Plan update. The City seeks to implement the “5E” framework for improving conditions for bicyclists through engineering, education, encouragement, enforcement, and evaluation.

The methods of peer communities to implement 5E strategies were reviewed, and specific recommendations were made to the City of Georgetown for implementing a 5E program of its own.

Improving conditions for bike riders is no longer a single engineering solution; striping a bike lane alone will not ensure long-term results. The 5E's, when implemented together, lead to an increase in community bicycling.



# Collection of Appendices

Georgetown Bicycle Master Plan

**BIKE**  
**GEORGETOWN** 



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# Appendix 1:

## Review of Community Engagement

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### A1.1 CONSULTATION WITH EXPERTS

**Dr. Katie Kam of Wheels & Water, LLC** -- Dr. Kam is a planner and engineer as well as President of Wheels & Water, LLC, which promotes electric low speed vehicles (LSV) and creating Low Emission Alternative Networks (LEAN). On September 6, 2018, she spoke to the project team about how to incorporate considerations for low speed electric vehicles into a bicycle plan.

**Dr. Phil Lasley of the Texas A&M Transportation Institute** -- Dr. Lasley has been actively involved in mobility analysis, congestion mitigation, performance measurement, and transportation policy for over five years. He is a leading researcher for TTI's Transportation Policy Research Center, a research center working with the Texas Legislature on projects of State interest. He has extensive experience in bicycle planning and on October 9, 2018 he gave a lecture to the project team on the essential components of bicycle master plans.

**Bonnie Sherman of TxDOT's Statewide Bicycle and Pedestrian Planning Program** -- Ms. Sherman is a planner with TxDOT's Public Transportation Division, Statewide Bicycle and Pedestrian Program. She has worked in active transportation planning and environmental planning for TxDOT, and currently serves as the lead for the agency's project to initiate bicycle and pedestrian data collection across the state. Prior to joining TxDOT, Bonnie worked as an environmental consultant for a national firm. The project team interviewed her on November 26, 2018.

### A1.2 PUBLIC ENGAGEMENT EFFORTS

#### TIMELINE

**September 13, 2018:** The City of Georgetown and the UT Project Team held a kickoff meeting to discuss preliminary scoping for the Bicycle Master Plan. The group clarified the project study area and scope of work, discussed objectives, identified available data, established communication channels, and determined the project schedule.

**October 2, 2018:** The UT Project Team participated in the City of Georgetown's "On the Table" events. Team members attended community meetings at the Southeast Georgetown Community Center to listen in on conversations with Georgetown residents as part of the City's comprehensive plan update efforts. This participation helped ensure that the team had a stronger understanding of the challenges facing the city overall, from affordable housing, to economic development, to bike planning.

**October 11, 2018:** The City of Georgetown and the UT Project Team held a stakeholder meeting. The team brought together key stakeholders to identify tasks for the Plan update, discuss community outreach efforts, review and comment on proposed improvements, and identify gaps in the City's current bicycle network. The stakeholder group included individuals from the following organizations:

- Georgetown Independent School District (GISD)
- TxDOT
- City of Georgetown Convention and Tourism Bureau
- Williamson County Parks and Recreation
- City of Georgetown Public Works
- City of Georgetown Planning Department
- Southwestern University
- City of Georgetown Parks and Recreation
- City of Georgetown City Manager's Office

## Review of Community Engagement

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**October 11, 2018:** Directly following the stakeholder meeting, the City of Georgetown and the UT Project Team conducted the first Bike Master Plan Community Workshop to gather public input about the current bicycling environment in Georgetown. This initial workshop was in the form of an open house with four main stations to gather sentiment about: 1) current bicycle demand, 2) the extent of the current bike network, and 3) community feelings toward biking in Georgetown.

**November 15th, 2018:** The City of Georgetown and the UT Project Team held a second stakeholder meeting to relay the results of the existing conditions analysis. Stakeholders also had an opportunity to provide feedback on proposed improvements and identify gaps in the draft version of the Bicycle Master Plan.

**December 4, 2018:** The City of Georgetown and the UT Project Team held a second community workshop, once again in an open house format, to present elements of the draft Bicycle Master Plan and proposed improvements to the public. City officials and community members were invited to participate in the process and comment on the draft.

## Review of Community Engagement

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### COMMUNITY WORKSHOP DETAILS

The UT Project Team conducted a robust informational campaign to inform residents and visitors about the ongoing bike planning process in Georgetown. The first Community Workshop was advertised through flyers posted on community message boards and in local businesses, and a social media campaign was launched in order to raise awareness and encourage attendance. All social media posts shared on official City department social media outlets using the hashtags #BikeGeorgetown and #GeorgetownBici. Several UT study team members are fluent in Spanish and were available to translate as needed.

The Georgetown Public Library was chosen for the location of both community workshops due to its central location and high visibility. Welcome and informational posters were posted throughout the library to inform passersby of the event, and direct those interested to attend. After both community workshops, the UT study team worked to incorporate the feedback and comments received into the draft plan.

During the community workshops, 60 participants used the sign-in sheet, though the study team estimates that more people attended. These participants provided a total of 72 comments through general comment cards and participation in individual exhibits.

The UT Project Team was divided into three groups, each focusing on a different element of the bike plan: Demand, Supply, and Policy. The Demand group was responsible for community outreach for events, and for gathering information from residents regarding the current demand for bicycling in Georgetown. The Supply group took the lead on developing the actual proposed bike network and design considerations. The Policy team focused on cost estimates, decision making structures, and implementation of the bike plan. Each group designed activities to gather feedback that would help inform their own topics.

## Review of Community Engagement

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### COMMUNITY WORKSHOP ACTIVITIES AND DISPLAYS

#### **Demand**

Attendees at the first workshop were greeted with two large poster boards at the event space entrance. Each displayed one of the following leading statements:

- I like biking in Georgetown because...
- I don't like biking in Georgetown because...

Colored markers and sticky notes were provided to attendees to write down and then post responses on each board. Three UT Project Team members were available to encourage participation.

A total of 21 unique comments were written on the poster prompting attendees to comment why they like biking in Georgetown, and 29 comments were written regarding why residents do not like biking in Georgetown.

In addition to these unique comments, a number of attendees expressed approval of comments that has already been written by marking them with either a +1 or star symbol. The following questions were prepared to help the project team prompt discussions with attendees to gather additional feedback:

- What brought you to the meeting today?
- Do you bike?
- If no, why not?
- Where do you go when you bike?
- What would encourage you to bike more?
- Do you think Georgetown is doing enough to promote bicycling?
- Do you think your friends, classmates, and co-workers have similar biking habits to yourself, and if not how are they different?

## Review of Community Engagement

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### Policy

The policy group presented two activities. The first activity allowed community members to give feedback on how the City of Georgetown should handle regulations and policy measures dealing with cycling. The second poster was a “did you know” activity to educate community members on current city and state policies about biking, and some examples of how other communities have been implementing bike infrastructure.

Both policy posters sparked interesting conversations with community members, which were recorded and analyzed. The results of these conversations are summarized by topic below.

#### *Present Dangers of Biking*

- Roads are currently not cleaned to an appropriate degree leaving debris
- Stray animals pose a danger to bikers and pedestrians alike
- On many main roads traffic travels too fast for bikers to navigate comfortably
- Many roads lack shoulders or sidewalks; Airport Rd. and Austin Ave. were specifically mentioned
- There is inadequate walking and biking infrastructure near schools making these options potentially dangerous for children
- Cyclists reportedly speed through the trails and are a danger to pedestrians; implementing speed limits for bikes on trails was proposed as a solution

#### *Update Codes and Policies*

- Residents view this as the first step towards making Georgetown a more bike friendly place
- “No Right Turn on Red” signage suggested for intersections
- Consider completing unfinished sidewalks as part of the bike network
- Make bike lanes mandatory
- Provide an incentive for people to bike to festivals. i.e. if you bike to a festival you receive a 10% discount on your ticket

#### *Typology Feedback is Contradictory*

- Many respondents want dedicated bike lanes, particularly on wide roads, but others favor multi-use paths

#### *Lack of Connectivity*

- Sidewalks are incomplete or absent in multiple areas of Georgetown
- There are poor connections to regional trails outside of the city
- There should be better connections across IH-35 for bicycles
- Explore the opportunity for a “Rails to Trails” project on the railroad that runs through Georgetown

#### *Education and Awareness*

- Bike traffic lights are helpful in drawing driver’s attention to cyclists
- Incentives should be explored to push employers to encourage employees to bike to work
- All road users need to be better educated and aware of the rules of the road
- Education should be targeted toward cyclists and drivers, particularly in the Sun City community
- Installing signs and sharrows would be helpful to the cycling community

## Review of Community Engagement

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### Supply

The Demand Group hosted two mapping exercises for participants to identify specific locations they travel to, and routes they travel on in Georgetown by bicycle as well as by vehicle or other modes. The team members leading this station wrote open-ended comments on post-it notes to provide context for the locations selected on maps. There was an additional mapping exercise to identify opportunities, strengths, threats, and weaknesses in the current bike network. The two mapping activities are described below:

#### *Origin & Destination Map*

Participants added different colored push-pins to a map to show 1) where they currently travel to and from by bike, and 2) where they would like to travel by bicycle if a fully connected, safe bicycling network existed in Georgetown. White push-pins represented desired origins, and blue push-pins represented desired destinations. For trips already being made by bicycle, a yellow sticker was used to represent origins, and blue/purple stickers were used to represent destinations. Red stickers were used to indicate crashes that have occurred involving cyclists.

Common destinations expressed by participants include the Downtown Square, Georgetown Country Club, Wrench Brewery, and existing trails.

#### *Network Strengths, Weaknesses, Opportunities, and Threats Map*

Participants added red push-pins to a map representing network gaps or problem spots in the existing bike network. Green pins were used to represent good bicycling facilities, and yellow push-pins to represent possible areas for improvement. Red stickers were used to indicate crashes that have occurred involving cyclists that residents were aware of.

Two areas highlighted as positive elements of the bicycle network are as follows:

- Country Road 258 outside of Reagan because of its wide shoulder for bicycling
- Existing parks and trails, with the trail along Scenic Drive marked most often

Primary opportunities for increased safety and connectivity suggested by community members include:

- Incorporate a pedestrian/bicycle element into the future Rivery Dr. IH-35 crossing
- Include a connection for bicyclists on Northwest Blvd. as it is expanded across IH-35
- Encourage College St. as a primary street for cycling
- Install shoulders along Lakeway Dr.
- Incorporate bicycling facilities into the expansion of Airport Rd.
- Facilitate trail connections to Berry Springs Park and the Berry Creek subdivision
- Explore the option of converting the rarely-used Georgetown Railroad into a trail path for pedestrians and cyclists

## Review of Community Engagement

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### COMMUNITY WORKSHOP TAKEAWAYS

The two primary themes of concern from participants include safety and connectivity. Attendees described a willingness and desire to bike, but noted that a lack of connectivity and safety on the routes they would like to take often prevents them from doing so. The group shared that even when destinations are within easy biking distance, dangerous intersections or stretches of roadway motivate them to drive instead. Specifically, IH-35 serves as a significant divider that lacks safe connections for residents to reach the Downtown Square and other local destinations.

Other general concerns included:

- Flooding along hike and bike trails
- The potential of cars parking in bicycle paths in neighborhoods
- Gravel in emergency lanes impacting cyclist's ability to use a wide shoulder
- The fact that shoulders or bicycle lanes are removed after some road improvements

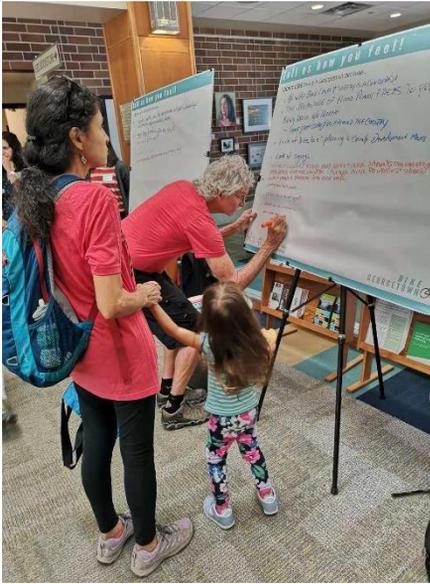
One group of participants were part of a local bicycling group from Sun City, Georgetown. The group organizes rides within Georgetown to a local bakery on Fridays, as well as long rides to outlying areas. Because they have cycled many Georgetown roads, their input was valuable in identifying problem areas.

Residents described a desire to access amenities such as grocery stores by bicycle. Some participants expressed a desire for protected bicycle lanes and separated bicycle paths, while others said that cyclists need no more than a wide shoulder on the road. Many residents suggested efforts to educate drivers, such as posting signage to alert drivers that cyclists may be present on roadways.

Each area of concern was evaluated by the project team. Many direct suggestions were worked into the Plan, while others were studied and reworked to offer a similar solution. All concerns were addressed in the Plan document itself either in the implementation chapters, especially Chapter 4: Engineering, Education, Encouragement, Enforcement, and Evaluation Plan, or in the Proposed Bicycle Network in Chapter 3.

# Review of Community Engagement

Community Workshop Participation



# Appendix 2: Survey Prompts

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## A2.1 ONLINE SURVEY

Dear Georgetown Residents/Visitors,

The City is working with graduate students from the University of Texas at Austin conducting a bike study in Georgetown. The purpose of this survey is to understand your views biking activities. Your input is important and will help the city to better understand the level of bike interest in the community. Your answers will be kept confidential. Please complete the survey regardless of your level of involvement with cycling activities. One household may provide multiple survey replies as long as the replies come from different household members.

**This section will ask about your activities.**

1. Are you a resident of the City of Georgetown?

- a. Yes
- b. No

2. Do you work in the City of Georgetown?

- a. Yes
- b. No

3. Have you ever biked to/from/in Georgetown?

- a. Yes
- b. No

## Survey Prompts

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4. Why do you bike? Check all that apply. (Skip to question #10 if you do not bike)
- a. Go to work
  - b. Run errands/ Go shopping
  - c. Go to park
  - d. Go to school
  - e. Go to city hall, community center or library
  - f. Visit family or friends
  - g. Transfer for other transportation, for example, to train station, bus stop, et al.
  - h. Exercises or fun
  - i. Other (Please specify) \_\_\_\_\_
5. How often do you bike between home and work or school?
- a. Daily
  - b. Weekly
  - c. Few times a week
  - d. Monthly
  - e. Never
6. How often do you bike for personal business such as going to the bank or run errands?
- a. Daily
  - b. Weekly
  - c. Few times a week
  - d. Monthly
  - e. Never

## Survey Prompts

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7. How often do you bike for recreation or exercise purposes?

- a. Daily
- b. Weekly
- c. Few times a week
- d. Monthly
- e. Never

8. What types of paths do you use when biking? Check all that apply.

- a. On-street bike lanes
- b. Sidewalks
- c. Major streets
- d. Neighborhood streets
- e. Hike and bike trails
- f. Other (Please specify) \_\_\_\_\_

9. When do you bike? Check all that apply.

- a. Workdays
- b. Weekends
- c. Early morning or before breakfast
- d. Morning (7-9am)
- e. Midday or lunch time
- f. Early afternoon
- g. Afternoon (4-6pm)
- h. Evening or after dinner
- i. Other times (please specify)

## Survey Prompts

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10. Where are your most common non-work trips within Georgetown by any means of transportation? Check all that apply.

- a. Shopping centers
- b. Neighborhood stores
- c. Restaurants
- d. Parks or trails
- e. School
- f. Place of worship
- g. Sporting facility
- h. City Hall
- i. Library
- j. Downtown
- k. Other (please specify) \_\_\_\_\_

11. When traveling by car within Georgetown, how far is your average destination from home?

- a. Less than 1 mile
- b. 1.1 to 2 miles
- c. 2.1 to 4 miles
- d. 4.1 to 6 miles
- e. 6 + miles
- f. I do not drive

12. How many bicycles/tri-cycles (non-motorized, non-electrical) does your household own?

- a. None
- b. One
- c. Two
- d. Three or more

## Survey Prompts

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**This section will ask about your opinion on biking.**

13. Was being in a bicycling friendly area an important consideration in your choice of where to live or work?

- a. Yes
- b. No

14. Do you concur?

Note: On a scale from 1 to 5 where: 1. Strongly disagree; 2. Disagree; 3. Neutral; 4. Agree; 5. Strongly agree					
1	2	3	4	5	Statement
					Biking is a valuable transportation option for citizens
					Biking can Increase health and physical activities
					Roadway safety affects my decision to bike
					Biking encourages positive community interactions
					Biking can have a positive impact on the environment and “green” travel choices
					Biking to school is an important option for school-aged children
					Biking can support tourism and economic development in Georgetown
					Biking can provide affordable transportation options for low-income households or those with limited access to private vehicles
					Biking can enhance access to and experience of the natural environment

## Survey Prompts

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15. To what extent do you agree/disagree the following statements?

Note: On a scale from 1 to 5 where: 1. Strongly disagree; 2. Disagree; 3. Neutral; 4. Agree; 5. Strongly agree					
1	2	3	4	5	Statements
					Georgetown is overall cycling friendly city.
					Georgetown should improve cycling environment for ALL purposes including commuting, recreation, schooling, et al.
					Biking will grow in popularity as the City population grows.

16. If your taxes were kept the same but the funds would be re-distributed, would you support, oppose or remain neutral for additional city spending of transportation funds for improving cycling conditions?

- a. Support
- b. Oppose
- c. Remain neutral

## Survey Prompts

---

**This section will ask about your concerns related to biking.**

17. What bicycle barriers do you experience in Georgetown. Check all that apply.

- a. Lack of bicycle lanes
- b. Lack of off-street bicycle trails
- c. Streets too narrow
- d. Poorly lit streets
- e. No bike parking
- f. No direct route
- g. Too many hills
- h. Journey is too long
- i. Concerns about bicycle theft
- j. Concerns about personal safety
- k. Nowhere to shower
- l. Weather concerns
- m. Physical disability/discomfort
- n. Other (please specify) \_\_\_\_\_

18. What would encourage you to cycle more? Check all that apply.

- a. Dedicated bicycle lanes
- b. Off-street bicycle trails
- c. Paved shoulders
- d. Better connectivity to bike facilities
- e. Better traffic enforcement
- f. Better street lighting
- g. Better traffic signage
- h. Safe bicycle parking
- i. Shopping, schools, parks nearby
- j. Other (please specify) \_\_\_\_\_

## Survey Prompts

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19. How often do you use the hike and bike trail system?

- a. Daily
- b. Several times a week
- c. Once a week
- d. A few times a year
- e. Never
- f. Other

20. When visiting the hike and bike trail system, where do you often go? (check all that apply)

- a. Chautauqua Park
- b. Blue Hole Park
- c. VFW Park
- d. Bark Park
- e. San Gabriel Park
- f. Rivery Park
- g. Chandler Park
- h. Booty's Road Park
- i. Lake Georgetown
- j. I have not visited the hike and bike trail system
- k. Other: \_\_\_\_\_

21. Where do you believe are the most unsafe intersections or locations for cyclists in Georgetown? (text box)

\_\_\_\_\_

## Survey Prompts

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22. Identify specific street intersections and locations where you think bicycle facilities would be most beneficial in Georgetown? (text box)

---

**This section will ask about general information.**

23. What type of bike rider are you?

- a. Enthusiast
- b. Interested but concerned
- c. Not a rider
- d. Other

24. Please select your age range?

- a. Under 10
- b. 11 to 14
- c. 15 to 17
- d. 18 to 24
- e. 25 to 34
- f. 35 to 54
- g. 55 to 64
- h. 65+

25. What is your gender?

- a. Male
- b. Female
- c. Prefer not to disclose
- d. Other

## Survey Prompts

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26. What is your race or ethnicity?

- a. White
- b. Black or African American
- c. Hispanic or Latino
- d. Asian or Pacific Islander
- e. Mixed Race or Other
- f. Prefer not to disclose

27. What is the highest level of education you completed?

- a. Less than 9th grade
- b. Some high school
- c. High school diploma or GED
- d. Some college
- e. Associate degree or vocational/technical certification
- f. College degree
- g. Graduate or professional degree

28. How many persons are there in your households?

- a. 1
- b. 2
- c. 3
- d. 4
- e. 5+

29. How many motorized vehicles are there in your households?

- a. 0
- b. 1
- c. 2
- d. 3
- e. 4
- f. 5+

## Survey Prompts

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30. What is your annual household income?

- a. Less than \$19,999
- b. \$20,000-\$39,999
- c. \$40,000-\$59,999
- d. \$60,000-\$79,999
- e. \$80,000-\$99,999
- f. \$100,000+

31. What is the zip code you live in? \_\_\_\_\_

32. Do you have any suggestions for the future of cycling in Georgetown? (text box)

\_\_\_\_\_

33. Would you like to share your email in order to stay connected with future bike planning efforts in Georgetown? If Yes, please enter your email address

\_\_\_\_\_

**Thanks again for completing the survey!**

## Survey Prompts

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### A2.2 INTERCEPT SURVEY – CYCLIST

- |  |     |    |
|--|-----|----|
| 1. Have you ever biked to/from/in Georgetown?    | Yes | No |
| 2. Are you a resident of the City of Georgetown? | Yes | No |
| 3. Do you work in the City of Georgetown?        | Yes | No |
4. How often do you bike?
- a. Daily
  - b. Few times a week
  - c. Weekly
  - d. Monthly
5. Where do you go when you bike? (Check all that apply. Skip if you have never biked.)
- a. Workplace
  - b. Shopping center
  - c. Neighborhood stores
  - d. Restaurants
  - e. Parks or trails
  - f. City Hall
  - g. The Library
  - h. Downtown
  - i. Other (please specify) \_\_\_\_\_

## Survey Prompts

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6. When traveling by car within Georgetown, how far is your average destination from home?
  - a. Less than 1 mile
  - b. 1.1 - 2 miles
  - c. 2.1 - 4 miles
  - d. 4.1 - 6 miles
  - e. 6 + miles
  - f. I do not drive
  
7. To what extent do you agree/disagree the following statements? (1 strongly disagree - 5 strongly agree)
  - a. Georgetown is an overall cycling friendly city \_\_\_\_\_
  - b. Biking will grow in popularity as the city population grows \_\_\_\_\_
  
8. Do you concur? (Yes, No, or Neutral)
  - a. Roadway safety affects my decision to bike \_\_\_\_\_
  - b. Biking encourages positive community interactions \_\_\_\_\_
  
9. What bicycle barriers do you experience in Georgetown?
  
10. If your taxes were kept the same but the funds would be redistributed, would you support, oppose or remain neutral for additional city spending of transportation funds for improving cycling conditions? (Support, Oppose, Neutral)
  
11. Do you have any suggestions for the future of cycling in Georgetown?
  
12. Would you like to stay connected to future bike planning efforts in Georgetown? If yes, please provide email  
\_\_\_\_\_

## Survey Prompts

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### A2.3 INTERCEPT SURVEY – NON-CYCLIST

1. Have you ever biked to/from/in Georgetown? Yes No
2. Do you work in the City of Georgetown? Yes No
3. Are you a resident of the City of Georgetown? Yes No
4. When traveling by car within Georgetown, how far is your average destination from home? \_\_\_\_\_ mile/s
5. How many bicycle/tri-cycles (non-motorized) does your household own?  
\_\_\_\_\_
6. Do you agree? (Yes, No, Neutral)
  - a. Biking is a valuable transportation option for citizens
  - b. Roadway safety affects my decision to bike
  - c. Biking to school is an important option for school-aged children
  - d. Biking will grow in popularity as the City population grows
7. If your taxes were kept the same but the funds were re-distributed, would you support additional spending of transportation funds for improving CYCLING?  
(Yes, No, Neutral)
8. How many motorized vehicles are there in your household? \_\_\_\_\_ (#)
9. What is the Zip code you live in? \_\_\_\_\_
10. Do you have any suggestions for the future of cycling in Georgetown?

## Survey Prompts

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9. Would you like to share your email in order to stay connected with future bike planning efforts in Georgetown? If yes, please enter your email address

\_\_\_\_\_

# Survey Prompts

## A2.4 ENVIRONMENTAL AUDIT PROMPT

Location	Photo Taken?		Date		Time			Name			
	YES	NO	A lot	Wide Shoulder	Some	None	Shared Path/Lane - Marked	Shared Path/Lane - Unmarked	Sidewalk	Bike Lane	Protected Bike Lane
1											
2			Yes		No						
3			Wide Shoulder		Shared Path/Lane - Marked	Shared Path/Lane - Unmarked			Sidewalk	Bike Lane	Protected Bike Lane
4			Yes		No						
5			Yes		No						
6			Yes		No						
7			Yes		No						
8			Yes		No						
9			Yes		No						
10			Yes		No						
11			15 mph or less		16 to 25 mph	26 to 35 mph	higher than 35 mph				
12			2		3	4	5			5+	
13			Yes		No						
14			Residential		Neighborhood Commercial/Retail	Large Scale Commercial	Office			Park/Open Space	Industrial
15			Yes		No						
16			On-street parallel		On-street angled	Off-street parking lot	Driveways			No Parking	
17			Steep		Flat						
18			Yes		No						
<b>Comments/Notes:</b>											

# Appendix 3:

## Survey Report – Analysis of Survey Results

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### A3.1 SURVEY STRATEGY SUMMARY

Public outreach is essential in understanding the demand for bicycling in Georgetown. Two surveys were administered -- an online survey and an in-person intercept survey. Input was gathered from people of various demographics and biking perspectives. **1,172 online surveys and 307 intercept surveys were completed.**

Initial surveys were conducted by a UT study team in 2016, and the 2018 survey language is identical to allow results to be combined for a larger, more representative data set. Results from the two study periods were compared to ensure there were no discrepancies or duplications.

Survey questions were written with guidance from previous national

bicycle surveys, and research on important factors influencing cycling<sup>1</sup>. The online survey was hosted on Survey Monkey in both English and Spanish, and was sent out to the City's citizen engagement platform, Next Door. It was also advertised on the City's social media channels (Facebook, Twitter) and website, emailed via community group listservs, and available during the community workshops. The online survey was live from October 1 to November 2, 2018. The intercept surveys were conducted by project team members in person in the fall of 2018. Individuals were approached on sidewalks and outside of popular destinations and asked survey questions verbally.

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1 - The Heart Foundation Women and Cycling Survey, 2013.; Thanet Cycling Questionnaire, 2010.; Australian Cycling Participation Survey, 2013.

### A3.2 SURVEY METHODS

The biking survey conducted in Georgetown was based on research methods formulated by the Social Research Methods Knowledge Base to gauge residents' opinions about biking, as well as current biking conditions, needs, and barriers. This section outlines the accepted method for conducting a survey:

- 1. Choosing an appropriate survey method:** Based on population, accessibility, literacy, and the nature of the questions, a two-part intercept and online survey was chosen. To be inclusive of a range of literacy levels, intercept surveys were conducted in personal interview format, and the online survey in a written format. The online questionnaire was written in both Spanish and English, and intercept surveys were conducted by bilingual team members to ensure the Hispanic demographic in Georgetown was included.
- 2. Calculating the ideal sample size:** Sample size is dependent upon the size of the city's population that the sample is meant to represent. A margin of error of +/- 5% and a 95% confidence level are considered ideal. If the sample size is relatively small, a lower level of confidence and a higher margin of error must be selected. The ideal sample size for the population of Georgetown to achieve a 95% confidence level that the results are representative is 342.
- 3. Survey design:** It is important to consider the way questions are phrased and presented when crafting a survey. For sensitive topics, questions that are less politically charged may be ideal. Per best practices, general questions were asked first, followed by more specific and personal questions. Open ended questions that required the most time and effort were placed after shorter multiple-choice questions. Highly sensitive questions regarding salary, ethnicity and household data were last and were optional.

## Survey Report

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### 4. Collection and analysis:

- a) Data preparation - Survey responses were coded in a binary format whenever possible, and in all other cases subjective responses were retained. Subjective responses were coded by key themes.
- b) Weighting - Based on the overall gender, age, and ethnicity makeup of Georgetown, the sample collected was determined to be representative of the cycling population. With any survey, it is possible that some population segments are over-sampled while others may be under-sampled. In these cases, a scaling process would be necessary to project the true opinion of the population. Again, this was not required in analyzing survey responses as results were statistically valid to represent Georgetown.
- c) Correlation and inferences – Responses were examined to identify correlations and trends, such as a correlation between age or gender and biking preferences. Inferences were made based on the final opinion splits and correlations.
- d) Data description - Data from surveys was used to make broader inferences about biking behavior in the city. The key themes that emerged from survey data were integrated into the Bike Plan’s key themes. Results were also used to make policy recommendations.

### A3.3 SURVEY ANALYSIS

#### **Demographic Response**

Despite targeted efforts to reach underrepresented groups, the online survey still did not capture the exact gender and racial/ethnic breakdown of Georgetown.

Survey responses neared gender parity, but male responses slightly outnumbered female, and a small percentage of respondents answered “other” or did not disclose. This may be partially explained by the fact that men are more likely to cycle than women, and therefore men may have

been more likely to express interest in completing the survey<sup>2</sup>.

In proportion to the demographic breakdown of Georgetown, response rates were low from non-white ethnic and racial groups. Efforts were made to conduct a large portion of intercept surveys in predominantly Hispanic communities, and several surveys were conducted in Spanish. However, intercept surveys did not ask for racial/ethnic identification information, and for this reason survey results may under report the number of Hispanic respondents.

2 - <https://bikeleague.org/womenbike>

# Survey Report

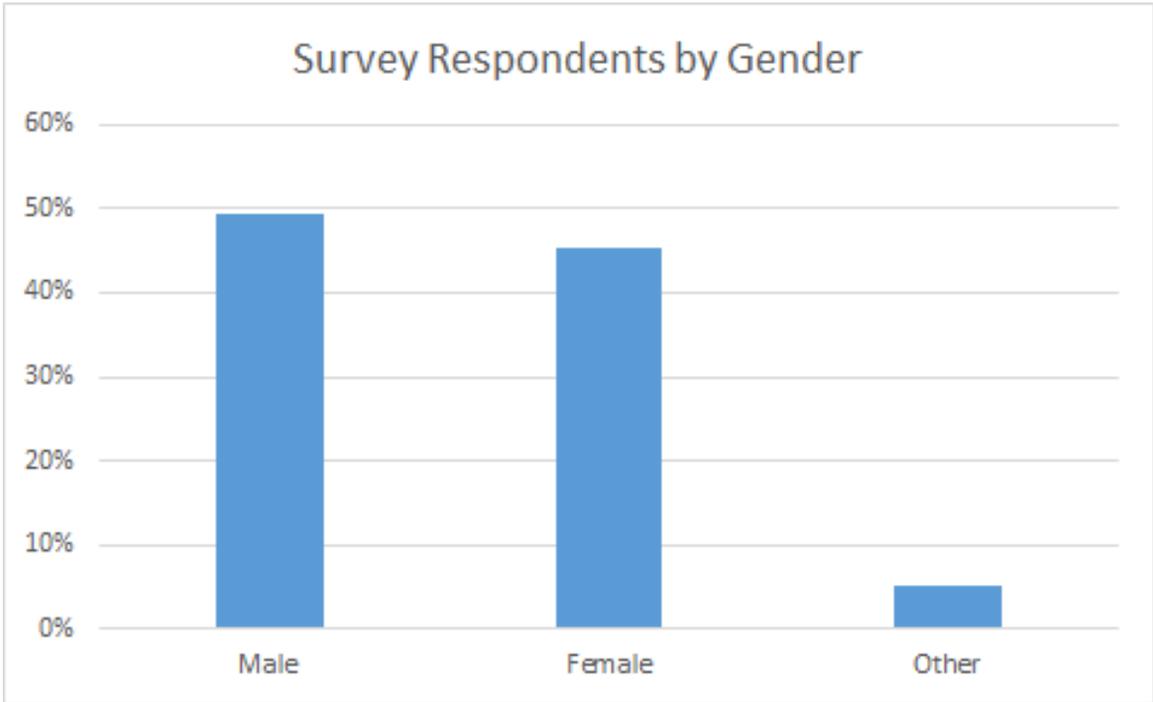


Figure 1. Survey Respondents by Gender

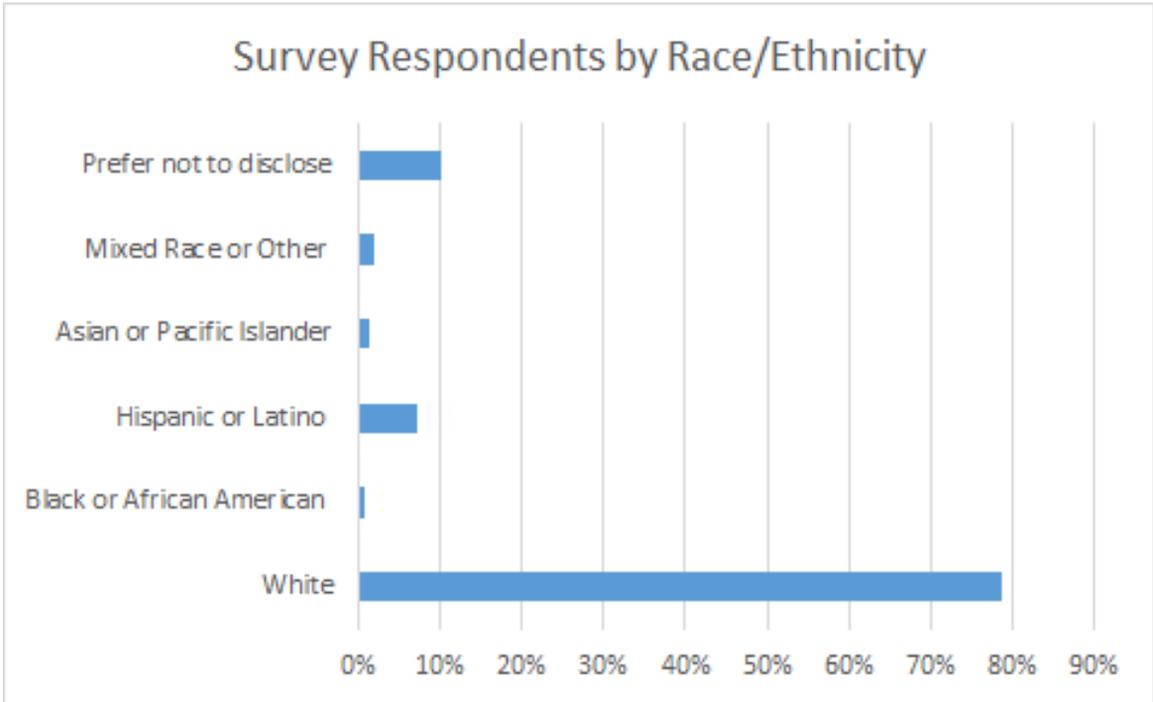


Figure 2. Respondents by Race/Ethnicity