
City of College Station

# BIKEWAY AND PEDESTRIAN MASTER PLAN UPDATE

**FINAL REPORT**
**October 2002**

## ACKNOWLEDGEMENTS

The following individuals and groups contributed to the preparation and adoption of this document.

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## 1.0 INTRODUCTION

In 2001, as part of its annual strategic plan, the College Station City Council adopted a strategy to improve bike and pedestrian friendliness in the city by constructing and maintaining infrastructure related to bike and pedestrian transportation. The implementation plan for this strategy includes three projects. Two of the projects involve constructing sidewalks and bikeways, while the one relevant to this effort is updating the bikeway master plan. The current bikeway master plan was adopted in 1992 and needs to be updated to include newly developing areas and to address the needs of recreational bicyclists and pedestrians.

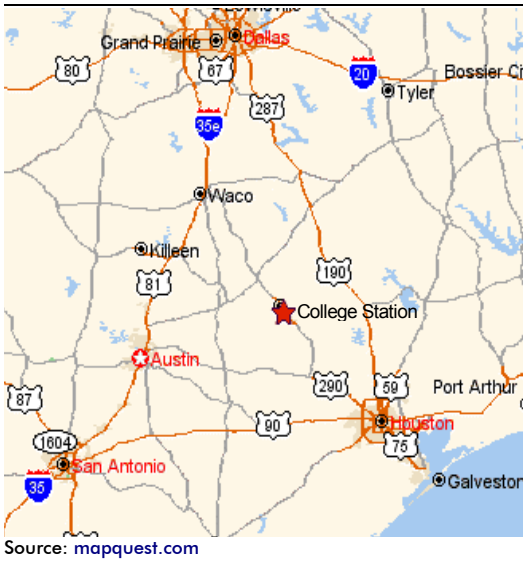
The bikeway master plan is a long-term strategy for infrastructure and support elements to enhance and improve safe utilitarian bicycling and multi-modal recreational activites in College Station. The bikeway and pedestrian system is composed of bike lanes, bike routes, and shared use (i.e., bicycle and pedestrian) paths. Because the planning and design of shared use paths should be done to accommodate pedestrians, as well as bicyclists, the bikeway master plan update also includes addressing pedestrians' needs along these multi-modal facilities. In addition to the Bikeway and Pedestrian Master Plan, the city also maintains a Sidewalk Master Plan that focuses on pedestrian movement and circulation adjacent to city streets. Its objectives and policies are recognized and adressed through that plan.

Over the past year, interested citizens and city staff have collaborated to develop this master plan update. The extensive public participation has been valuable and resulted in a better understanding of their collective vision for bicycling and pedestrian mobility as viable alternative forms of transportation in College Station. While these citizens spent a considerable amount of time participating in the development of this plan, we all understand that implementation for this plan is gradual, but based upon an aggressive, yet realistic and fiscally responsible implementation strategy.

The Bikeway and Pedestrian Master Plan report is organized into seven sections including this **Introduction**. The **Background** section provides a historical perspective of the origin of bikeway planning in College Station, where we are today, and desired outcomes of this effort. The **Objectives** section introduces the goals of the Bikeway and Pedestrian Master Plan in context of the city's Comprehensive Plan. The **Master Plan Process** section functions to inform others of the methods used to achieve these goals. The updated plans of the on- and off-street bike and pedestrian system are detailed in the **Network Facilities** section, while other support elements that will improve and encourage bicycling are explained in the **Support Elements** section. The **Implementation** section includes a list of recommendations that should be used to implement the plan. At the conclusion, several appendices include detailed information that supports the Bikeway and Pedestrian Master Plan Report.

## 2.0 BACKGROUND

The City of College Station is located in Brazos County and is centrally located among three of the ten largest cities in the United States, including Houston (100 miles), Dallas (200 miles), and San Antonio (200 miles). The City of Bryan, the Brazos County seat, abuts College Station to the north. The location of College Station relative to the Central Texas region is shown below.



Source: mapquest.com

College Station Vicinity Map

Texas A&M University (TAMU) was founded in 1876 and College Station has been growing around the univeristy ever since. Today, TAMU is the fifth largest public university in the United States and enrolls approximately 44,000 students and employs about 10,000 persons. Although the area's primary employment base and trip generator is the university, a diverse range of businesses are making their home in College Station. With this, College Station's population continues to increase while the city is growing to the south in a suburban nature.

Because of TAMU, bicycling and walking are common trip modes in College Station, particularly near the university. In 1975, the Brazos Valley League of Women Voters, the Environmental Action Council, and the A&M Wheelman Club collected data on the number of trips occurring to and from the TAMU campus[1]. They estimated that more than 10,000 bicycle trips were made on a daily basis during the fall semester. In addition, they made several findings and recommendations that are still relevant today. Examples of these include "the bicyclist does not follow proper rules of traffic and safety," "the motorist is also very negligent in his regard for the safety of the bicyclist," and "bicyclists cannot trip (activate) the signal from Timber and have long waits".

The City of College Station followed up on this study and planned to develop bike paths in the Southside and Eastgate areas. By August of 1976, the proposed paths had been signed and the city applied for federal funds to develop a more elaborate system. The funds, however, never materialized, and the council revised their policy in 1980. Many residents complained about the twenty-four hour parking restriction along the paths, so city officials only striped high volume streets such as Jersey Street (now George Bush Drive) and Southwest Parkway[2].

In 1980, the city used the revised policy to develop the first Bike Plan for College Station. The plan, which can be seen in Appendix A, includes bike paths, lanes, and routes. The bikeways developed from this plan form the foundation for today's bikeway system in College Station.

During the early 1990s, bicycling remained a very popular mode of transportation in College Station. In fact, based on the 1990 census, the Bryan-College Station metropolitan area had the third highest percentage of bicycle commuters in the United Stated with just over thirty-seven percent (top ten ranking shown in

[1] "Survey Provides Check of Traffic To Aid Bicyclists." The Eagle, Bryan-College Station, Texas, October 20, 1975.
[2] Ballew, Deborah L., *College Station 1938/1988*.

Appendix A) [3]. In 1992, the College Station Planning Department updated the Bikeway Master Plan. The resulting plan included approximately 30 miles of shared use (bicycle and pedestrian) paths, over 40 miles of bike lanes, and more than 50 miles of bike routes. In addition, the street cross-sections for collectors and arterials in the Subdivision Regulations were modified to include an option for bike lanes.

In 1993, the City of College Station prepared a Transportation Equity Act of the 21st Century (TEA-21) grant application for the College Station Bike Loop project. The College Station Bike Loop involved developing a system of shared use paths, bike lanes, and bike routes to form a loop between TAMU, several College Station parks (i.e., Lemon Tree Park, Bee Creek Park, Central Park, and Wolf Pen Creek Park and Amphitheater), and the residential areas in between. The application was accepted and College Station received just over one million dollars to develop the bike system. Today, several segments of this project have been completed, including the shared use path segment along the Bee Creek greenway between Bee Creek Park and Lemon Tree Park, as well as bike lanes on George Bush Drive between Texas Avenue and Wellborn Road.

In November 1998, Texas A&M University charged faculty, staff, students, and community leaders to develop a plan for access and parking at Texas A&M University[4]. The *Campus Access and Parking Plan* was completed in April 2000. This plan includes specific recommendations for bicycle facilities on campus, including developing a campus-wide bicycle system that connects to the community's bikeways. This plan is currently being implemented at Texas A&M University.

In the spring of 1999, the City of College Station adopted the Greenways Master Plan. This plan calls for the city to acquire greenways, such as Wolf Pen Creek, to be used as flood control areas, as well as for parks and multi-modal transportation corridors. Since this time, the city has been actively involved in acquiring, regulating, maintaining, and promoting the use of greenways in College Station. This update of the Bikeway and Pedestrian Master Plan includes a significant amount of planning for future shared use paths along these greenways.

The City of Bryan included a Bikeway Plan in their 2000 Comprehensive Plan update. This bike plan, which includes both on- and off-street facilities, provides several bicycle connections between Bryan and College Station. A copy of this plan is included in Appendix A.

The East Bypass Small Area Action Plan, adopted in August 2000, was conducted to address neighborhood issues that are unique to this area. A significant portion of this plan focuses on the need to improve bicycle and pedestrian access in the area. This plan calls for connections between the east bypass neighborhoods and to the rest of the community. Specifically, the plan calls for a connection to the College Station Bike Loop on the west side of SH 6.

Today, more than twenty-five miles of bikeways have been completed through the efforts of the City of College Station, the City of Bryan, the Texas Department of Transportation, and Texas A&M University.

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[3] Williams, James and Jan Larson. "Promoting Bicycle Commuting: Understanding the Customer." Transportation Quarterly, Vol 50, No. 3, Summer 1996 (67-78).

[4] *Campus Access and Parking Plan*, Texas A&M University, College Station, Texas, April 13, 2000.

## 3.0 OBJECTIVES

The College Station Comprehensive Plan outlines the goals and objectives that the comprehensive plan should accomplish. Because the Bikeway and Pedestrian Master Plan acts as a component of the comprehensive plan, the goals of the two plans should be consistent. Six of the comprehensive plan goals are specifically related to transportation. These goals include:

Goal 1: College Station should balance the development of all modes of transportation to assure the fast, convenient, efficient, and safe movement of people and goods to, from, and within the community while continuting to protect the integrity of neighborhoods.

Goal 2: College Station should continue to ensure the development, maintenance, and operation of a safe, efficient, and effective transportation system to serve the city.

Goal 3: College Station should continue to ensure a balanced relationship between land use development and the transportation system.

Goal 4: College Station should develop a street and parking system which ensures economically healthy cultural, historic, civic, and commercial areas.

Goal 5: College Station should provide the safe movement of pedestrians and bicyclists within College Station.

Goal 6: College Station should continue to work with the Brazos Valley Transit System and the University to provide efficient bus service to the area.

Although each of these goals do not address bicycles and pedestrians specifically, the Bikeway and Pedestrian Master Plan should strive to facilitiate these goals where possible. The specific objectives that are relevant to the master plan include the following:

Objective 1.3: College Station should continue to develop adequate, safe systems for pedestrian and bicycle movement between neighborhoods, schools, parks, retail/office areas, and the University.

Objective 2.4: College Station should continue to provide a system of bikeways and walkways throughout the city and provide incentives for the use of non-motorized transport. The city should also continue to revise and update the Citywide Bikeway Master Plan.

Objective 5.1: College Station should continue to encourage the use of alternate modes of transportation to reduce air pollution and traffic congestion, including transit, bicycle, and pedestrian.

Objective 5.4: College Station should adopt street design standards and parking policies that are "bicycle-friendly".

Objective 5.5: College Station should continue to provide bikeways between residential areas, parks, schools, Texas A&M University, and retail/employment centers.

This final product of this plan should be an implementation plan that addresses the above stated goals and objectives. The process that was used to arive at this implementation plan is summarized in the following section.

## 4.0 MASTER PLAN PROCESS

The Bikeway and Pedestrian Master Plan team designed a process to follow in updating the master plan. This process involved five separate steps, including research, scoping, public involvement, fieldwork, and master plan development. Each of these steps will be discussed further in this section of the report.

### 4.1 Research

The first step of the master plan process involved conducting research to identify what other municipalities were doing and how master plans can be implemented. There are several cities across the United States that are known for being front runners in the bikeway planning arena. Some of these cities include Portland, Oregon; Boulder, Colorado; Chicago, Illinois; and Austin, Texas.

### 4.2 Scoping

The second step of the master plan process involved detailing the scope of the master plan. In the past, the Bikeway Master Plan consisted of a map that showed the planned bicycle transportation network in College Station. The Bikeway and Pedestrian Master Plan team decided to increase the scope of the master plan in several areas.

The first area where the scope was changed involved redefining the user groups that the master plan served. In the past, this master plan focused on the needs of bicyclists only. The master plan team decided that for off-street facilities, the master plan should serve the needs of pedestrians, as well as bicyclists.

The second area where the scope was changed involved redefining what facilities are planned through the master plan. The previous master plan focused solely on the physical bicycle facility, including bike lanes, bike routes, and shared use paths. The current master plan team decided that the plan should not only define where the bicycle facilities should be located, but also on other elements that could be used to improve and encourage bicycling and walking in College Station. Some examples of this include bicycle parking, bike racks on buses, education programs to encourage safe bicycling and walking, and support materials such as bicycle and pedestrian maps.

### 4.3 Public Involvement

As with any municipal planning project, public involvement was a critical element in the Bikeway and Pedestrian Master Plan process. The team sought public input through several methods. Formally, the team held five public meetings and administered an online survey to gather system user information and preferences. Informally, the team communicated with the public throughout the process by e-mail and telephone. E-mail proved to be a successful method of communication as over one-hundred e-mails were received from citizens.

### 4.3.1 Public Meetings - Round One

The first round of public meetings consisted of two meetings held on December 10, 2001. The purpose of these meetings was to identify public perception regarding College Station's bicycle and pedestrian transportation network. This was done by dividing the thirty participants into focus groups that were facilitated by city staff. The focus group participants were asked what the positive and negative aspects are of the bikeway and pedestrian system, as well as what improvements could be made.

Source: City of College Station

Citizens Participate in Focus Groups

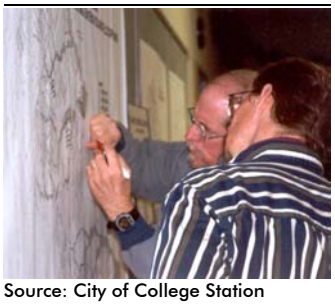
On the positive side, the general consensus was that College Station is moving in a positive direction developing a bikeway network with many on- and off-street facilities. On the negative side, citizens stated that there is a lack of connectivity between different parts of the city and that most thoroughfares are designed and maintained without bicyclists considered. In addition, it appears that there is a lack of bicycle education and respect between bicyclists and motorists, making bicycling more hazardous than it should be. Many improvement ideas were shared, including the development of bikeways to connect different parts of the city, design streets and neighborhoods with bicyclists and pedestrians in mind, as well as educate the public about bicycling. A summary of all responses is included in Appendix B.

### 4.3.2 Online Survey

After the first round of public meetings, the Bikeway and Pedestrian Master Plan team developed an online survey based on the responses from the focus groups and staff input. The purpose of the survey was to identify trip characteristics, user preferences, and reasons that citizens do not use the existing bikeway and pedestrian facilities in College Station. The survey was a great success, as almost six hundred responses were received. A summary of the survey results is included in Appendix C.

### 4.3.3 Public Meetings - Round Two

The second round of public meetings consisted of three meetings held on March 19, March 26, and April 9, 2002. The purpose of the meetings was to obtain citizen input on which roadway and greenway corridors they would like to see bikeway facilities developed along.



Source: City of College Station

Citizens Participate in Public Meeting

The focus of the March 19th and March 26th meetings was on-street bikeway facilities, where staff received citizen input using a nominal ranking exercise. For the exercise, citizens were given a list of 50 candidate street sections and a map showing the physical location of each section. These 50 street sections were included as candidates based on responses to Question 19 of the online survey that stated, "List the top three bikeway connections that you would like to see made." Longer streets were divided into multiple segments so that these streets could be evaluated independently with shorter streets. It should be noted that staff did not disqualify candidate street segments from the candidate list based on staff perceptions of the corridor's "bike-friendliness." All input was used for this exercise. This was done to get a

true understanding of the bicyclists' demand for corridors in the city. If a "bike-unfriendly" corridor was selected as a high demand corridor, staff's challenge was to provide a bike facility along a close proximity parallel corridor.

Each citizen selected their top 18 street sections and then further grouped their selections into a "top priority" group (3 selections), a "medium priority" group (6 selections), and a "low priority" group (9 selections). To finalize their selections, each citizen placed a dot on a wall chart for each street section they selected. The results of the exercise are included in Appendix D.

The focus of the final meeting on April 19th was off-street bicycle and pedestrian paths. Once again, citizens participated in a nominal ranking exercise similar to that conducted for the on-street sections. The only differences dealt with the number of candidate sections and the number of sections that each citizen could prioritize. A total of 15 greenway segments were candidates for selection and citizens were able to select nine priority projects including one "top priority" project, three "medium priority" projects, and five "low priority" projects. The results of the exercise are included in Appendix E.

In addition to conducting the nominal ranking exercise, each citizen was asked to take a shared use path preference survey. The survey asked several questions related to trail design preferences. The results of this survey are included in Appendix F.

## 4.4 Field Investigation

After the Bikeway and Pedestrian Master Plan team received input from the public, different on- and off-street routes were evaluated based on several factors, including pavement and right-of-way width, parking impacts, and safety. Staff conducted field work on bicycle to better understand the needs of bicyclists. The results of this field investigation were used in the development of the master plan facilities map.

## 4.5 Master Plan Development

The master plan development for the Bikeway and Pedestrian Master Plan can be divided into two areas. The first element includes the network facilities (i.e., shared use paths, bike lanes, bike routes) that should be planned and constructed. The second describes support elements that will enhance and encourage bicycling and walking in College Station. Some examples of these types of elements include bicycle parking facilities, bicycle user maps, and intersection improvements for bicyclists. The outcome of the planning process is discussed specifically in Section 5.0 - Network Facilities and in Section 6.0 - Support Elements.

## 5.0 NETWORK FACILITIES

The network facilities of the College Station Bikeway and Pedestrian Master Plan include shared use (bicycle and pedestrian) paths, bike lanes, and bike routes. This section of the report provides a brief discussion of each facility type and an overview of the planned additions to each type.

When designing a bikeway plan, it is very important to understand the users of the system so that the system can be planned accordingly. To gain a better understanding of bicycle facility users, the Federal Highway Administration has developed the following general categories of bicycle user types (A, B, and C) to assist transportation officials in determining the impact of different facility types and roadway conditions on bicyclists[5]:

**Type A** - Advanced or experienced riders are generally ones who use their bicycles as they would a motor vehicle. They ride for convenience and speed and want direct access to destinations with a minimum number of detours or delays. They are typically comfortable riding with motor vehicle traffic; however, they need sufficient operating space on the traveled way or shoulder to eliminate the need for either themselves or a passing motor vehicle to shift positions.

**Type B** - Basic or less confident adult riders may also use their bicycles for transportation purposes (e.g., to get to the store or visit friends), but prefer to avoid roads with fast and busy motor vehicle traffic unless there is ample roadway width to allow easy overtaking by faster motor vehicles. Thus, basic riders are comfortable riding on neighborhood streets and shared use paths and prefer designated facilities such as bike lanes or wide shoulder lanes on busier streets.

**Type C** - Children, who ride on their own or with their parents, may not travel as fast as their adult counterparts but still require access to key destinations in their community, such as schools, convenience stores, and recreational facilities. Residential streets with low motor vehicle speeds, linked with shared use paths and collector and arterial streets with well-defined pavement markings between bicycles and motor vehicles, can accommodate children without encouraging them to ride in the motor vehicle travel lane.

### 5.1 Shared-Use Paths

The American Association of State Highway Transportation Officials (AASHTO) defines a shared use path as a path physically separated from motorized vehicular traffic by an open space or barrier and within the highway right-of-way or within an independent right-of-way[6]. Users for these paths include, but are not limited to bicyclists, in-line skaters, roller skaters, wheelchair users, and pedestrians (e.g., walkers and joggers). These facilities are most commonly designed for two-way travel.

Shared-use paths can serve a variety of purposes. They can be used to provide users a shortcut through a residential neighborhood (e.g., between back to back cul-de-sac streets). In cases such as the College Station Bike Loop, they can provide a recreational opportunity or a path for commuters. These facilities can be located within greenways (e.g., along creeks, canals, active or abandoned railroad and utility rights-of-way), limited access freeways, within school campuses, and between parks. Users from all groups (A, B, and C)

[5] Federal Highway Administration, *Selecting Roadway Design Treatments to Accommodate Bicycles (Publication No. FHWA-RD-92-073)*, Washington DC, January 1994.
[6] American Association of State Highway and Transportation Officials, *Guide for the Development of Bicycle Facilities*, Washington, DC, 1999.

will most likley utilize shared use paths for recreational purposes and for commuting when the trail provides an important connection.

There are currently just over three miles of shared use paths in the City of College Station. This includes the College Station Bike Loop (shown at right), as well as other shorter segments, such as the path through the Edelweiss Estates subdivision off of Victoria Avenue. Maintenance of these facilities is dependent upon the surface type and the amenities that are included in the facility. Some shared use paths may consist of a gravel trail, while others consist of a concrete path with striping and lighting.

Source: City of College Station

College Station Bike Loop

### 5.1.1 Planned Shared-Use Path Facilities

The Bikeway and Pedestrian Master Plan includes about forty miles of planned shared use paths shown in the facilities figure on the following page. These facilities include paths along existing utility rights-of-way, abandoned railroad rights-of-way, through creeks, along roadway rights-of-way, and through public parks. Each significant section of shared use path is discussed in this section.

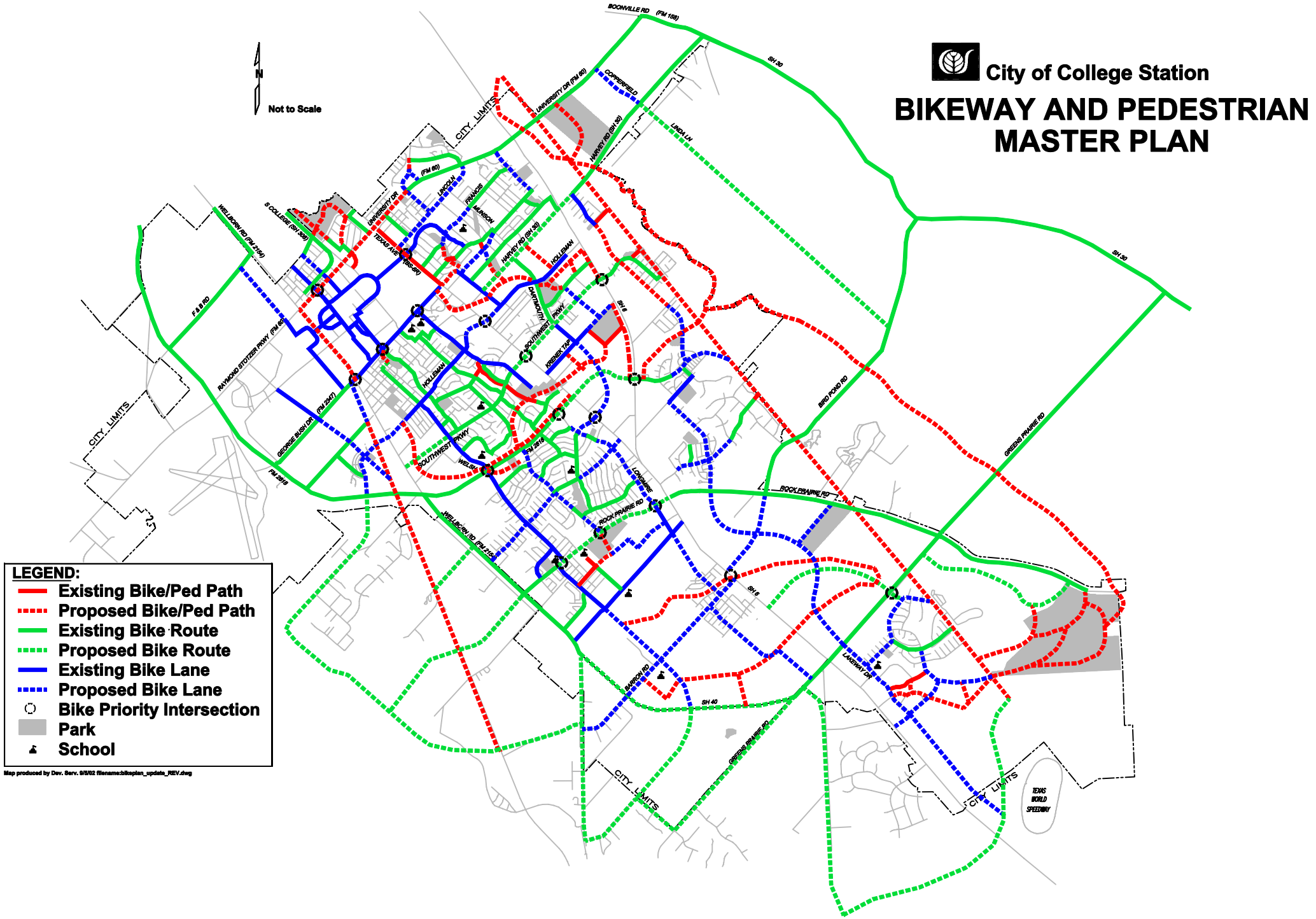
On the east side of College Station, there are two potential shared use path corridors have been identified including the **Carter Creek** and **Gulf States Utilities Right-of-Way** (ROW) corridors. These two corridors are parallel and extend approximately ten miles long connecting Lick Creek Park to Veterans Park and providing multi-modal access to the SH 6 East Bypass neighborhoods. The average separation between these two corridors is less than a mile. This proximity makes it unfeasible to develop both corridors. The intent of the plan is to construct a single shared use path through this corridor. In 1995, the Economic Development Corporation conducted the Brazos 2020 Vision plan[7]. One of the goals of this plan was to develop a continuous greenbelt in the Carter Creek floodplain from Bryan to the confluence of the Navasota River. This path would go a long way in realizing this goal.

Over four miles of paths are located within **Lick Creek Park**. These paths, which would be constructed as rural trails, are currently being planned by the City of College Station Parks and Recreation Department. Because these trails are within the park and are circuitous in nature, they would be used primarily for recreation rather than commuting, although connected to the bikeway and pedestrian system.

Between Lick Creek Park and Lakeway Drive, a shared use path would provide a direct connection between the park and the Pebble Creek residential area, as well as the College Station Business Park. This 1.5 mile path was part of the *Lick Creek Master Concept Plan*[8] developed in the Spring 2002.

East of SH 6 between Rock Prairie Road and Greens Prairie Road are the shared use paths of the proposed **College Station e-Park**. e-Park is the proposed high tech business park located east of SH 6 between Rock Prairie Road and Greens Prairie Road. This 2.5 mile system of trails follows the greenways of two branches

[7] *Brazos 2020 Vision*, Bryan/College Station Economic Development Corporation, Bryan, Texas, 1995.
[8] *Master Concept Plan of Lick Creek*, Texas A&M University, Department of Landscape Architecture and Urban Planning, College Station, Texas, Spring 2002.


City of College Station
BIKEWAY AND PEDESTRIAN MASTER PLAN
Not to Scale
N
BOONVILLE RD (FM 158)
SH 30
COPPERFIELD
UNIVERSITY DR (FM 60)
HARVEY RD (SH 30)
LINDA LN
CITY LIMITS
(FM 60)
LINCOLN
FRANCIS
MURSON
S COLLEGE (SH 308)
UNIVERSITY DR
TEXAS AVE (SH 6 BUSINESS)
WELLBORN RD (FM 2154)
F & B RD
RAYMOND STOTZER PKWY (FM 60)
HOLLEMAN
DARTMOUTH PKWY
SOUTHWEST PKWY
KRENEK TAP
SH 6
BIRD POND RD
GREENS PRAIRIE RD
GEORGE BUSH DR (FM 2347)
FM 2818
WELSH
LONGMIRE
ROCK PRAIRIE RD
WELLBORN RD (FM 2154)
BARRON RD
SH 40
LAKEWAY DR
TEXAS WORLD SPEEDWAY
LEGEND:
Existing Bike/Ped Path
Proposed Bike/Ped Path
Existing Bike Route
Proposed Bike Route
Existing Bike Lane
Proposed Bike Lane
Bike Priority Intersection
Park
School
Map produced by Dev. Serv. 9/5/02 filename:bikeplan_update_REV.dwg

of Lick Creek. The e-Park trail system could be used for both recreational purposes within the business park, as well as multi-modal transportation between the Pebble Creek residential area to the southeast, and the residential neighborhoods along Barron Road to the northwest. A potential grade separation under SH 6 could provide a safe and much needed connection across the freeway at this location. This design could be incorporated into the design of the SH 6/Barron Road interchange that the city is currently working with the Texas Department of Transportation (TxDOT) to design.

Another system of shared use paths north of the proposed SH 40 provides a connection between the Castlegate residential areas and the proposed development on the northwest quadrant of the SH 6/Greens Prairie Road. This 2-mile long system of trails will also provide a safe connection between these residential areas and the proposed future College Station Independent School District high school at the intersection of Barron Road and Victoria Avenue. These trails are detailed in the *Master Concept Plan for Castlegate*[9].

On the west side of College Station, the abandoned **IG&N Railroad ROW** shared use path provides a direct connection from Capstone Drive to Texas A&M University. This 3.5 mile trail will likely serve recreational needs as well as transportation needs as it provides a direct route to TAMU, the primary trip generator in the area.

Several trails are also located in the north side of College Station. These include the remaining sections of the **College Station Bike Loop** that will complete the segment between Bee Creek Park and Central Park. This project, which is partially funded from the TEA-21 grant from 1993, will provide an underpass at Texas Avenue. The trails of **Wolf Pen Creek** are also included as shared use paths. A portion of these trails are currently under construction while the remaining segments are being designed. Citizen input has indicated that their top greenway connection priority is the connection between Wolf Pen Creek and Texas A&M University. One shared use path will connect the Lincoln Center and A&M Consolidated High School then continuing along FM 2818. One spur of this path also connects across FM 2818 at Welsh Avenue to the public library and George Fitch Park, while another connects to the Bike Loop in Bee Creek Park by way of a drainage easement. The remaining segments of shared use paths include sidewalks around TAMU as well as along University Drive between Tarrow Street and Texas Avenue. These projects are currently under design respectively by the Texas Department of Transportation and the City of College Station.

[9] *Master Concept Plan of Castlegate*, Texas A&M University, Department of Landscape Architecture and Urban Planning, College Station, Texas, Spring 2002.

## 5.2 Bike Lanes

AASHTO defines a bike lane as a portion of a roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicycles[6]. Bike lane markings can increase a bicyclist's confidence in motorists not straying into their path of travel. Also, motorists are less likely to swerve to the left out of their lane to avoid bicyclists on their right. Bike lanes should be one-way facilities and carry bike traffic in the same direction as adjacent motor vehicle traffic.

Bike lanes are primarily used by A and B users for the purpose of transportation rather than recreation. There are currently approximately 25 miles of existing bike lanes in College Station. Some examples of these types of facilities include George Bush Drive between Texas Avenue and Wellborn Road, College Main, and Graham Road between the SH 6 West Frontage Road and Wellborn Road.

Source: City of College Station

College Main Bike Lane

Maintenance of these facilities involves repainting the pavement stripes and markings once every few years, maintaining the bike lane signs as needed, and routinely sweeping the bike lane to keep the lane free of debris. Because the impact to the pavement within the bike lane is minimal, the pavement is maintained according to demand created by motor vehicles.

### 5.2.1 Planned Bike Lane Facilities

Overall, the master plan includes about 20 miles of planned bike lanes as shown on the facilites map. The majority of the existing and planned bike lanes will provide long transportation corridors for bicycle commuters throughout College Station. The master plan team identified seven bike priority corridors that are best served by bike lanes. These corridors, which will connect residential areas, commercial areas, retail areas, as well as Texas A&M University together, include the following:

- Anderson Street/Longmire Drive/Decatur Drive
- Barron Road
- Dartmouth Drive
- George Bush Drive/George Bush Drive East
- Holleman Drive
- Lakeway Drive/Stonebrook Drive/Appomattox Drive
- Welsh Avenue/Victoria Avenue

It should be noted that the Anderson Street bike lane will be connected to Longmire Court through the Bee Creek Park/Lemontree Park portion of the College Station Bike Loop with a pedestrian/bicycle bridge over Bee Creek. City Council decided not to continue the Longmire Drive bike lane between Valley View and Airline at this time due to a safety concern at the intersection of FM 2818 and Longmire Drive. They stated that once the pedestrian/bicycle bridge is constructed, they will revisit the bike lanes along this section of Longmire Drive. The future Longmire/Anderson/Decatur bikeway, in addition to the Welsh

Avenue/Victoria Avenue bikeway, will provide continuous north/south bikeway thoroughfares connecting south College Station at SH 40 to north College Station at TAMU. These corridors will be key in providing mobility for bicyclists much like Texas Avenue and Wellborn Road do for motor vehicles.

The remaining bike lane segments including Edelweiss Avenue, Arnold Road, Woodcreek Drive, Walton Drive, and Kyle Avenue provide for safe bicycle travel on shorter trips between residential areas, parks, and schools.

## 5.3 Bike Routes

A bike route is a roadway that is shared between bicycles and motor vehicles. These facilities may be either signed or unsigned. In either case, a designated bike route should provide either a wide curb lane (at least fourteen feet) or a paved shoulder so motor vehicles have additional maneuvering space when passing a bicyclist[10].

A signed bike route should indicate to bicyclists that particular advantages exist to using these routes compared to other non-desginated routes[6]. Signing also serves to advise motor vehicle drivers that bicycles are present. In most cases, signed shared roadways provide continuity to other bicycle facilities (bike lanes or shared use paths), and/or designate preferred routes through high demand corridors.

There are currently over ten miles of signed bike routes in College Station. An example of a signed bike route is along Francis Drive. The cost to maintain these facilities is minimal as the only elements added to the roadway are bike route signs placed about every quarter mile. Unlike bike lanes, pavement markings are not used and due to motor vehicles utilizing the entire lane when bicyclists are not present, the amount of debris in the lane is minimized.

Source: City of College Station

Francis Drive Bike Route

### 5.3.1 Planned Bike Route Facilities

The Bikeway and Pedestrian Master Plan provides for almost 80 miles of existing and planned bike routes as shown on the facilities map. The majority of these facilities are along low volume roadways such as Greens Prairie Road (east of SH 6) or state highway facilities that have full improved shoulders. While most bike routes within the developed area of College Station would be signed and used by commuters, the majority of the regional routes (e.g., FM 2818) would remain unsigned and be used predominantly for long recreational rides. Placing these unsigned routes on the Bikeway and Pedestrian Master Plan is important because it documents bicyclists' needs when future roadway construction and reconstruction projects occur. In addition, these routes in undeveloped areas could be considered for bike lanes in the future depending on the surrounding uses, intensity, and proximity to schools, and parks.

[10] American Association of State Highway and Transportation Officials, *Guide for the Development of Bicycle Facilities*, Washington, DC, 1999.

## 6.0 SUPPORT ELEMENTS

In past bikeway planning efforts, the bikeway plan consisted specifically of a map document showing location and types of each bikeway facility. Although this portion of the Bikeway and Pedestrian Master Plan is still the most significant part of the plan, many issues have been identified that cannot be addressed through the facility map alone. Specific issues that were identified through the master planning process (i.e., focus groups, online survey, and direct citizen communication) include bicycle education and safety, bicycle parking, bike racks on buses, and traffic signal operations to name a few. Each of these issues will be discussed separately in this section.

### 6.1 Bicycle Education and Safety

The most critical issue that was identified through the planning process was a lack of bicycle education and safety for motorists and bicyclists. Many citizens that participated in the focus groups and online surveys stated that there is a tremendous lack of respect between motorists and bicyclists. Based on the October 1975 Eagle article *Survey Provides Check of Traffic to Aid Bicyclists*, this has been an issue for at least thirty years and common in a growing community[11]. Furthermore, about forty percent of online survey respondents stated that one reason that keeps them from bicycling more is the fear of accidents or lack of personal safety. This is an issue that must be addressed through education and awareness. Therefore, the planning team recommends that the city conduct and/or facilitate a bike education and awareness campaign that targets both motorists and bicyclists.

Source: Unknown

Example of Bike Rodeo

### 6.2 Bicycle Parking

The lack of secure bicycle parking in College Station inhibits citizens from bicycling more. Based on the online survey results, one-third of the respondents stated that the reason they do not use their bicycle on retail trips is because shopping centers and restaurants lack parking facilities. One area where bicycle parking could be improved is the Northgate district. This area receives more bicycle traffic than other areas of College Station due to the proximity of TAMU, retail establishments focused toward students, and student residential property.

This situation is not unique to College Station. To solve their bicycle parking dilemma, the City of Boulder, Colorado, home of the University of Colorado, has increased bicycle parking downtown by attaching old automobile steering wheels onto the side of motor vehicle parking meters. In addition, each steering wheel has a "BICYCLES PARK HERE – CITY OF BOULDER" plaque placed in the center to tie the theme together. This program, implemented in October 1996, has proven to be a successful and inexpensive method of providing a place to keep bicycles secure, upright, and out of the pedestrian right-of-way[12].

Source: City of Boulder

Bicycle Parking In Boulder, Colorado

[11] "Survey Provides Check of Traffic To Aid Bicyclists." The Eagle, Bryan-College Station, Texas, October 20, 1975.
[12] "Recycled Bike Racks", *City of Boulder Colorado Official Home Page*, www.ci.boulder.co.us/gettingthere/bike/bike_racks.html, July 2002

The Bikeway and Pedestrian Master Plan team recommends that the City of College Station identify areas of the city where bicycle parking should be increased and explore opportunities such as this to increase parking and security.

## 6.3 Bike Racks on Buses

In addition to bicycles and pedestrians having a higher mode share than the average Texas city, transit has a relatively high share due to transit services related to TAMU. In addition, the The District provides transit service within the College Station/Bryan metropolitan area. During the Fall semester of 2001, TAMU Bus Operations reported ridership numbers as high as 29,000 trips per day[13]. Many transit agencies and universities provide bike racks on buses to give patrons the opportunity to transport their bicycles. This benefits both the transit user and the transit agency by expanding the service area associated with each transit stop.

Source: Unknown

Example of Bike Racks on Buses

Two questions of the Bicycle and Pedestrian Online Survey polled respondents of their use of local transit services (summarized in Appendix C). Thirty-nine percent of the respondents currently use transit services provided by TAMU. An additional five percent of the respondents indicated that they would use the transit service if the buses were equipped with bike racks. This results in a potential ridership increase of more than ten percent. While only one percent of respondents currently use services provided by The District, ten percent stated that they would use the service if bike racks were provided. While these ridership increases are most likely higher than what would actually be expected, ridership could be increased with the addition of bike racks on buses.

City staff has spoken with staff of both TAMU and the The District and both agencies are currently exploring opportunities to provide bike racks on at least a portion of their bus fleets. The Bikeway and Pedestrian Master Plan team recommends that TAMU and The District implement a bike racks on buses pilot program to determine if this amenity can enhance transit service and increase ridership.

## 6.4 Traffic Signal Operations

One of the most common problems identified by bikeway system users identified through focus groups and the online survey was the inability of traffic signals to detect bicyclists. This issue not only leads to frustration for bicyclists, but could also result in hazards if the cyclist attempts to cross an intersection during the red phase of the signal. This, in turn, builds disrespect between the bicyclists and motor vehicle drivers. Based on a 1975 Bryan/College Station Eagle article, this has been a problem since the 1970's and has yet to be solved[14].


Source: City of Portland

Signal Marking for Bicyclists

City staff conducted research on different methods of detecting bicyclists presence at signalized intersections with loop detectors and have identified several alternatives.

[13] Jackson, Gary, Texas A&M University – Parking, Transit, and Transportation Services Assistant Director. Telephone
[14] "Survey Provides Check of Traffic To Aid Bicyclists." The Eagle, Bryan-College Station, Texas, October 20, 1975.

These include adjusting the sensitivity of pavement loop detectors and providing pavement markings directing bicyclists where to stop to be detected by the traffic signal (shown at right). While these solutions are the most financially feasible, there are other potential solutions, including specialized loop detectors and locating pedestrian push buttons where bicyclists can utilize them. It should be noted that all new traffic signals installed use video cameras for detection. These cameras are capable of detecting cyclists without special consideration for bicyclists.

The Bikeway and Pedestrian Master Plan team recommends that city traffic operations staff explore the most effective solution that can accurately detect bicyclists at these intersections. Once identified, measures should be taken to implement the best solution at designated signalized intersections with high-bicycle-demand. These intersections are denoted on the facilities map as bike priority intersections.

## 6.5 Residential Subdivision Design

Another issue faced by pedestrians and bicyclists today is the design of residential neighborhoods without providing adequate connectivity for these system users. Based on current development trends, the most common subdivision design involves numerous cul-de-sacs that are intended to reduce the amount of vehicular "cut through" traffic. While this design feature may be successful at decreasing unwanted motor vehicle traffic, pedestrians and bicyclists must deal with walking very long distances to get to neighbors' homes or nearby thoroughfares for shopping, recreation, etc. This, in turn, discourages non-vehicular modes in favor of the motor vehicle.

Source: Best Development Practices[15]

Example of Pass Throughs

In order for these modern neighborhoods to be designed with the pedestrian in mind, the sidewalk system should be supplemented with pass-through paths between cul-de-sacs and at mid-block locations for blocks longer than 800 feet[15]. Although these access ways are referenced within the Subdivision Regulations in Section 8(L), there are not clear indications of when they should be required. The Bikeway and Pedestrian Master Plan team recommends that the Subdivision Regulations include direction on when these access ways should be required.

[15] Ewing, Reid, *Best Development Practices*, American Planning Association, Chicago, IL, 1996.

## 6.6 Bikeway System Signage

To assist bikeway users, many municipalities provide supplemental plaques with the bikeway sign (i.e, shared use path, bike lane, or bike route). These supplemental plaques provide a route designation or destination information that assists the user in navigating through the area. An example of this is shown in the figure to the right. Because College Station has such a transient population due to TAMU, the Bikeway and Pedestrian Master Plan team recommended that College Station provide supplemental route or destination information bith bikeway signing. Potential destinations that could be signed in our city include regional parks (e.g., Wolf Pen Creek Park, Central Park, Veterans Memorial Park, Lick Creek Park), Texas A&M University, the George Bush Presidential Library, as well as major retail and entertainment areas (i.e., Northgate).


Source: Unknown

Example of Bikeway System Signage

# 7.0 IMPLEMENTATION

## 7.1 Acquisition

The first step in the development of any bike/pedestrian way is the acquisition of right-of-way. While roadway projects are the driving forces behind the development of bike lanes and bike routes, the development of a shared use path is usually independent of any roadway project and therefore requires the acquisition of right-of-way independently. The actions stated below provide a means to aquire the rights-of-way for bikeway and pesdestrian projects that are not ancillary to roadway projects.

1. Action: Accept dedications that are consistent with the planned bikeways and pedestrian connections specified in this plan.
   *Responsible Party:* *Development Services Department*
   *Supporting Party:* *Parks and Recreation Department*
   *Target Date:* *Immediately*

2. Action: Coordinate the priorities of this plan with the priorities of the greenways acquisition program where greenways are involved.
   *Responsible Parties:* *Public Works and Development Services Departments*
   *Target Date:* *Immediately*

3. Action: Develop guideline incentives that encourage developers to voluntarily dedicate lands that promote bikeway and pedestrian connections between developments.
   *Responsible Party:* *Development Services Department*
   *Target Date:* *Spring 2003*

## 7.2 Regulation

Although very little regulation is required once bike and pedestrian ways are constructed, some regulations would facilitate the development of these access ways when they are linked to a private development. The action stated below provides regulation for the development of access ways within private residential developments.

1. Action: Amend the city's Subdivision Regulations to provide guidelines on when pedestrian access ways should be required within a residential area or between residential areas and pedestrian ways.
   *Responsible Party:* *Development Services Department*
   *Target Date:* *Spring 2003*

## 7.3 Construction, Maintenance, and Operations

Once a bikeway and/or pedestrian project is planned, it only becomes a reality when funds are secured and the project is constructed. In addition, measures must be taken to ensure that the facilities are maintained and operated effectively. The actions statements below provide for construction and effective maintenance and operations of bikeway and pedestrian facilities.

1. Action: Secure adequate funding for the development (design and construction) of shared use paths through annual Service Level Adjustments (SLA), the Capital Improvement Program (CIP), and other possible funding sources (listed in Appendix G).
   *Responsible Parties:* *Development Services, Public Works, and Parks and Recreation Departments*
   *Target Date:* *As grant opportunities arise and with 2003 CIP plan*

2. Action: Survey the supply and demand of bicycle parking in different retail areas of College Station. Identify appropriate methods of supplying bicycle racks through public or private funds.
   *Responsible Party:* *Development Services Department*
   *Supporting Party:* *Public Works Department*
   *Target Date:* *Fall 2003*

3. Action: Implement Bikes-on-Buses program on a limited number of routes for TAMU and The District buses.
   *Responsible Parties:* *TAMU Bus Operations and The District*
   *Target Date:* *Fall 2004*

4. Action: Develop alternatives for detecting bicyclists at signalized intersections and deploy the best technology at selected intersections.
   *Responsible Party:* *Public Works Department*
   *Supporting Party:* *Development Services Department*
   *Target Date:* *Summer 2003*

5. Action: Develop scheme for numbering bike routes or providing destination information along bikeways in College Station and deploy along priority routes.
   *Responsible Party:* *Public Works Department*
   *Supporting Party:* *Development Services Department*
   *Target Date:* *Spring 2004*

## 7.4 Education/Encouragement

After bike and pedestrian projects are constructed, measures should be taken to encourage the public to use the system and to use it in a way that is safe for other bicyclists and pedestrians, as well as motor vehicle drivers. The action stated below provides for this.

1. Action: Develop a bicycle awareness and education campaign.
   *Responsible Party:* *Development Services*
   *Supporting Parties:* *Public Relations and Marketing Department, Public Education Staff, Local Bicycle Advocacy Groups, College Station Police Department*
   *Target Date:* *Summer 2003 (development)*
   *Fall 2003 (implementation)*

## APPENDIX A – HISTORICAL INFORMATION

Survey Provides Check of Traffic To Aid Bicyclists, The Eagle, October 10, 1975, Bryan/College Station, Texas.

The Eagle 10-20-75 Bryan-College Station, Texas

# Survey Provides Check of Traffic To Aid Bicyclists

The A&M campus attracts many bicyclists from the Bryan-College Station area. In fact the number of bicycle trips to the main campus is more than 10,000 daily.

The 10,000 figure comes from a survey conducted by the League of Women Voters, the Environmental Action Council and the A&M Wheelman Club on Sept. 30 Eleven entrances to the main campus were monitored by 70 volunteers from these three groups and others on campus interested in bicycling.

The day was clear and ideal for bicycle riding.

Surveyors were stationed at New Main Drive, South Bizzell, Throckmorton, South Houston, Joe Routt Drive, Old Main Drive, North Houston, Ashbury, Ireland, Spence and North Bizzell.

In addition to determining the large number of bike trips made in a day, the group of surveyors also learned that "the bicyclist does not follow proper rules of traffic and safety."

"The motorist is also very negligent in his regard for the safety of the bicyclist," the surveyors observed.

It was also noted that there are even more bicycle trips made on Monday, Wednesday and Friday due to the higher number of classes on those days. The Tuesday survey was conducted on that day because of the availability of the volunteers, but an earlier survey by the League of Women Voters showed that traffic on Friday, Sept. 19 was approximately 20 per cent greater than traffic on Tuesday, Sept. 16.

The surveys were conducted between the hours of 7:30 a.m. and 6:00 p.m. There were no counts made of bicycles or pedestrians heading out to the veterinary complex.

The surveyors have subsequently made recommendations on specific problems on each of the sites observed, which are as follows:

1. New Main Drive-Bizzell Intersection — Bicyclists have difficulty negotiating the intersection with regards to where to turn from which lane.

2. S. Bizzell-Jersey-Timber Intersection — A. Automobiles cut in front of bicycles on their turns. B. Bicyclists cannot trip the light signal from Timber and have long waits. C. Heavy gravel on Timber causes cars to skid when they stop, and bicycles have poor traction. D. The green light for Timber is too short for bicycles to cross the intersection safely. E. Cars turning right onto Jersey endanger the bicyclists traveling on Jersey. F. Bicyclists exiting S. Bizzell do not know what lane to get into to go straight since the right traffic lane can go straight or turn right.

3. Throckmorton-Jersey-Dexter Intersection — Bicyclists do not stop when exiting either Dexter or Throckmorton. Many drivers, and virtually all bicyclists fail to signal for turns. A pedestrian crosswalk is suggested for walkers' safety.

4. S. Houston-Jersey Intersection — Because nearly all bicycles at this intersection must turn, the traffic patterns are totally disordered. Bicyclists neither signal nor stop, cut into the oncoming traffic in the left lanes, and weave between the cars.

5. Joe Routt Drive-FM 2154 Intersection — 30 per cent of the pedestrian traffic used the crosswalk.

6. Old Main Drive-FM 2154 Intersection — Although the traffic of pedestrians and bicycles is low, the intersection is very dangerous for those trying to cross FM 2154. The 40 mph speed limit, which is unpatrolled, contributes to the danger. At 5:00 p.m. it is especially dangerous for all traffic including cars and those in the neighboring parking lots.

7. N. Houston-University Drive Intersection — There is a 5-6:1 ratio of bicycles using the street compared to the sidewalk. Safety of the bicyclists would be improved if there was a better way for the bicycles to cross University between College Main and N. Houston.

8. Asbury-University Drive-Tauber Intersection — The majority of the bicycle traffic entering Asbury crosses University from Tauber.

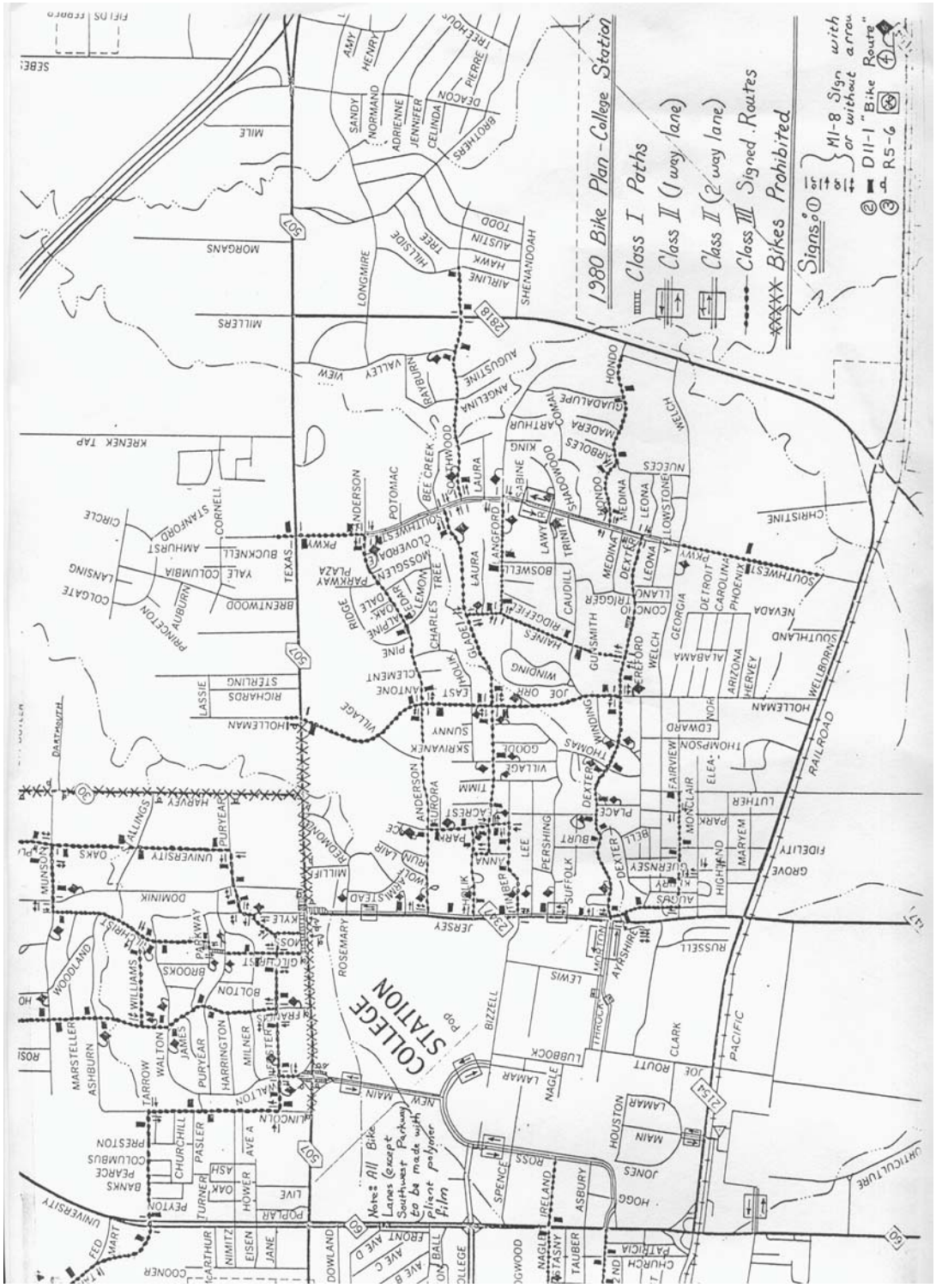
9. Ireland-University Drive-Nagle Intersection — Pedestrians and bicyclists are endangered at this corner at busy times even when in the crosswalks.

10. Spence-University Drive Intersection — Most of the traffic comes from the Skaggs-McDonalds entrance. A substantial number of bicycles (not counted) turn off Spence to cut through the parking lot between the Cyclotron and University Drive.

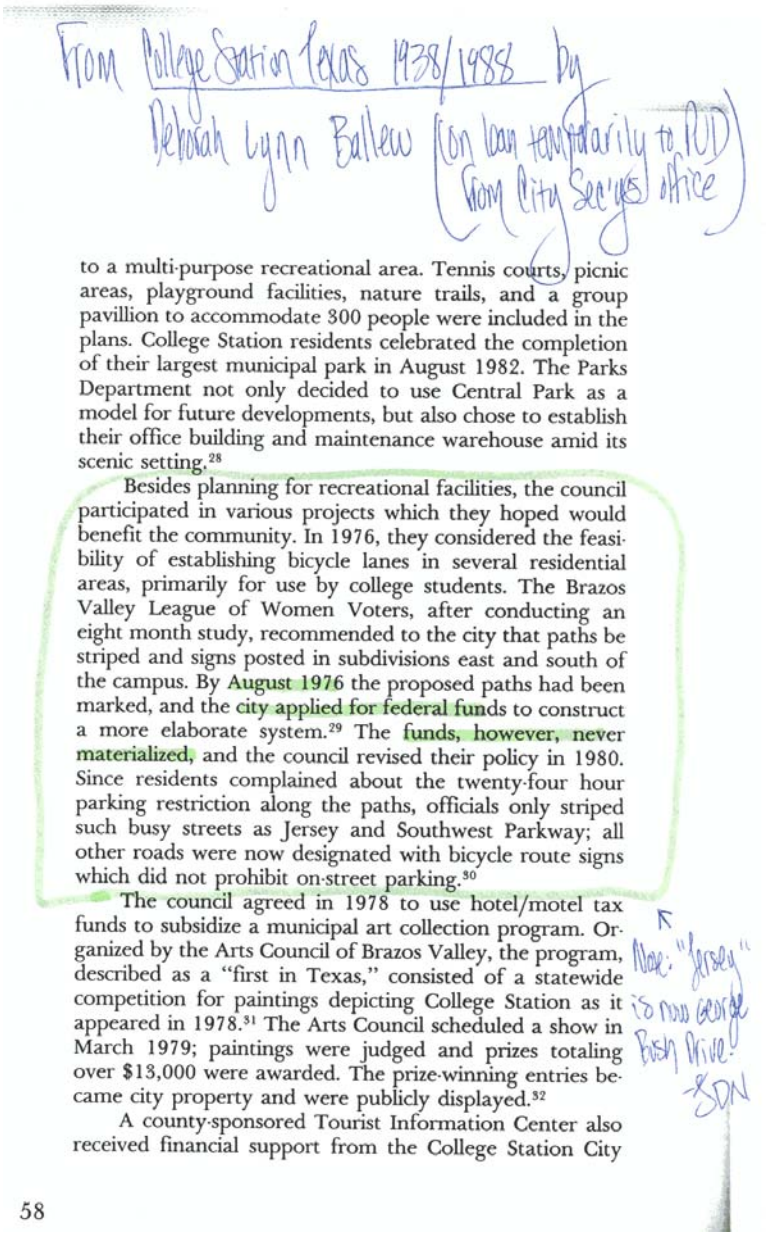
11. N. Bizzell — The counting place was at the intersection of the pathway from the College View apartments and N. Bizzell where the crosswalks have been placed at the entrance to parking lot 50. This area is very congestted from 7:30-8:30 a.m. — over 400 pedestrians, 225 bicycles and countless cars. An alternate entrance to lot 50 during this time would help greatly. About twice as many bicycles as pedestrians use the pathway, indicating the need for a separation for these two groups. About five times as many bicycles use the pathway as use the street. Some sort of guarded crosswalk is needed at the College View apartments exit and University Drive to protect the over 2200 pedestrians and bicyclists crossing this place daily. A break in the curb is suggested on the sidewalk along Bizzell heading north along the Zachry building so that the bicycles do not travel north in the street against the traffic.

As a final comment it is noted that there is substantial bicycle traffic along the north and south sides of campus. It is highly recommended that a bicycle path be provided on the campus property off of the street along Jersey and University.

1980 College Station Bikeway Plan



An Excerpt from *College Station, Texas 1938/1988*, by Deborah Lynn Ballew



From College Station Texas 1938/1988 by Deborah Lynn Ballew (on loan temporarily to PUD from City Sec'ys office

to a multi-purpose recreational area. Tennis courts, picnic areas, playground facilities, nature trails, and a group pavillion to accommodate 300 people were included in the plans. College Station residents celebrated the completion of their largest municipal park in August 1982. The Parks Department not only decided to use Central Park as a model for future developments, but also chose to establish their office building and maintenance warehouse amid its scenic setting.[28]

Besides planning for recreational facilities, the council participated in various projects which they hoped would benefit the community. In 1976, they considered the feasibility of establishing bicycle lanes in several residential areas, primarily for use by college students. The Brazos Valley League of Women Voters, after conducting an eight month study, recommended to the city that paths be striped and signs posted in subdivisions east and south of the campus. By August 1976 the proposed paths had been marked, and the city applied for federal funds to construct a more elaborate system.[29] The funds, however, never materialized, and the council revised their policy in 1980. Since residents complained about the twenty-four hour parking restriction along the paths, officials only striped such busy streets as Jersey and Southwest Parkway; all other roads were now designated with bicycle route signs which did not prohibit on-street parking.[30]

The council agreed in 1978 to use hotel/motel tax funds to subsidize a municipal art collection program. Organized by the Arts Council of Brazos Valley, the program, described as a "first in Texas," consisted of a statewide competition for paintings depicting College Station as it appeared in 1978.[31] The Arts Council scheduled a show in March 1979; paintings were judged and prizes totaling over $13,000 were awarded. The prize-winning entries became city property and were publicly displayed.[32]

A county-sponsored Tourist Information Center also received financial support from the College Station City

Now: "Jersey" is now George Bush Drive! -SDN

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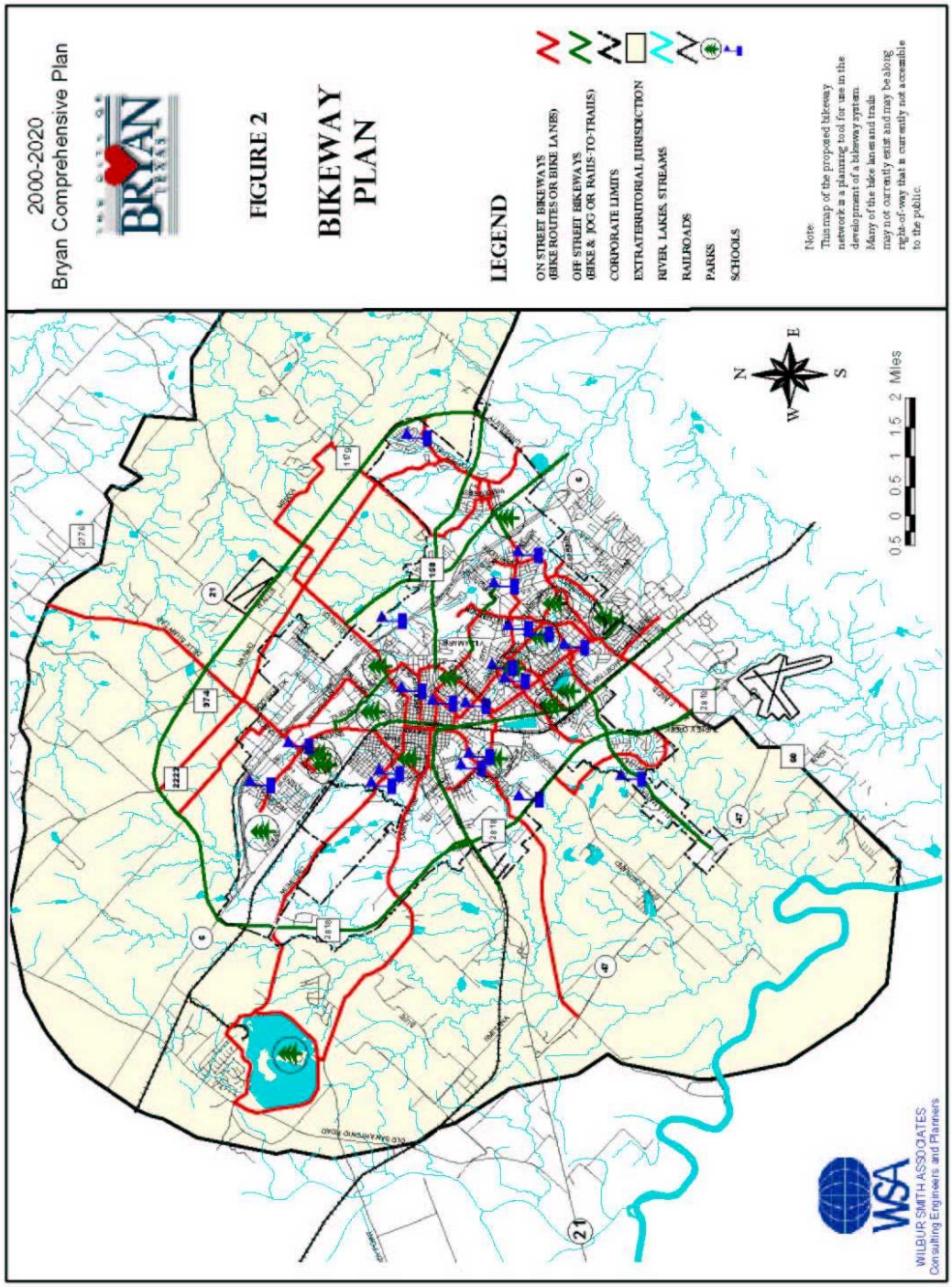
Williams, James and Jan Larsen. "Promoting Bicycle Commuting: Understanding the Customer." Transportation Quarterly, Vol 50, No. 3, Summer 1996 (67-78).

**Top Ten Metropolitan Areas For Bicycle Commuters**

| Metropolitan Statistical Areas | Bicycle Commuters per 1000 |
|---|---|
| Chico-Paradise, CA | 49.7 |
| Santa Barbara, CA | 41.2 |
| Gainesville, FL | 35.2 |
| Eugene-Springfield, OR | 32.9 |
| Bryan-College Station, TX | 37.2 |
| Madison, WI | 29.5 |
| Boulder-Longmont, CO | 24.5 |
| Champaign-Urbana, IL | 21.6 |
| Sacramento, CA | 19.6 |
| Santa Cruz, CA | 19.1 |

Source: 1990 Census, PUMS file, 1% sample

Bryan Bikeway Plan, *City of Bryan 2000-2025 Comprehensive Plan*



## APPENDIX B – FOCUS GROUP COMMENTS

On December 10, 2001, the City of College Station Bikeway and Pedestrian Master Plan team hosted two public meetings to better understand perceptions of the College Station bikeway and pedestrian system. The citizens that attended were divided into focus groups. Each focus group was asked to discuss three questions, including 1) "What are the positive aspects of bicycling/walking in College Station?", 2) "What are the negative aspects of bicycling/walking in College Station?", and 3) "What improvements could be made to the bike and pedestrian system in College Station?". The responses provided are summarized in this section.

### Positive Aspects:

*On-Street Lanes/Routes*

- At TAMU there are bike lanes
- Awareness of the bike lanes
- Bike lane route to TAMU was the major deciding factor in purchasing our home and a major factor in choosing College Station over Bryan
- Bike lanes (existing)
- Bike lanes are good where they exist
- Bike lanes really help safe bicycling (where they are present)
- Good lanes around campus
- Good system on campus
- Most bike lanes work pretty well, George Bush Drive is a good example.
- Now on both sides of the road
- Roads for the most part are well maintained. They are not laden with potholes as they are in Bryan
- Shoulders on some roads (potential for lane)
- Some of the high-speed routes have shoulders (2818 primarily)
- The bike lane system is reasonably well established in the North South direction and it's great that these do extend South to the newer neighborhoods (south of campus)
- There appears to be good routes into the University from the high density student neighborhoods
- Useful where they exist. (Anything is better than nothing)
- Well marked and easily accessed
- Wide roads (potential for lane)
- Wide streets
- You have bikeways and bike paths. San Marcos doesn't have them

*Off-Street Paths*

- Future Bike Loop.
- Great greenway at Lemon Tree Park
- Loop, such that it is, is nice
- New bike loop sections in Lemon Tree, Bee Creek, Central Park, & Thomas Park are the right idea
- New off street paths nice for recreation
- That some short paths and trails already exist

*Connectivity*

- Convenient to areas where I live
- I find the North / South bikeways to be very good, especially between Welborn and Texas. Very difficult to cross Texas
- Looking towards connecting areas, schools, shopping, etc. together with routes
- Some routes have continuity
- You correctly see that we need to connect outdoor centers (like the parks)

*General*

- Basically clean with little debris

- City Planning? – Receptivity
- General willingness on the part of the City to think about improvements
- Great potential for improvement
- Growing interest in improvement
- Incorporating not only TAMU but parks and schools
- It's a good start! Given the size of the community, you've done a lot
- It's good to have the few that we do have, especially the minimal number of sidewalks
- Looking to the future and activity planning for bikeways
- Pedestrian facilities are too limited to comment on, where bike lanes exist they are great
- Pedestrian facilities seem limited by suburban design of the community, there is no downtown
- Possibilities to walk and / or bike to work, school
- Recreation
- Relative to most of Texas, quite a bit of bike paths, routes, etc.
- That it exists in some form
- That some exist and they (the city) are looking to improve them
- The overall organization around the immediate areas of campus
- The present system addresses a variety of users
- Use of variety of structures to address needs of bicyclists (bike paths, lanes, routes, etc.)
- You are making an effort to improve
- You have a department working on it
- You have a lot of people that ride bikes and walk

*Design Elements*
- The signage is pretty good and accurate
- Usually surface is smooth
- Usually traffic signal works for bike
- Usually well marked

*Education/Safety*
- Bike to work day helps awareness by public
- Good lighting
- Large number of bikes on the road, increase exposure.
- Relatively cooperative motorist groups
- They provide safety in the biking transportation

## Negative Aspects:

*On-Street Lanes/Routes*
- At TAMU, cars sometimes park in bike lanes
- Bike lanes dirty
- Bike lanes not well marked as bike only
- Bike routes do not necessarily make bicycling safe since an area is not set aside for bikes
- Cars often park in bike lanes making it dangerous for bicyclists
- Cleaning the bike paths seems like a lower priority
- For commuters on bicycles we need to be able to cycle on Texas and University Avenues so that we can travel quickly
- Incomplete bike routes (e.g. Walton) that peter out (Krenek Tap – currently useless)
- Kids too often have to use sidewalks. This is not a substitute for bike commuting
- Many awkward dangerous intersections
- Many of the current routes and lanes are in bad condition, especially bad for roller blades
- Shoulder of road too narrow
- Too few bike lanes along roads in College Station
- Very few lanes / routes
- Very limited number of bike lanes

*Off-Street Paths*
- Greenways / park bike routes would be a much better facility if they joined up with one another
- I would like to see us make more use of undeveloped "greenways" (I think it's in the plans)
- Loop that doesn't connect (work in progress though)
- More lighting would help on bike routes at night
- Not enough off street routes
- Paths at city streets – problem with intersections
- Should have bikeways, trails to schools
- Too few actual greenways on the ground to facilitate biking
- Watching people ride bikes on University Ave. on the center divider – why not have a multi-use (bike/pedestrian) along this corridor
- When the bike path goes through the intersection there is no indication of it for a car driver

*Connectivity*
- Barriers
- Bike lanes don't connect
- Bike lanes just end – esp. when they terminate into turn lanes for cars
- Bikeways dead end
- Can be hard to negotiates the difficult areas (crossing Texas)
- Dead end routes
- Disconnected / fragmented
- Extremely difficult access to A&M from East of 6 Bypass
- Few connections to Bryan
- Few ways to cross Texas Ave which splits College Station
- Insufficient access to A&M from Southwood Valley
- Lack good connections to schools, parks, and businesses
- Lack good North-South route especially east of Texas Ave
- Lack of advanced planning – routes should be places before subdivisions are built
- Lack of bikeways in certain sections of the City
- Limitations on East West routes that is – crossing Wellborn Road or Highway 6 bypass or Texas Avenue- making commuting from neighborhoods in these out lying regions difficult
- Lots of places are, practically speaking, unreachable by bike
- Making good connections for families to cycle around town as a means of transport and recreation
- Many disconnects for commuting
- Most stores and services along busier roads are essentially off limits without knowing the back way in
- Need more connectors between neighborhoods
- No connections between neighborhoods on bypass side of 6
- No way to get to main business district (Texas Avenue)
- Not connected some of the lanes well enough (dead-ends)
- Not easy to get from South areas to the campus (one must learn a route from someone else)
- Not many East-way routes
- Pedestrian facilities are extremely limited and not well connected. We would like to be able to walk to school and grocery stores as a family
- Some of them are very short and not continuos
- The lack of continuity of the present system
- Very difficult to get across Texas Avenue

*General*
- City Council and officials are not bikers
- I have no negative aspects to bikeway and pedestrian facilities
- Inadequate
- Make parks more bike friendly with more bike activities

- Need a central meeting place where public can bike walk and get a full exercise experience. (ie: Town Lake in Austin) needs to be 3-5 miles
- Pedestrian / bike crossing is not enough
- Pedestrian-wise: set sidewalks back from busy / fast roads like Southwest Parkway
- Peds and bikes together
- Possibly too much effort focused at / towards TAMU (traffic towards and away)
- Rather scarce, few
- Takes too long, historically, to get anything done form time funding is obtained to project completion. Shorten time needed to check guideline compliance
- The cutting down of trees in the parks for the new walk and bikeways
- The patriarchal view point that the City has taken regarding bicyclists, as evidence by the ban of bicyclists on portions of Texas Avenue. This is the only case of a bicycle ban that I know of on a City street
- They are not completed
- They are not every where
- Too limited in extent

*Design Elements*
- Almost no bike sensitive lights
- Left hand turns at light
- Many lights don't trip with bikes
- No way to request left turns at signals
- Older detectors don't trip (or have been overlaid so don't know location)
- Poor lighting in some areas
- Poorly marked
- Pressing the button
- Some existing lanes have very poor pavement, broken pavement etc. (Holleman)
- Speed limits in this town far exceed safety rating
- STOP signs are unsafe for bicyclists compared to traffic lights (motorists don't necessarily stop)
- There aren't signs that say "this is a bike way, watch for cyclist." There is only a picture of a bike
- Very difficult to trip light signal on bike

*Support Facilities*
- Businesses don't have places to lock up bikes
- Very few bike racks

*Education/Safety*
- Businesses don't encourage employees to bike—if they did, they would have showers
- Careless drivers
- Cyclists don't use facilities correctly
- I think it is dangerous to try and get around town on a bike
- It is dangerous to go on long rides
- Lack of education / information on bike facilities
- Lack of education of both bicycling and non-cycling public; not enough bike lamps, reflectors etc. on bikes
- Need a program to publicize and giveaway bicycle helmets for children
- Need to include bike safety and emergency vehicle awareness at Drivers' Education classes
- Not enough enforcement of existing laws
- Not well respected by cars, especially on campus routes (cars parked, or pull into bike lanes when turning corners)
- Theft (especially at A&M) is high
- This town lacks a bicycling / non-automobile commuting ethic and lacks decent public transit, hence increasing bike routes is very important
- Un-educated populace thinks that bikes don't belong on road

## Improvements

*On-Street Lanes/Routes*

- All new roads should have adequate width for multi-use
- Allow bikes to travel to often-used destinations by providing wide-curb-lanes on Texas. City ordinance should be modified as TxDOT widens Texas Ave.
- Better routes to school for all ages but especially elementary marking routes, getting kids off street
- Consider traffic control on bike routes (i.e.: place fewer stops on bike paths to advocate efficiency)
- Keep lanes / routes maintained and clean
- Lanes around schools (like College Hills Elementary, completing lane on Walton Drive)
- Maintain lanes by more sweeping and pruning of trees and bushes
- Mandate that developers create bike routes within subdivisions and plan so before building
- More bike lanes
- More paths/lanes/routes
- Put a bike lane on major traffic areas such as those near the University. One on George Bush Drive, Texas 6, and University Drive
- Repair bike lanes, inventory problem areas with paving near gutter and work to repair (reduce) traps that catch bicyclists off guard
- Require new communities to have bike lanes and connect to network
- Retrofit present roadways when road improvements taken on any segment of the roadway
- Sweep bike lanes periodically
- Think about the idea of providing at least one route of safe travel from every city subdivision

*Off-Street Paths*

- Build paths along creeks
- Commit to providing bike only facilities on roads
- Create better crossings at grade and as many grade separations as possible. These types of connections make the use of bike or walking much easier for more people
- Develop many more off street paths
- Finish the present Bike Loop
- Greenways are needed to facilitate aesthetically pleasing biking
- More off road routes and routes along creeks
- Multi-use trail along University Avenue especially on campus – there aren't even sidewalks

*Connectivity*

- Both need to be more extensive and connected
- Complete bike routes from one populates location to another
- Connect bike lanes
- Connect more routes
- Connect neighborhoods with paths
- Connect to Bryan's bike net – or at least have C.S. net ready to connect to Bryan's when it has one
- Connections
- Convenient access to routes from all East side developments (e.g.: bike lane on Southwest Pkwy from 6 to Dartmouth, bike route on Holleman to Texas)
- Create a bikeway from campus to Albertson's for people in Northgate and North side of campus
- Develop well-connected bike paths and bike routes E-W and N-S, with good signage and enforce traffic rules related to violations of use
- Ensure that Texas A&M is well linked to the plan, perhaps even a hub for overall plan
- Focus on connectivity
- Give people "blocked" by Route 6 Bypass some way to get safely to campus
- Link up bike pathos in parks / greenways
- Make Longmire go through from behind Kroger to Barron Road
- Make provision for bike/ped connections in cul-de-sacs
- More off-street

- More routes than connect
- Provide short cuts between cul-de-sac neighborhoods
- Put them in undeveloped areas
- Tie them together to make long trails
- Vehicular traffic calming
- We need to be able to cycle on Texas Avenue (or have a cycle-ped path that goes North-South continuously) There is no reason that bicycling can't be as fast as driving in a community like College Station
- Work hard for providing ways to cross Texas Avenue

*General*
- Also, check with Austin for ideas
- Build sidewalks! Especially to malls and grocery stores – need bike paths to these too and to schools
- Check with City manager in McAllen Texas; they recently put in an extensive bike path, very nice. How did they do it?
- Expand it, it is a great idea
- Include Bicycle / multi-modal design considerations in all new roadways and subdivision development
- Many ideas are already on your planning maps!
- Separation of pedestrian and bikes
- Strong push for bicycling commuting – incentives?
- Work closer with TAMU

*Design Elements*
- Add "turtles" to separate the path from the road
- Adjust lights to trip with bikes
- Be mindful of lighting conditions
- Better signage, i.e.: "bike routes," watch out for bikes," etc.
- Bike sensitive lights
- Busy intersections need some work – maybe paint more bike lanes in glow paint
- Continue to build on the excellent bike lane system (my compliments!)
- Designated bicycle crossings across the major streets to increase safety
- Detectors should be bicycle sensitive and allow left and through movements
- Don't paint lanes on roads like deacon, its safe for bikes that way. Has benefit of slowing cars down
- Improve traffic light detection devices to sense bicyclist
- Install foot operated traffic light (ped buttons) trippers
- Integrate system with entrances to campus – Also – how about a velo-way?
- More lighting
- Provide markers or other system for identifying location on bike path in case of emergency (for police and EMS)
- Set sidewalks back from curb by three feet (makes pedestrians feel safer)
- Signs
- Slow traffic on some roads currently posted too high
- The ideas of the buttons is good
- Traffic lights / not stop signals on bike lane routes.
- Traffic lights activated by bikes (doesn't happen now, need a car to activate green)

*Support Facilities*
- Bike racks located at businesses and close to entrance, easily seen
- Bike-maps were a good idea
- Businesses need to accommodate bikers
- Hook in local businesses (green business classification) to provide bike racks, etc.
- Involve mass transit with bikes, ie: racks on buses
- Provide bicycle recreation facilities at city parks, BMX track, half pipe and vert park facility

*Education/Safety*
- Add a few education signs at 4-way stops that bicyclists have same rights and responsibilities as autos.
- Alternatives to bike tickets / bike defensive driving

- Better (some) education though Parks & Rec and / or CSISD
- Create commuting ethic, not just with schools and A&M, but with overall community.
- Develop co-operative public education / awareness campaigns by working with local businesses, interest groups and student groups on special events and activities like bike to work day and Earth day
- Don't assume bikes and pedestrians mix much better than either does with cars
- Educate drivers
- Education about existing and planned facilities
- Education of both bicyclists and non-cyclists
- Enforce the no parking restrictions in bike lanes
- Have a bike day – sponsors can furnish drinks and prizes
- Help BVC promote rallies, bike to work day, races
- Improved education of car drivers!
- Increased awareness
- Issue citations to adult bicyclists riding on sidewalks
- Look at traffic flows at intersections and what provides safe pedestrian / bike crossing
- Make them safer
- Need a detailed environmental education, public awareness program and campaign
- Promote more bike safety programs for children
- Provide tourist info center and Chamber of Commerce center with Greenways hike and bike maps
- Put some idea in the newspaper, get people to think about it
- Safety education
- Work with schools to encourage safe bikeways to schools. Sidewalks are no substitute for good bike lanes

## APPENDIX C – ONLINE SURVEY RESULTS

Survey Sample Size – 597

1. What is your gender?
   - Male ..... 61%
   - Female ..... 39%

2. What is your age?
   - Under 14 years ..... 1%
   - 14-18 years ..... 1%
   - 19-24 years ..... 36%
   - 25-39 years ..... 45%
   - 40-54 years ..... 14%
   - Over 54 years ..... 2%

3. Are you a student, faculty, or staff at a local college or university?
   - Yes ..... 81%
     - Texas A&M University ..... 79%
     - Blinn College ..... 3%
   - No ..... 18%

4. Do you own any of the following?
   - Automobile ..... 87%
   - Motorcycle ..... 3%
   - Bicycle ..... 86%

5. Are you a member of a bicycling organization?
   - Yes ..... 9%
     - A&M Cycling Club ..... 5%
     - Brazos Valley Cyclists ..... 3%
     - Brazos Valley Mountain Biking Association ..... 3%
   - Other ..... 2%
   - No ..... 90%

6. To where do you bicycle?
   - Work ..... 31%
   - School ..... 50%
   - Shopping ..... 15%
   - Recreation ..... 70%

7. How far do you live from work/school?
   - Less than 2 miles ..... 36%
   - 2-5 miles ..... 41%
   - 5-10 miles ..... 16%
   - 10+ miles ..... 6%

8. How do you get to work/school most often?
   - Walk ..... 8%
   - Bike ..... 32%
   - Bus ..... 12%
   - Carpool ..... 4%
   - Drive ..... 44%

9. How often do you bicycle?
   - Daily ..... 28%
   - Weekly ..... 32%
   - Monthly ..... 16%
   - Less than once per month ..... 13%
   - Never ..... 10%

10. How often do you bicycle to work/school?
    - Daily ..... 27%
    - Weekly ..... 19%
    - Monthly ..... 9%
    - Less than once per month ..... 11%
    - Never ..... 34%

11. How far would you be willing to bicycle to work/school?
    - Less than 2 miles ..... 19%
    - 2-5 miles ..... 43%
    - 5-10 miles ..... 24%
    - More than 10 miles ..... 6%
    - Not willing ..... 3%

12. Rank the type of bikeway that you would most prefer

| Priority | 1 | 2 | 3 |
|---|---|---|---|
| On-street Bike Lanes: | 31% | 44% | 24% |
| On-Street Bike Routes: | 10% | 36% | 52% |
| Off-street Bike Paths: | 60% | 17% | 22% |

13. Do you consider yourself experienced riding a bicycle on the road in traffic?
    - Yes ..... 70%
    - No ..... 29%

14. Do you currently use any of the following bus services?
    - Yes ..... 39%
      - Texas A&M University ..... 39%
      - Brazos Transit District ..... 1%
      - College Station ISD ..... 1%
    - No ..... 60%

15. Would you use bus services if you could transport your bicycle on a bike rack?
    - Yes....56%
        - Texas A&M University ....44%
        - Brazos Transit District....10%
        - College Station ISD....4%
    - No ....43%

16. Check all the of the reasons that keep you from bicycling to:

| Reasons | Work/School | Shopping | Recreation |
|---|---|---|---|
| Too far: | 23% | 40% | 14% |
| Lack of parking: | 10% | 33% | 9% |
| Lack of bikeways: | 38% | 56% | 38% |
| Lack of showers: | 23% | 8% | 5% |
| Lack of transit bike racks: | 23% | 18% | 11% |
| Accidents: | 41% | 51% | 34% |
| Need access to car: | 19% | 31% | 7% |
| Personal safety: | 38% | 47% | 33% |
| Weather: | 50% | 44% | 37% |
| Other: | 7% | 8% | 6% |

17. What intersections and/or roadways segments cause particular problems for bicyclists?
    Common responses included intersections with Texas Avenue, intersections without pedestrian push buttons in close proximity to the roadway, locations where debris collects in the bike lanes, seal coated roadways (loose rocks), and others.

18. What destinations would you like to cycle to that you currently could not?
    Common responses included retail centers, restaurants, TAMU, Cinemark Movie Theater, and others.

19. List the top three bikeway connections that you would like to see made.
    See Appendices D (on-street) and E (off-street)

20. To where do you walk?
    - Work....16%
    - School....32%
    - Shopping....20%
    - Recreation....64%
    - Other....7%

21. How often do you walk to work/school?
    - Daily .... 13%
    - Weekly .... 11%
    - Monthly.... 9%
    - Less than once per month.... 14%
    - Never.... 52%

22. Check all of the reasons that keep you from walking to:

| Reasons | Work/School | Shopping | Recreation |
|---|---|---|---|
| Too far: | 67% | 65% | 31% |
| Lack of paths: | 29% | 33% | 24% |
| Accidents | 24% | 26% | 17% |
| Need access to car: | 23% | 33% | 9% |
| Personal safety: | 25% | 28% | 19% |
| Weather: | 42% | 38% | 29% |
| Other: | 4% | 3% | 4% |

23. Would you support a tax increase to build bicycle and pedestrian facilities?

| | |
|---|---|
| Yes | 75% |
| No | 24% |

24. How did you find out about this survey?

| | |
|---|---|
| Newspaper | 5% |
| Television | 4% |
| Radio | 0% |
| Internet | 13% |
| Bicycle Organization | 4% |
| E-mail/Word-of-Mouth | 56% |
| Other | 15% |

* Percentages of responses for each question may not add to 100% due to rounding and non-responses.

## APPENDIX D – CITIZEN CONNECTION PRIORITY RESULTS: ON-STREET SEGMENTS

| Roadway Segment: | From: | To: | Score: |
|---|---|---|---|
| Rock Prairie Road | Wellborn Rd. | SH 6 | 101 |
| Wellborn Road | FM2818 | Rock Prairie Rd. | 86 |
| Southwest Parkway | Wellborn Rd. | Texas Ave. | 85 |
| University Drive | Wellborn Rd. | Texas Ave. | 85 |
| George Bush East Drive | Texas Ave. | Holleman Dr. | 83 |
| Texas Avenue | George Bush Dr. | FM 2818 | 83 |
| FM 2818 | Wellborn Rd. | Texas Ave. | 79 |
| Longmire Avenue | FM 2818 | Rock Prairie Rd. | 79 |
| Texas Avenue | University Dr. | George Bush Dr. | 79 |
| Harvey Road | Texas Ave. | SH6 | 79 |
| Wellborn Road | University Dr. | FM2818 | 77 |
| George Bush Drive | FM 2818 | Wellborn Rd. | 69 |
| Southwest Parkway | Texas Ave. | SH 6 | 69 |
| University Drive | Texas Ave. | SH6 | 69 |
| University Drive | FM 2818 | Wellborn Rd. | 65 |
| FM 2818 | University Dr. | Wellborn Rd. | 64 |
| FM 2818 | Texas Ave. | SH 6 | 60 |
| Rock Prairie Road | SH 6 | Greens Prairie Rd. | 60 |
| Longmire Avenue | Rock Prairie Rd. | Barron Rd. | 57 |
| Welsh Avenue | George Bush Dr. | Holleman Ave. | 55 |
| Wellborn Road | Rock Prairie Rd. | Greens Prairie Rd. | 53 |
| Rio Grande Blvd. | FM 2818 | Rock Prairie Rd. | 52 |
| Harvey Road | SH 6 | FM 158 | 52 |
| Holleman Drive | Wellborn Rd. | Texas Ave. | 51 |
| University Drive | SH6 | FM158 | 49 |
| Glade Street | Anna St. | Southwest Pkwy. | 48 |
| Dexter Drive | George Bush Dr. | Holleman Dr. | 45 |
| Greens Prairie Road | Wellborn Rd. | SH6 | 44 |
| Texas Avenue | CS City Limit | University Dr. | 42 |
| South College Avenue | CS City Limit | University Dr. | 41 |
| University Drive | CS City Limit | FM2818 | 41 |
| FM 2818 | CS City Limit | University Dr. | 40 |
| Holleman Drive | Texas Ave. | SH 6 | 38 |
| Dominik Drive | Texas Ave. | Glenhaven Dr. | 35 |
| Texas Avenue | FM 2818 | SH 6 | 35 |
| Dartmouth St. | Harvey Rd. | Southwest Pkwy. | 30 |
| Lincoln Avenue | Texas Ave. | University Dr. | 30 |
| Wellborn Road | CS City Limit | University Dr. | 29 |
| Rock Prairie Road | Greens Prairie Rd. | CS City Limit | 29 |
| Greens Prairie Road | SH6 | Rock Prairie Rd. | 28 |
| Nagle St. | CS City Limit | University Dr. | 27 |
| Marion Pugh | George Bush Dr. | Luther Street | 26 |
| Luther Street | FM 2818 | Hereford Ln. | 24 |
| Munson Avenue | Lincoln Ave. | Harvey Rd. | 22 |
| Tarrow Street | University Dr. | CS City Limit | 17 |
| Boyett Dr. | CS City Limit | University Dr. | 16 |
| Church Street | Wellborn Rd. | University Dr. | 15 |
| Francis Street | Texas Ave. | Glenhaven Dr. | 15 |
| Brentwood Drive | Texas Ave. | Dartmouth St. | 12 |
| Autumn Circle | Spring Lp. | Tarrow St. | 9 |

## APPENDIX E – CITIZEN CONNECTION PRIORITY RESULTS: OFF-STREET SEGMENTS

| Path Beginning: | Path End: | Attractions on Path: | Score: |
|---|---|---|---|
| Texas A&M | Wolf Pen Creek (Upper) | HEB Retail, Wolf Pen Plaza | 101 |
| Wolf Pen Creek (Lower) | Raintree Residential | Raintree Park | 67 |
| Emerald Forest Residential | College Station Bike Loop | Head Lake, City Centre | 66 |
| Raintree Residential | Emerald Forest Residential | | 53 |
| Lincoln Center | George E. Fitch Park | AMCHS, Library | 51 |
| Texas Ave./FM 2818 Retail | Southwood Athletic Park | Brothers Park, Longmire Park, SWV Elementary | 51 |
| Cinemark Movie Theatre | Raintree Residential | TAMU Facility, Windwood Res., Veterans Park | 49 |
| Northgate | Bryan | Hensel Park | 35 |
| Cypress Grove Intermediate | Barron/Longmire Residential | Future Parkland Area | 26 |
| Barron/Longmire Residential | Future e-Park | | 19 |
| Pebble Creek Residential | Lick Creek Park | | 15 |
| Future e-Park | Pebble Creek Residential | | 9 |
| Castlegate Residential | Future e-Park | | 5 |
| Proposed High School | Castlegate Residential | | 4 |
| Nantucket Residential | Lick Creek Park | | 3 |

## APPENDIX F – TRAIL PREFERENCE SURVEY RESULTS

Survey Sample Size – 34

1. Which type of activity are you most likely to be involved in on College Station trails?

| | |
|---|---|
| Walking | 35% |
| Bicycling | 44% |
| Running/jogging | 15% |
| Other | 6% |

2. Thinking about trails in urban areas, how important are each of the following characteristics to a trail's surface? Please indicate between 1 and 5 with 1 being important and 5 being unimportant.

| Rating | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| What the trail is made of | 42% | 32% | 10% | 13% | 3% |
| Width of the trail surface | 35% | 48% | 10% | 6% | 0% |
| Separation between trail and street | 61% | 23% | 13% | 3% | 0% |
| Directional signs along the trail | 10% | 23% | 19% | 35% | 13% |
| Lighting for use of trail at night | 23% | 29% | 10% | 29% | 10% |
| Steep grade changes in the trail | 6% | 19% | 39% | 16% | 19% |

3. Please rank preferred trail surface types using a 1 for the highest rank, 2 for the next preference, and so on.

| Rating | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Concrete | 18% | 30% | 9% | 8% | 38% |
| Asphalt | 36% | 19% | 30% | 17% | 3% |
| Compacted stone | 25% | 22% | 17% | 21% | 9% |
| Gravel | 0% | 19% | 17% | 38% | 28% |
| Natural soil | 21% | 11% | 26% | 17% | 22% |

4. Please rank preferred trail width using a 1 for the highest rank, 2 for the next preference, and so on.

| Rating | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 5 feet | 19% | 22% | 7% | 7% | 43% |
| 8 feet | 41% | 30% | 4% | 25% | 0% |
| 10 feet | 26% | 26% | 54% | 0% | 4% |
| 12 feet | 7% | 22% | 18% | 54% | 0% |
| 14 feet | 7% | 0% | 18% | 14% | 54% |

5. Please rank preferred trail/street intersection control using a 1 for the highest rank, 2 for the next preference, and so on.

| Rating | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| At grade - no crosswalk | 7% | 31% | 8% | 56% |
| At grade - crosswalk | 43% | 23% | 29% | 0% |
| Grade separated - under | 27% | 23% | 42% | 12% |
| Grade separated - over | 23% | 23% | 21% | 32% |

## APPENDIX G – BIKEWAY PROGRAM FUNDING SOURCES

### Federal Sources

National Highway System - Federal Highway Administration
Surface Transportation Program Fund - Federal Highway Administration
Transportation Enhancement Activities – Federal Highway Administration
Recreational Trails Trust Fund
Federal Transit Formula Grants – Federal Transit Administration
Rivers and Trails Program – National Park Service
Land and Water Conservation Fund – National Park Service
Rivers, Trails, and Conservation Assistance Program – National Park Service
United States Department of Health and Human Services (www.hhs.gov)

### State Sources

Safe Routes to Schools Program – Texas Department of Transportation
Recreation Grants Program – Texas Parks and Wildlife

### Local Sources

Capital Improvement Projects

### Private Grants

Active Living Policy and Environmental Studies (www.alpes.ws)
Charles Stewart Mott Foundation (www.mott.org)
Fannie Mae Foundation (www.fanniemaefoundation.org)
Jessie Smith Noyes Foundation (www.noyes.org)
John T. and Catherine D. MacArthur Foundation (www.macfound.org)
Local Initiatives Support Corporation (www.liscnet.org)
The Ford Foundation (www.fordfound.org)
The Energy Foundation (www.ef.org)
The Robert Wood Johnson (www.rwjf.org)
The William and Flora Hewett Foundation (www.hewlett.org)
Rails-to-Trails Conservancy (www.railstotrails.org)
Kodak American Greenways Program Awards (www.conservationfund.org)
HEB Community Investment Program (www.heb.com/heb/comm/commA1-invest.jsp)