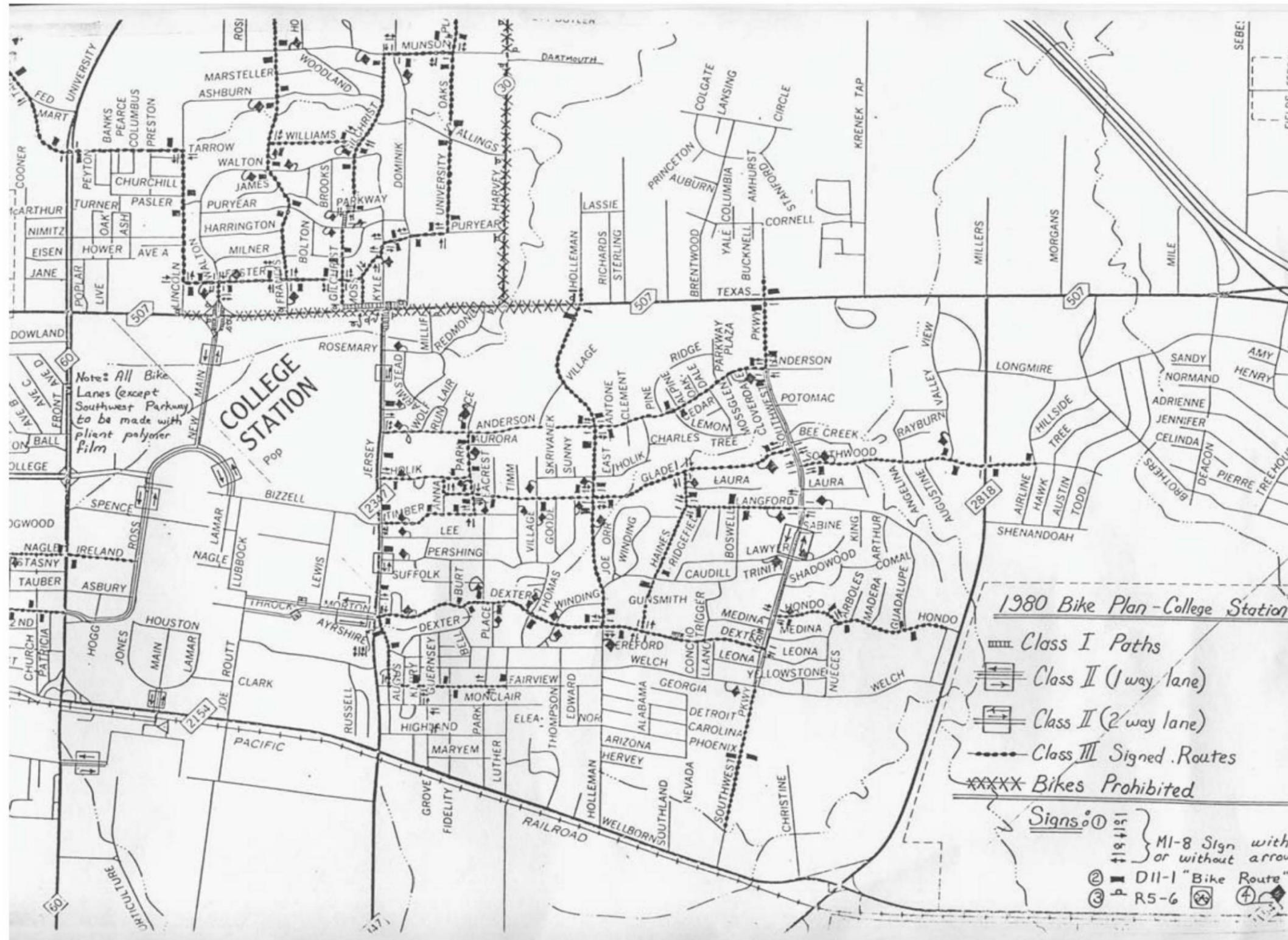




# APPENDICES

# APPENDIX A: 1980 COLLEGE STATION BIKE PLAN



Source: City of College Station.

# APPENDIX B: 1994 COLLEGE STATION SIDEWALK MASTER PLAN



Source: City of College Station.



## APPENDIX C: PROGRESS ON PLANS

### PROGRESS ON 1999 GREENWAYS MASTER PLAN

The 1999 Greenways Master Plan began the development of a greenways program for the City of College Station. It recommended land acquisition; regulation; construction, maintenance, and operations; and coordination and promotion strategies. Below are goals and action items presented in the 1999 Plan with current progress status and issues to be addressed.

Goal	Action Items from 1999 Plan	Progress/Issues to be Addressed
<b>Acquisition</b>	<ol style="list-style-type: none"> <li data-bbox="440 716 829 877">1. <i>The City should accept dedications that are consistent with the greenway characteristics specified in this Plan.</i></li>   <li data-bbox="440 1245 829 1766">2. <i>Encourage voluntary conservation, preservation, and dedication of greenways by landowners. The Brazos Greenways Council and other similar groups, in cooperation with the City should meet with local developers to educate and discuss the value and benefits of conservation and preservation to their particular property.</i></li> </ol>	<ul style="list-style-type: none"> <li data-bbox="886 716 1466 909">• The City continues to accept dedications through the platting of developments and by separate instrument (i.e. warranty deed). Dedication of 87 acres of greenway property has been accepted to date.             Planning Consideration: The City should begin conducting a Phase I Environmental Site Assessment before accepting dedications. This will identify any potential or existing environmental contamination liabilities that would need to be addressed before acceptance.</li>   <li data-bbox="886 1245 1466 1346">• This is an ongoing task that needs to include additional education and encouragement programs.             Planning Consideration: The Brazos Greenways Council no longer exists. This non-profit organization was given a number of responsibilities in the implementation of this Plan. An advocacy group will need to be formed to collaborate with the City and continue these efforts.</li> </ul>



# Bicycle, Pedestrian, and Greenways Master Plan

<p><b>Acquisition</b></p>	<p>3. <i>Develop a program for acquisition of greenways corresponding with the 5-year capital improvement program and the prioritization in this Plan. Coordinate this acquisition program with other City projects requiring acquisition, such as parks, streets, and utility projects.</i></p>	<ul style="list-style-type: none"> <li>• Funds are still available from the 1998 Bond for greenway property acquisition. The City has acquired 380 acres of greenway property through fee simple acquisition.</li> <li>• The priorities set in the Plan for acquisition have not been followed due to various circumstances including opportunity and willingness of landowners to sell.</li> <li>• The Parkland Dedication ordinance allows land in floodplains or designated greenways to be considered on a three for one basis. Three acres of floodplain or greenway will be equal to one acre of park.</li> </ul> <p>Planning Considerations: Available funds from the 1998 Bond for greenway acquisition will eventually diminish and new sources will need to be determined. Options for more successful alternatives to fee simple acquisition such as greenway easements or including land acquisition funds in the scope of capital improvement projects need to be explored to stretch existing dollars.</p> <p>A methodology using GIS should be used to help develop a new set of priorities in pursuing property that may be in threat of immediate development.</p> <p>Efforts should also be made to acquire public access for greenway trails in coordination with street and utility projects.</p>
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<p><b>Acquisition</b></p>	<p>4. Utilize City funding sources, including bond funds if necessary, to acquire land acquisition services. Preference should be given to funding a staff position for FY99-00 that could be supplemented with outside contracts for acquisition services, if necessary.</p> <p>5. Pursue and acquire external funding sources such as grants for continued greenway acquisition.</p> <p>6. Develop guideline incentives that encourage developers to voluntarily dedicate lands that promote greenway connections between developments.</p>	<ul style="list-style-type: none"> <li>The Greenways Program Manager handles acquisition of fee simple and easements with help from the Capital Projects Department and the Legal Department.</li> </ul> <p>Planning Consideration: A land acquisition process needs to be identified for different methods of greenway acquisition, including fee simple, dedications, easements, and auctions.</p> <ul style="list-style-type: none"> <li>This is an ongoing task. This Plan Update will provide an updated list of available funding sources to pursue.</li> <li>Has not been completed.</li> </ul>
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# Bicycle, Pedestrian, and Greenways Master Plan

<b>Regulation</b>	<ol style="list-style-type: none"><li>1. Amend the City's subdivision regulations to include greenway definitions and classifications with reference to the Greenways Master Plan. Guidelines should encourage street layout to maximize access, visibility and connections to and within the greenway network. Develop guidelines for greenway preservation through land dedication, conservation easements and/or fee simple acquisition.</li><li>2. Monitor the recently revised parkland dedication ordinance as it is used to determine if additional changes are necessary to support the Greenways Master Plan.</li></ol>	<ul style="list-style-type: none"><li>• Acceptance language has been created and definitions and classifications of greenways are in the City of College Station Unified Development Ordinance. Additional guidelines are yet to be written.</li><li>• In December of 2008, the Parkland Dedication Ordinance was amended from accepting two acres of floodplain or greenway for every acre of parkland to three for one (three acres of floodplain for one acre of parkland).</li></ul> <p>Planning Consideration: The Parks and Recreation Advisory Board tends to view greenways as a separate recreation amenity and not as part of the park system. It has been observed that the development community would like to dedicate and build greenway trails as a part of their parkland dedication requirement.</p>
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<p><b>Regulation</b></p>	<p>3. Amend the City's drainage ordinance to reflect the greenways definition and classification in terms of corridor width and channel guidelines (level of alteration, structural/nonstructural).</p> <p>4. Investigate overlay zones that aid in greenway protection and prepare zoning ordinance amendments if appropriate.</p> <p>5. Amend the Zoning Ordinance (Ord. 1638) to reference the Greenways Master Plan in Planned Development Districts and elsewhere as appropriate.</p> <p>6. Service Plans for future annexations should require dedication of greenway resources that are important to the overall greenways system.</p>	<ul style="list-style-type: none"> <li>• Has not been completed.</li>   <li>• Has not been completed.</li>   <li>• Completed. A proposed Planned Development District that has greenway dedications must be reviewed by the Greenways Program Manager.</li>   <li>• Has not been completed.</li> </ul>
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# Bicycle, Pedestrian, and Greenways Master Plan

<p><b>Construction, Maintenance, and Operations</b></p>	<ol style="list-style-type: none"> <li>1. <i>Acquire adequate funding for greenway development from various sources.</i></li> <li>2. <i>Design and construct trails by following the development and maintenance guidelines outlined in Plan.</i></li> <li>3. <i>Develop a program for long term maintenance of publicly held greenways.</i></li> <li>4. <i>Incorporate maintenance costs into budgets of future years.</i></li> <li>5. <i>Design greenways in floodplains to handle flood water, while preserving other natural resources. Use the expertise of outside resources as well as City staff.</i></li> </ol>	<ul style="list-style-type: none"> <li>• General Obligation Bond funds continue to be appropriated for the development of greenway trails.</li> <li>• Greenway trails that have been constructed to meet the Plan's guidelines, City of College Station Unified Development Ordinance (UDO), Bryan/College Station Unified Design Manual, the Manual on Uniform Traffic Control Devices (MUTCD), and the American Association of State Highway and Transportation Officials (AASHTO) standards.</li> <li>• Has not been accomplished. Long term maintenance will be discussed through the update of this Plan.</li> <li>• Service level adjustments will need to be submitted as greenway trails are built and as greenway property is acquired or dedicated.</li> <li>• To be explored further through the implementation of this Plan.</li> </ul>
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<p><b>Coordination/ Promotion</b></p>	<ol style="list-style-type: none"> <li>1. <i>Allocate additional resources for coordinating the Greenways Master Plan and its implementation. Preference should be given to funding a staff position for FY99-00 that could be supplemented with outside contracts for acquisition services, if necessary.</i></li> <li>2. <i>Coordinate with other agencies when greenways cut across jurisdictional boundaries.</i></li> <li>3. <i>Monitor and continue to advocate a greenways system in College Station.</i></li> <li>4. <i>Engage neighborhood associations to promote greenways in currently developed areas and to assist with upkeep (by adoption) of those areas after designation.</i></li> </ol>	<ul style="list-style-type: none"> <li>• The Greenways Program Manager position was created and filled. Acquisition is done in-house.</li> <li>• This is an ongoing effort. Coordination with the City of Bryan, the Texas Department of Transportation, Texas A&amp;M University, and land trusts, etc. is vital to accomplishing and implementing this Plan.</li> <li>• The Brazos Greenway Council no longer exists. Other avenues for advocacy will be needed.</li> <li>• This is an ongoing task.</li> </ul>
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## Bicycle, Pedestrian, and Greenways Master Plan

### Coordination/ Promotion

5. *Encourage interested outside groups to develop and maintain a detailed inventory of the wildlife, vegetation, wetlands, and other important natural features that exist along area creeks so that creek based greenways can be designated and developed to enhance wildlife and plant habitats.*
6. *Provide for access to unique areas along greenways where people can enjoy and study natural processes.*
7. *Develop and maintain public information relative to greenways in College Station.*

- An inventory has been developed but has not been updated in a number of years. This Plan will need to identify groups that can develop and maintain this inventory effort. Examples of such groups are may include Texas A&M University classes or volunteers through an Adopt-a-Greenway program.
- Has not been accomplished.
- This is an ongoing task. Information on the Greenways Program is on the City's website, however, additional information should be added to educate and inform. A map of greenway trails needs to be developed and distributed.

## PROGRESS ON THE 2002 BIKEWAY AND PEDESTRIAN MASTER PLAN

The 2002 Bikeway and Pedestrian Master Plan continued efforts to improve upon the foundation established in the 1980s. It recommended acquisition; regulation; and construction, maintenance, and operation strategies. Below are goals and action items presented in the 2002 Plan with current progress status and issues to be addressed.

Goal	Action Items from 2002 Plan	Progress/Issues to be Addressed
<p><b>Acquisition</b></p> <p>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 provide a means to acquire the rights-of-way for bikeway and pedestrian projects that are not ancillary to roadway projects.</p>	<p>1. <i>Accept dedications that are consistent with the planned bikeways and pedestrian connections specified in this plan.</i></p> <p>2. <i>Coordinate the priorities of this plan with the priorities of the greenways acquisition program where greenways are involved.</i></p> <p>3. <i>Develop guideline incentives that encourage developers to voluntarily dedicate lands that promote bikeway and pedestrian connections between developments.</i></p>	<ul style="list-style-type: none"> <li>• This is an ongoing task that is implemented with the platting of any development through public access easements and greenway dedications for trails and the addition of bike lanes and sidewalks on streets.</li> <li>• This is an ongoing task that could be formally addressed in the update of the Plan.</li> <li>• Non-voluntary dedications are in place through ordinance. Formal voluntary dedication guidelines are yet to be established.</li> </ul>



# Bicycle, Pedestrian, and Greenways Master Plan

Goal	Action Items from 2002 Plan	Progress/Issues to be Addressed
<p><b>Regulation</b></p> <p>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 provides regulation for the development of access ways within private residential developments.</p>	<p>1. 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.</p>	<ul style="list-style-type: none"> <li>In October 2004, the City Council passed and approved Ordinance No. 2764 amending Chapter 12 of the Unified Development Ordinance, more specifically, Article 7, Section 7.9 Non-residential Architectural Standards, Sub-section I-4 Pedestrian/Bicycle Circulation &amp; Facilities for 50,000 square feet or greater commercial development. Among the requirements were pedestrian and bicycle traffic connections between primary buildings, the storing of eight bicycles, pedestrian walkways with a minimum of five feet in width, and ten foot wide sidewalks along the full frontage of the primary buildings.</li> </ul>
<p><b>Construction, Maintenance, and Operations</b></p> <p>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. These action statements provide for construction and effective maintenance and operations of bikeway and pedestrian facilities.</p>	<p>1. Secure adequate funding for the development (design and construction) of shared use paths through annual Service Level Adjustments, the Capital Improvement Program, and other possible funding sources.</p>	<ul style="list-style-type: none"> <li>No Service Level Adjustment funds have been appropriated by Council. However, numerous projects (not street projects where multi-modal accommodations were included) were funded through CIP and General Bonds funding. Furthermore, voters approved a 2008 Bond referendum for the improvement of additional multimodal projects.</li> </ul>

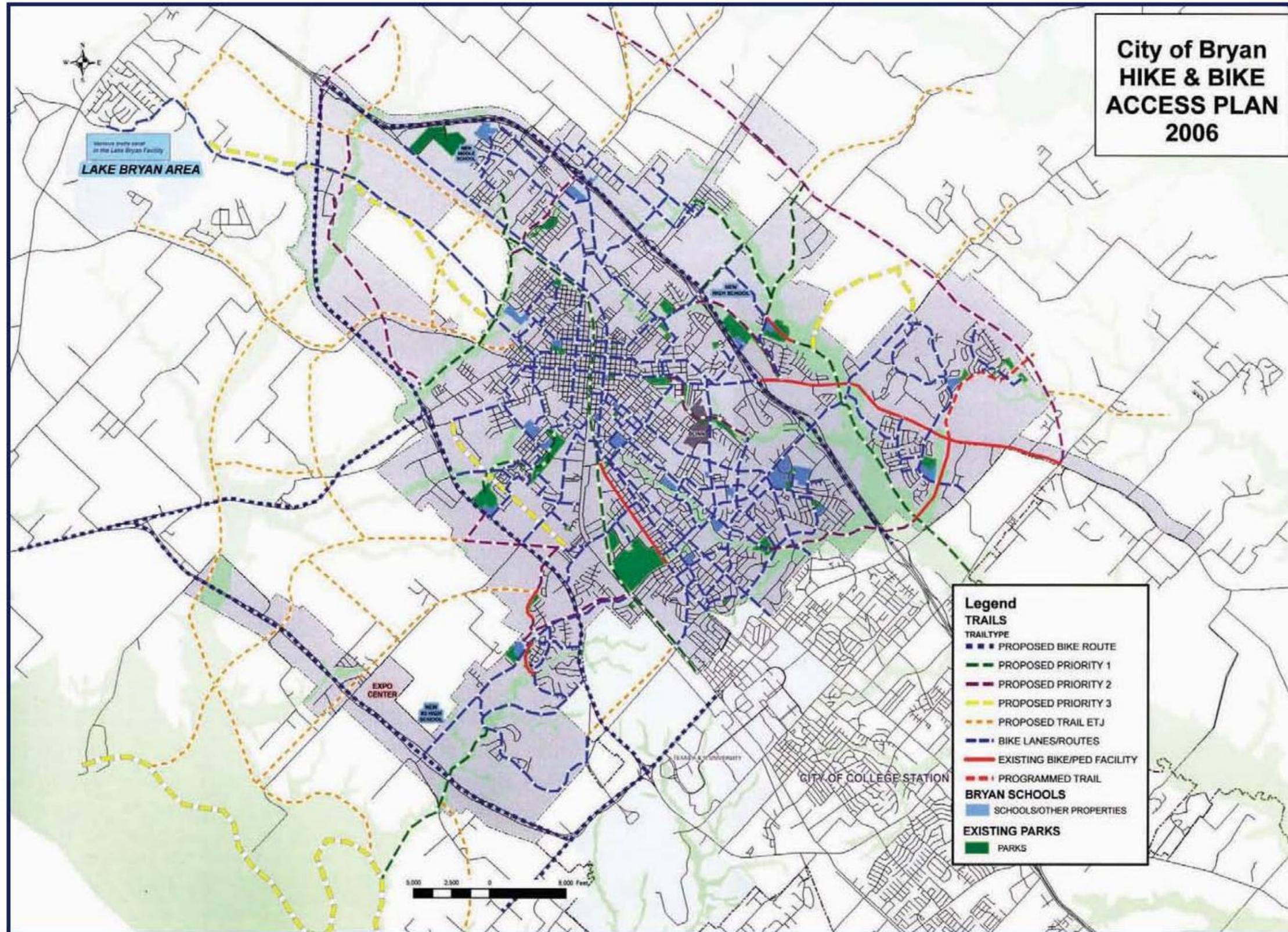
Goal	Action Items from 2002 Plan	Progress/Issues to be Addressed
<p><b>Construction, Maintenance, and Operations</b></p>	<p>2. Survey the supply and demand of bicycle parking in different retail areas of College Station. Identify appropriate methods of supplying bicycle racks through public or private funds.</p> <p>3. Implement Bikes-on-Buses program on a limited number of routes for TAMU and The District buses.</p> <p>4. Develop alternatives for detecting bicyclists at signalized intersections and deploy the best technology at selected intersections.</p> <p>5. Develop scheme for numbering bike routes or providing destination information along bikeways in College Station and deploy along priority routes.</p>	<ul style="list-style-type: none"> <li>• A survey was conducted in September of 2004 as part of grant bicycle parking initiative. A grant application was also created to be available for utilization by the public in November of 2004. Funds however have been expended and additional sources of funding are needed.</li> <li>• TAMU tried racks on their buses. The Brazos Valley Transit District presently has no bicycle racks on their buses.</li> <li>• The City has installed pedestrian signal infrastructure throughout the City. The bicycle detection technology is still lagging behind compared to pedestrian signal technology. The City will continue to pursue the bicycle detection technology and deploy when funds become available.</li> <li>• Bike route signage has been installed throughout the City in accordance with the on MUTCD regulations. However, the frequency and the number of signs are lacking. New bicycle signage standards are now available by MUTCD. A routing system has yet to be deployed.</li> </ul>



## Bicycle, Pedestrian, and Greenways Master Plan

Goal	Action Items from 2002 Plan	Progress/Issues to be Addressed
<p><b>Education/Encouragement</b></p> <p>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 provides for this.</p>	<p>1. <i>Develop a bicycle awareness and education campaign.</i></p>	<ul style="list-style-type: none"><li>• A bicycle awareness and education campaign was completed in the fall of 2003. Other campaigns should be scheduled.</li></ul>

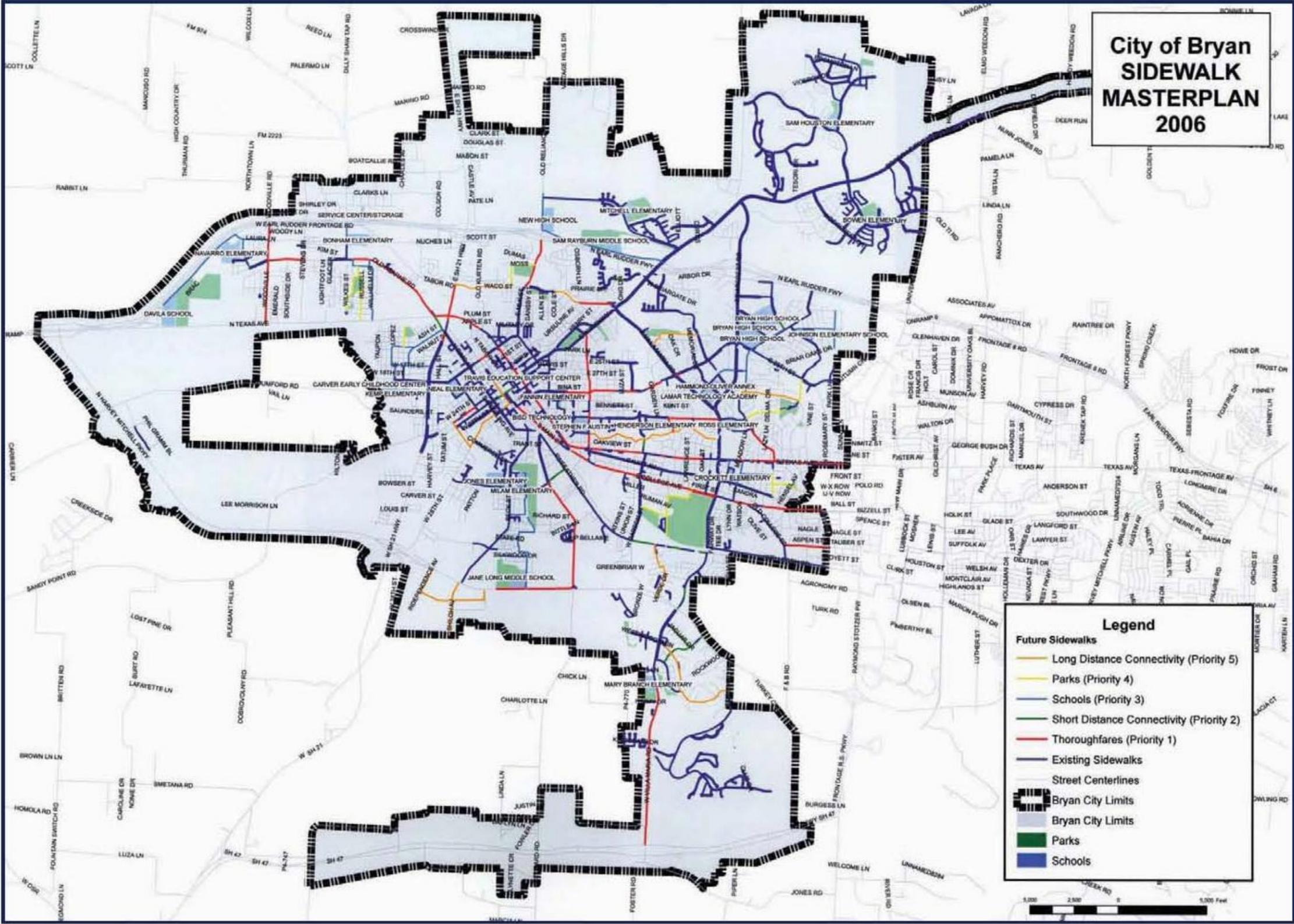
# APPENDIX D: 2006 BRYAN HIKE AND BIKE ACCESS PLAN



Source: City of Bryan

Appendix D: 2006 Bryan Hike and Bike Access Plan

# APPENDIX E: 2006 BRYAN SIDEWALK MASTER PLAN



Source: City of Bryan.

Appendix E: 2006 Bryan Sidewalk Master Plan

## APPENDIX F: THREATENED AND ENDANGERED SPECIES

**Brazos County List of Endangered Species**

	Federal Status	State Status
<b>Amphibians</b>		
Houston Toad	LE	E
<b>Birds</b>		
American Peregrine Falcon	DL	T
Arctic Peregrine Falcon	DL	
Bald Eagle	DL	T
Interior Least Tern	LE	E
Peregrine Falcon	DL	T
Whooping Crane	LE	E
Wood Stork		T
<b>Fishes</b>		
Blue Sucker		T
Sharpnose Shiner	C	
Smalleye Shiner	C	
<b>Mammals</b>		
Louisiana Black Bear	LT	T
Red Wolf	LE	E
<b>Reptiles</b>		
Alligator Snapping Turtle		T
Texas Horned Lizard		T
Timber/Canebrake Rattlesnake		T
<b>Plants</b>		
Navasota Ladies'-Tresses	LE	E

**Legend**

<b>LE</b>	Formally endangered species
<b>E</b>	Endangered species
<b>DL</b>	Previously listed species
<b>T</b>	Threatened species
<b>LT</b>	Endangered or threatened species
<b>C</b>	No file



## APPENDIX G: U. S. CENSUS JOURNEY TO WORK

2000 Census Journey to Work	United States	Texas	College Station	
<b>Total:</b>	<b>128,279,228</b>	<b>9,157,875</b>	<b>30,983</b>	
<b>Bicycled</b>	0.38%	0.24%	1,045	3.37%
<b>Walked</b>	2.93%	1.90%	1,711	5.52%
<b>Car, truck, or van:</b>	87.88%	92.18%	26,737	86.30%
<b>Drove alone</b>	75.70%	77.70%	23,790	76.78%
<b>Carpooled</b>	12.19%	14.48%	2,947	9.51%
<b>Public transportation:</b>	4.73%	1.86%	385	1.24%
<b>Bus or trolley bus</b>	2.50%	1.71%	365	1.18%
<b>Streetcar or trolley car</b>	0.06%	0.02%	20	0.06%
<b>Subway or elevated</b>	1.47%	0.03%	0	0.00%
<b>Railroad</b>	0.51%	0.03%	0	0.00%
<b>Ferryboat</b>	0.03%	0.01%	0	0.00%
<b>Taxicab</b>	0.16%	0.07%	0	0.00%
<b>Motorcycle</b>	0.11%	0.13%	1,711	0.58%
<b>Other means</b>	0.70%	0.95%	96	0.31%
<b>Worked at home</b>	3.26%	2.75%	830	2.68%

1990 Census Journey to Work	United States	Texas	College Station	
<b>Total:</b>	<b>127,024,486</b>	<b>8,104,870</b>	<b>22,136</b>	
<b>Bicycled</b>	0.41%	0.24%	1,099	4.96%
<b>Walked</b>	3.90%	2.66%	2,100	9.49%
<b>Car, truck, or van:</b>				
<b>Drove alone</b>	73.19%	76.49%	14,472	65.38%
<b>Carpooled</b>	13.36%	14.90%	2,492	11.26%
<b>Public transportation:</b>				
<b>Bus or trolley bus</b>	2.99%	2.11%	846	3.82%
<b>Streetcar or trolley</b>	0.07%	0.01%	--	0.00%
<b>Subway or elevated</b>	1.53%	0.01%	6	0.03%
<b>Railroad</b>	0.50%	0.00%	--	0.00%
<b>Ferryboat</b>	0.03%	0.00%	--	0.00%
<b>Taxicab</b>	0.16%	0.08%	--	0.00%
<b>Motorcycle</b>	0.21%	0.23%	391	1.77%
<b>Other means</b>	0.70%	0.83%	73	0.33%
<b>Worked at home</b>	2.96%	2.44%	657	2.97%



## APPENDIX H: FOCUS GROUP SUMMARY

Ranked Priorities by Focus Group Meeting

Special Interest Group Meeting 1	
Rank	Category
1	Administrative
1	Safety
1	Bicycle flow
2	Land use/Design
3	Connectivity
3	Big picture
4	Greenway improvement

Special Interest Group Meeting 2	
Rank	Category
1	Safety
2	Connectivity
3	Intersection accommodations
4	Environmental
5	Sidewalks
6	Maintenance

Home Owners Association Group Meeting 1	
Rank	Category
1	Connectivity
2	Safety
3	Crossing main roads
4	University Drive [FM 60]
5	Future Highway 6 crossing

Developers Group	
Rank	Category
1	Development of facilities
2	Class of facilities
3	Connectivity
4	Signage/Safety
5	Neighborhood concerns

Home Owners Association Group Meeting 2	
Rank	Category
1	Intersection crossings
2	Promotion/Education
3	More sidewalks
4	Greenway landscaping
5	Enforcement
6	Access to Lick Creek from east neighborhoods
7	Development too close to greenways
8	New development affecting old development

Students Group	
Rank	Category
1	Intersections
2	Bike lanes
3	Distinction/Education between bikeways and sidewalks
4	Signage
5	Treatment/Construction
6	Maps
7	Maintenance
8	Safety
8	User convenience
8	Public transit
8	Bicycle racks



## APPENDIX I: SURVEY

### Bicycle, Pedestrian and Greenways Master Plan

#### 1. Introduction

The City of College Station is conducting this survey as a part of an effort to update its Bicycle Pedestrian and Greenways Master Plan. We hope to gain input from you on bicycle and pedestrian facilities and greenways. The answers you provide will be incorporated into the plan that we will work from for the next five years. Thank you for your participation.

#### What are Greenways?

Greenways in College Station are linear open space corridors that follow natural features such as creeks and rivers and their floodplains or human-made features such as utility, road or rail corridors. Greenways serve to manage stormwater and floodplains, preserve natural areas and wildlife corridors, and connect the community with greenway trails that create a bicycle and pedestrian friendly network that promotes healthy active living.

## Bicycle, Pedestrian and Greenways Master Plan

### 2. Biking, Walking and Greenways

**1. Please rate the following benefits of planning for a bicycle, pedestrian and greenways system.**

	Not Important	Somewhat Important	Very Important	N/A
Safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental protection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Connectivity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased use and awareness of facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alternative modes of transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Growth management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open space	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Minimization of flood damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water quality protection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildlife and plant habitat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**2. Which of the following would improve College Station's bicycle, pedestrian and greenways system the most?**

- More bike lanes
- More signed bike routes
- More multi-use or greenway trails
- More sidewalks
- Awareness/Education

Other (please specify)

**3. For transportation purposes, such as getting to work or school, or running errands, please rate the following modes used on a weekly basis:**

	Never	Occasionally	Frequently	N/A
Walking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Riding the bus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Driving an automobile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Bicycle, Pedestrian and Greenways Master Plan

### 3. Biking

**1. How far would you be willing to bicycle to a destination (Assumption: 1 mile takes about 6-7 minutes)?**

	Less than 2 miles	2-5 miles	5-10 miles	10+ miles	Not an option
For errands	<input type="radio"/>				
For work or school	<input type="radio"/>				
For health and wellness	<input type="radio"/>				
For recreation	<input type="radio"/>				
For social activities	<input type="radio"/>				

**2. What terms most describe your level of bicycling activity?**

- Regular recreational cyclist
- Bicycle occasionally on-road for fitness, recreation, or short trips
- Bicycle commuter
- Off-road mountain biker
- Regularly bicycle to various transportation destinations
- Not a bicyclist

**3. What are the two biggest factors that discourage bicycling activity?**

- |   |   |
|---|---|
| <input type="checkbox"/> Bicycle unfriendly roadways  | <input type="checkbox"/> Lack of nearby destinations      |
| <input type="checkbox"/> Traffic                      | <input type="checkbox"/> Lack of showers at the workplace |
| <input type="checkbox"/> Aggressive motorist behavior | <input type="checkbox"/> Lack of time                     |
| <input type="checkbox"/> Unsafe intersections         | <input type="checkbox"/> Lack of interest                 |
| <input type="checkbox"/> Lack of greenway trails      | <input type="checkbox"/> Weather                          |
| <input type="checkbox"/> Lack of bicycle parking      |   |

Other (please specify)

Click on this [map](#) to help answer Question #4 and #5.

**4. What intersections and/or roadway segments cause problems for cyclists?**

1.
2.
3.
4.



## Bicycle, Pedestrian and Greenways Master Plan

**5. Where would you like to see bicycle facilities (bike lanes, bike routes, multi-use paths, etc.)?**

1.
2.
3.
4.

## Bicycle, Pedestrian and Greenways Master Plan

### 4. Walking

**1. How far would you be willing to walk to a destination (Assumption: 1 mile takes about 20 minutes)?**

	Less than 1/2 a mile	1 mile	2 miles	More than 2 miles	Not an option
For errands	<input type="radio"/>				
For work or school	<input type="radio"/>				
For health and wellness	<input type="radio"/>				
For recreation	<input type="radio"/>				
For social activities	<input type="radio"/>				

**2. What are the two biggest factors that discourage walking?**

- |  |   |
|--|---|
| <input type="checkbox"/> Lack of sidewalks                           | <input type="checkbox"/> Unsafe crossings             |
| <input type="checkbox"/> Deficient sidewalks                         | <input type="checkbox"/> Aggressive motorist behavior |
| <input type="checkbox"/> Lack of greenway trails                     | <input type="checkbox"/> Lack of interest             |
| <input type="checkbox"/> Pedestrian unfriendly streets and land uses | <input type="checkbox"/> Weather                      |
| <input type="checkbox"/> Traffic                                     |   |

Other (please specify)

Click on this [map](#) to help answer Question #3 and #4.

**3. What intersections and/or roadway segments cause problems for walkers/runners?**

1.
2.
3.
4.

**4. Where would you like to see pedestrian facilities (sidewalks, multi-use paths, greenway trails, etc.)?**

1.
2.
3.
4.



## Bicycle, Pedestrian and Greenways Master Plan

### 5. How did you find out about this survey?

- Newspaper
- Television
- Radio
- Internet
- Email
- Club/Organization
- Meeting
- Other (please specify)

## Bicycle, Pedestrian and Greenways Master Plan

### 5. Additional Comments

**1. If you have additional comments please add them here:**



## Bicycle, Pedestrian and Greenways Master Plan

### 6. Personal Information

**1. What is your gender?**

- Male
- Female

**2. What is your age?**

- Under 14
- 14-18
- 19-24
- 25-39
- 40-54
- Over 54

**3. What group best describes you?**

- Interested citizen
- College student
- Development community
- Governmental agency
- Other (please specify)

**4. Where do you live?**

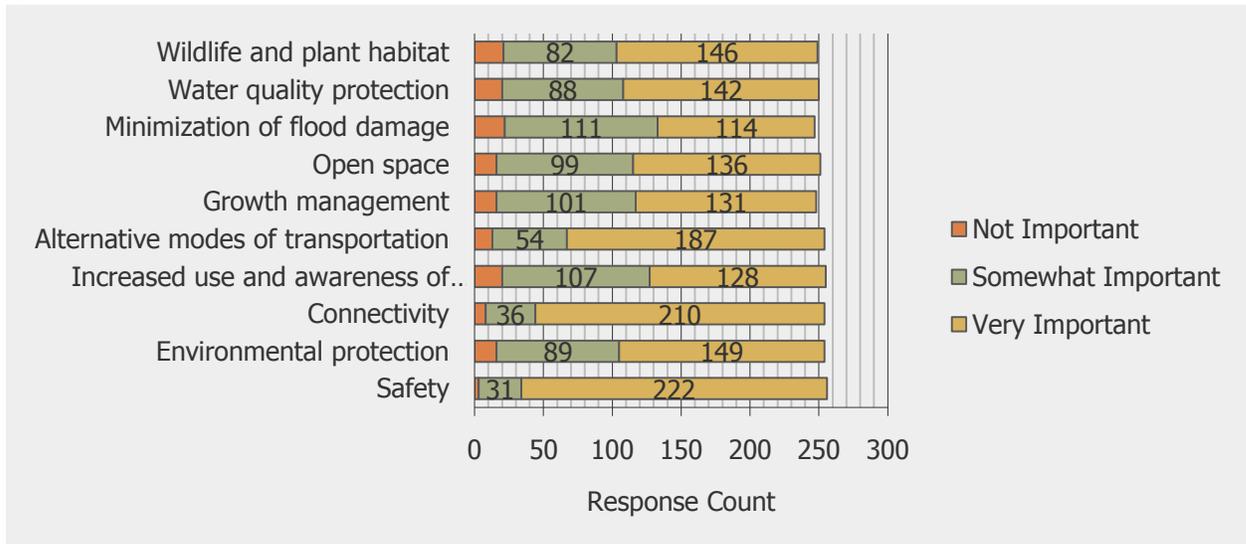
- College Station
- Bryan
- Outside City limits in Brazos County
- Other (please specify)

## APPENDIX J: SURVEY RESULTS

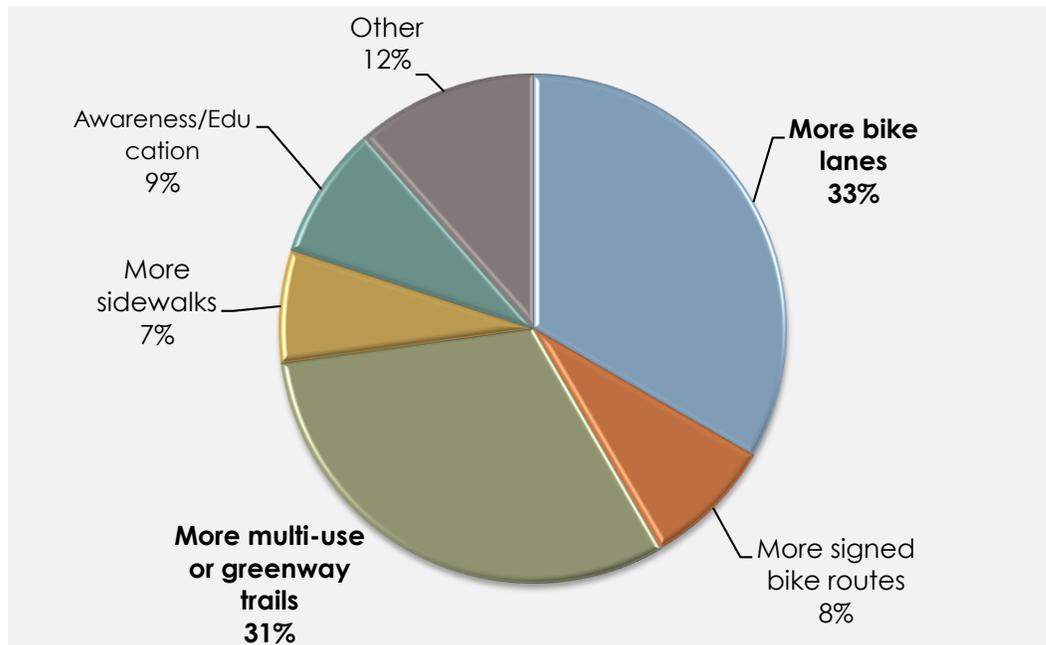
260 Respondents  
63% Male, 37% Female

Age of Respondents  
0.0% - Under 14    0.4% - 14-18  
23.2% - 19-24    38.4% - 25-39  
22.3% - 40-54    15.6% - Over 54

1. Please rate the following benefits of planning for a bicycle, pedestrian and greenways system.

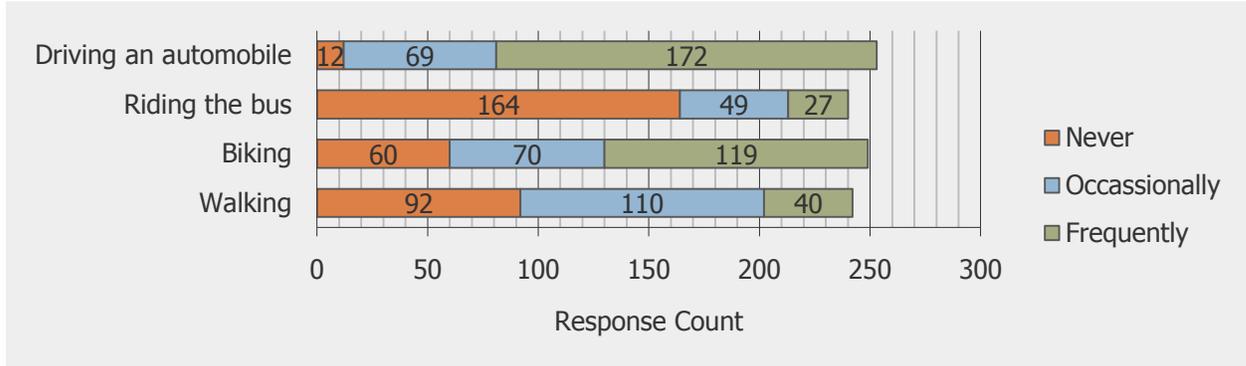


2. Which of the following would improve College Station's bicycle, pedestrian and greenways system the most?

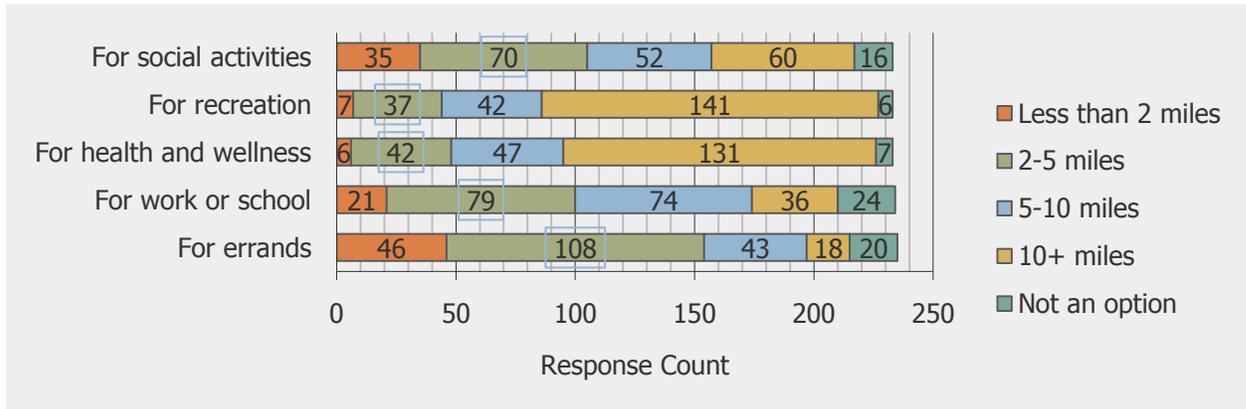


# Bicycle, Pedestrian, and Greenways Master Plan

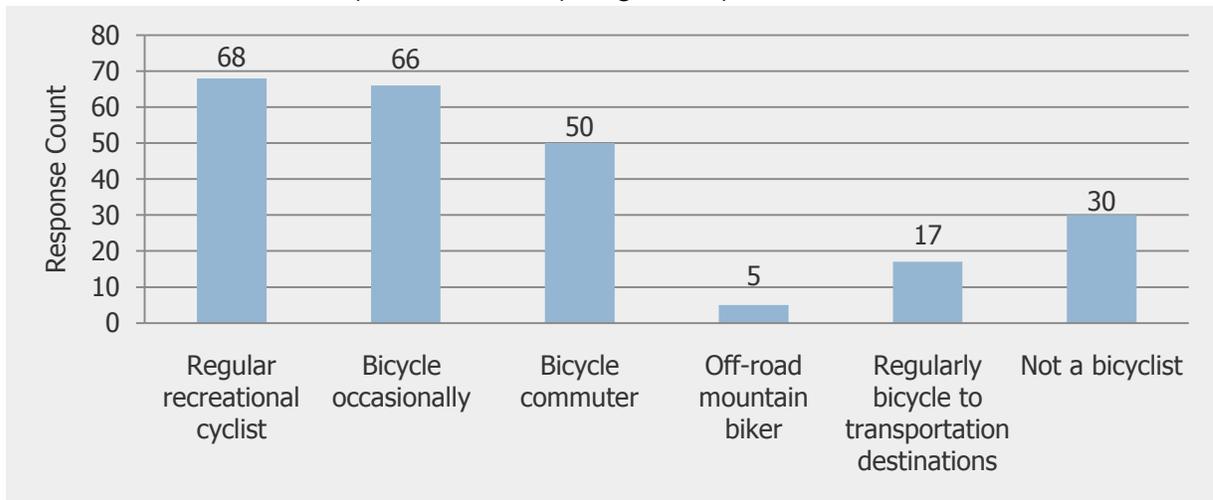
3. For transportation purposes, such as getting to work or school, or running errands, please rate the following modes used on a weekly basis.



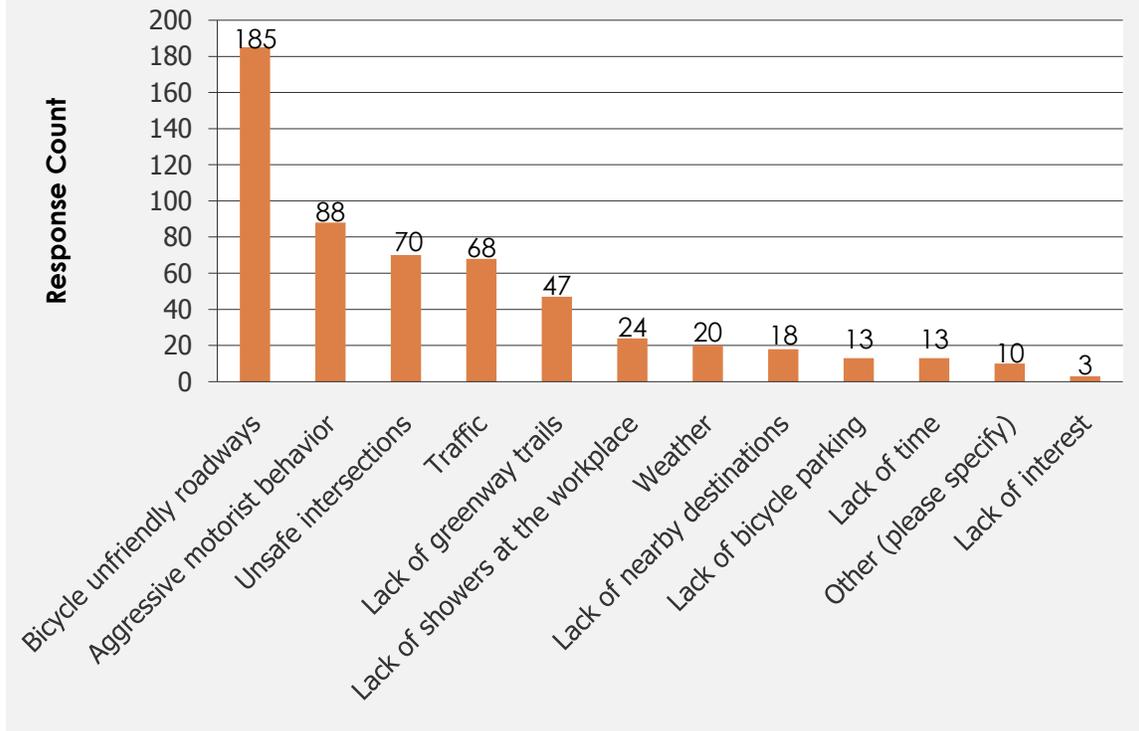
4. How far would you be willing to bicycle to a destination (Assumption: One mile takes about six to seven minutes)?



5. What terms most describe your level of bicycling activity?



6. What are the two biggest factors that discourage bicycling activity?



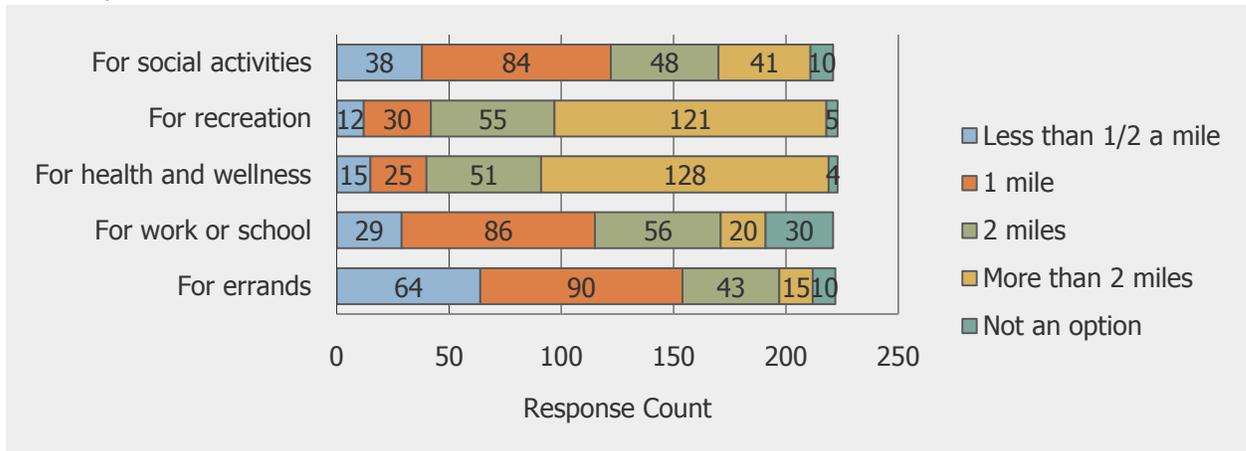
7. What intersections and/or roadway segments cause problems for cyclists?

Comments (10 Most Frequent)	Comment Frequency
Texas Ave. [BUS 6]	31
Wellborn Rd. [FM 2154]	26
University Dr. [FM 60]	23
Holleman Dr. & Texas Ave. [BUS 6]	19
Texas Ave. [BUS 6] & University Dr. [FM 60]	17
Rock Prairie Rd. & Longmire Dr.	14
Rock Prairie Rd. & Longmire Dr.	14
Rock Prairie Rd. & Earl Rudder Frwy. [SH 6]	13
Harvey Mitchell Pkwy. [FM 2818]	12
Barron Rd.	11
George Bush Dr. [FM 2347] & Texas Ave. [BUS 6]	11

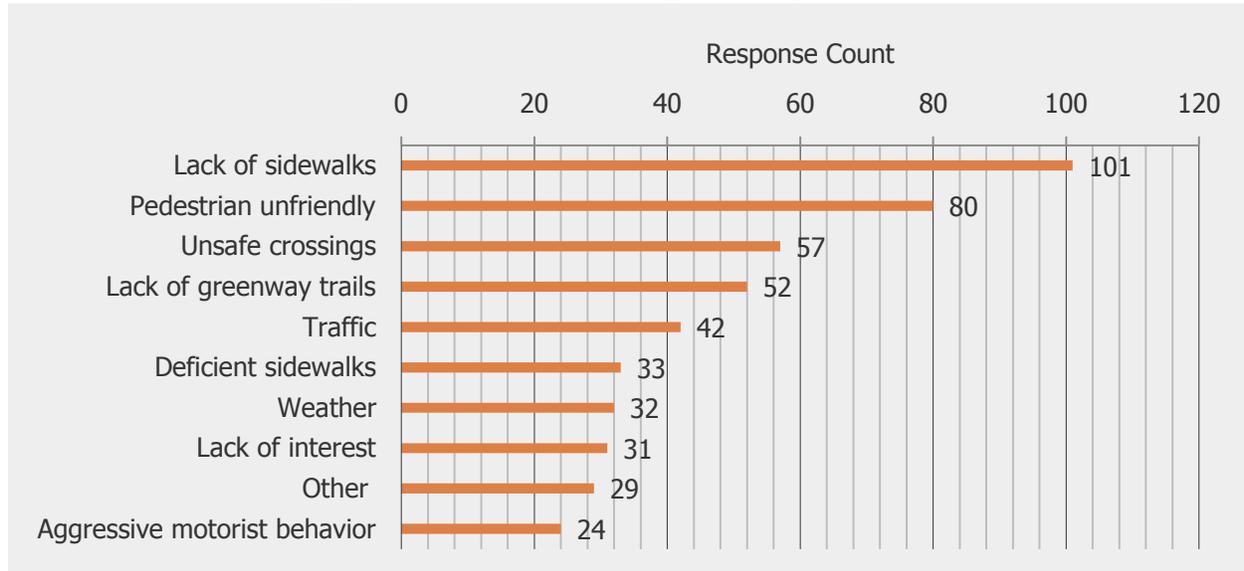
8. Where would you like to see bicycle facilities (bike lanes, bike routes, multi-use paths, etc.)?

Comments (10 Most Frequent)	Comment Frequency
Texas Ave. [BUS 6]	38
Wellborn Rd. [FM 2154]	38
University Dr. [FM 60]	30
Rock Prairie Rd.	26
Southwest Pkwy.	17
Parks & floodplains	16
Harvey Rd. [SH 30]	14
As many places as possible	13
Harvey Mitchell Pkwy. [FM 2818]	13
Earl Rudder Frwy. [SH 6] - Connect east side to west side and frontage roads	13

9. How far would you be willing to walk to a destination (Assumption: 1 mile takes about 20 minutes)?



10. What are the two biggest factors that discourage walking?



11. What intersections and/or roadway segments cause problems for walkers/runners?

Comments (10 Most Frequent)	Comment Frequency
Texas Ave. [BUS 6] (specifically University Dr. [SH 60] (4) and Walton Dr. intersections)	28
George Bush Dr. [FM 2347] (specifically Harvey Rd. [SH 30] (3), Marion Pugh Dr. , Texas Ave. [BUS 6] (5), Wellborn Rd. [FM 2154] (8), and Jones-Butler Rd. intersections)	19
University Dr. [FM 60] (including intersections)	18
Harvey Rd. [SH 30] (specifically Munson Ave. (3), Texas Ave. [BUS 6] (4), Earl Rudder Frwy. [SH 6] and creek crossing intersections)	15
Harvey Mitchell Pkwy. [FM 2818] (specifically Southwood Dr. (2), Texas Ave. [BUS 6] (2), and Welsh Ave. intersections)	12
Holleman Dr. (specifically Texas Ave. [BUS 6] (5) and Winding Rd. intersections)	11
Rock Prairie Rd. (specifically Earl Rudder Frwy. [SH 6] (7), Wellborn Rd. [FM 2154], and William D. Fitch Pkwy. [SH 40] intersections)	11
Barron Rd. (specifically Earl Rudder Frwy. [SH 6] (2) and William D. Fitch Pkwy. [SH40] intersections)	10



# Bicycle, Pedestrian, and Greenways Master Plan

Comments (10 Most Frequent)	Comment Frequency
Longmire Dr. (specifically Rock Prairie Rd. (5) and Southwood Dr. intersections)	10
Wellborn Rd. [FM 2154]	10

12. Where would you like to see pedestrian facilities (sidewalks, multi-use paths, greenway trails, etc.)?

Comments (10 Most Frequent)	Comment Frequency
Texas Ave. [BUS 6] - multi-use paths and crossings (specifically University Dr. [SH 60] (2) and George Bush Dr. [Fm 2347] intersections)	16
University Dr. [FM 60] including crossings	14
Holleman Dr. (specifically Texas Ave. [BUS 6] intersection and crossing the railroad tracks)	10
Rock Prairie Rd. (specifically at Earl Rudder Frwy. [SH 6])	10
Harvey Rd [SH 30] (specifically Munson and Texas [BUS 6] (2) intersections)	9
Barron Rd.	8
William D. Fitch Pkwy. [SH 40] parallel routes and crossings	7
Earl Rudder Frwy. [SH 6] frontage and crossings	6
Wellborn Rd. [FM 2154]	6
Every street should have sidewalks on both sides	5
Floodplain and streams	5
Greenways and trails - Expansion and linkage with any trails that exist.	5
Parks	5



## APPENDIX K: PRIORITIES

Geographic Information Systems (GIS) was used to construct a model per facility type to objectively develop a list of priorities based on the factors mentioned in Chapter 7: Implementation. Each model included a matrix of scores that designated suitability and then a weight based on level of importance. Once the GIS analysis was complete additional factors that determined priorities included connectivity gaps; important east/west and north/south corridors; and the likelihood of a street being built or widened.

Bike Lane Parameters				
Factors	Subfactors	Criteria	Points	Weight
Population Served (Population Density)		Greater density is more suitable		23
Safety (Automobile/Bicycle Crashes)		More crashes - higher importance		17
Public Requests		More requests - higher importance		11
Location		City limits	10	8
		Annexation - Immediate (0-3 years)	5	
		Annexation - Near Term (3-10 years)	3	
Student Population Density		Greater density is more suitable		5
Proximity to Attractors				
Texas A&M University		1/2 mile increments - closer is more suitable		8
Parks	Existing	1/2 mile increments - closer is more suitable		8
	Future	1/2 mile increments - closer is more suitable		2
Schools	Existing	1/2 mile increments - closer is more suitable		8
	Future	1/2 mile increments - closer is more suitable		2
Other Key Destinations (Shopping Centers, Grocery Stores, Major Employers)		1/2 mile increments - closer is more suitable		8
			subtotal proximity to attractors	36
			<b>TOTAL</b>	<b>100</b>



# Bicycle, Pedestrian, and Greenways Master Plan

Bike Route Parameters				
Factors	Subfactors	Criteria	Points	Weight
Population Served (Population Density)		Greater density - more suitable		24
Safety (Automobile/Bicycle Incidents)		More incidents - less suitable		15
Public Requests		More requests - higher importance		12
Location		City limits	10	8
		Annexation - Immediate (0-3 years)	5	
		Annexation - Near Term (3-10 years)	3	
Student Population Density		Greater density - more suitable		5
Proximity to Attractors				
Texas A&M University		1/2 mile increments - closer is more suitable		8
Parks	Existing	1/2 mile increments - closer is more suitable		8
	Future	1/2 mile increments - closer is more suitable		2
Schools	Existing	1/2 mile increments - closer is more suitable		8
	Future	1/2 mile increments - closer is more suitable		2
Other Key Destinations (Shopping Centers, Grocery Stores, Major Employers)		1/2 mile increments - closer is more suitable		8
			subtotal proximity to attractors	36
			<b>TOTAL</b>	<b>100</b>

# Bicycle, Pedestrian, and Greenways Master Plan

2010 - 2020  
Adopted January 2010

Sidewalk Parameters				
Factors	Subfactors	Criteria	Points	Weight
Population Served (Population Density)		Greater density is more suitable		24
Safety (Automobile/Bicycle Incidents)		More incidents - less suitable		18
Public Requests		More requests - higher importance		11
Location		City limits	10	6
		Annexation - Immediate (0-3 years)	5	
		Annexation - Near Term (3-10 years)	3	
Student Population Density		Greater density is more suitable		3
Proximity to Attractors				
Parks	Existing	1/4 mile increments - closer is more suitable		7
	Future	1/4 mile increments - closer is more suitable		2
Schools	Existing	1/4 mile increments - closer is more suitable		7
	Future	1/4 mile increments - closer is more suitable		2
Texas A&M University		1/4 mile increments - closer is more suitable		7
Other Key Destinations (Shopping Centers, Grocery Stores, Major Employers)		1/4 mile increments - closer is more suitable		7
Bus Stops		1/4 mile increments - closer is more suitable		6
			subtotal proximity to attractors	38
			<b>TOTAL</b>	<b>100</b>

# APPENDIX L: FUNDING SOURCES

Organization Name	Grant Name	Range of Awards	Applicant Eligibility	Match Required
U.S. Department of Transportation; Federal Highway Administration	Highway Safety Improvement Program	\$86,932,328 total apportioned for Texas for FY 2009	The Traffic Operations Division request proposed highway safety projects from the districts through a statewide program call as funds are available. Funding of projects under the Highway Safety Improvement Program will be focused on areas identified as having the greatest need in the most current Strategic Highway Safety Plan.	10% of project costs must be covered by state or local participation
U.S. Department of Transportation; Federal Highway Administration	Surface Transportation Program	\$554,869,337 total apportioned for Texas for FY 2009	The Surface Transportation Program provides flexible funding that may be used by States and localities for projects on any Federal-aid highway, including the NHS, bridge projects on any public road, transit capital projects, and intracity and intercity bus terminals and facilities.	20% - 0% based on project type
U.S. Department of the Interior; National Park Service	Rivers, Trails, and Conservation Assistance Program	No grants offered; staff provided to give direction for a project up to two years	The RTCA program provides technical assistance to its project partners. RTCA staff help with building partnerships to achieve community-defined goals, assessing resources, developing concept plans, engaging public participation, and identifying potential sources of funding for conservation and outdoor recreation projects. Assistance is provided for one year and may be renewed for a second year, if warranted. Read a project example.	None
Environmental Protection Agency	Environmental Education Grants Program	\$15,000 - \$25,000	The Grants Program sponsored by EPA's Environmental Education Division (EED), Office of Children's Health Protection and Environmental Education, supports environmental education projects that enhance the public's awareness, knowledge, and skills to help people make informed decisions that affect environmental quality. EPA awards grants each year based on funding appropriated by Congress.	no matching requirements
Department of Health and Human Services; Administration for Children and Families	Community Services Block Grant Discretionary Awards	up to \$800,000 for Community Economic Development	**For economic development projects, eligibility is restricted to private, locally-initiated, nonprofit community development corporations (or affiliates) governed by a board consisting of residents of the community and business and civic leaders. For all other projects, grants may go to states, cities, counties and private, nonprofit organizations.**	no matching requirements
U.S. Department of Housing and Urban Development	Community Development Block Grant (CDBG): Entitlement Grants	HUD determines the amount of each grant by using a formula comprised of several measures of community need.	Cities in Metropolitan Statistical Areas (MSAs) designated by the Federal Office of Management and Budget as a central city of the MSA; other cities over 50,000 in MSA's and qualified urban counties of at least 200,000	no matching requirements
U.S. Department of Energy; Office of Energy Efficiency and Renewable Energy; Office of Weatherization and Intergovernmental Programs	Energy Efficiency and Conservation Block Grant	\$5,000,000 - \$75,000,000	Through formula and competitive grants, the Program empowers local communities to make strategic investments to meet the nation's long-term goals for energy independence and leadership on climate change. Funding for the EECBG Program under the Recovery Act totals \$3.2 billion. Of this amount, over \$2.7 billion will be awarded through formula grants. In addition, up to \$453.72 million will be allocated through competitive grants, which will be awarded through this Funding Opportunity Announcement (FOA). The remaining funds will be used to provide a suite of technical assistance tools to state, local, and tribal grantees.	no matching requirements
U.S. Department of Transportation; Federal Highway Administration	Safe Routes to School	Up to \$100,000 for Non-Infrastructure projects; up to \$500,000 for infrastructure projects.	Projects eligible to receive funding under the SRTS program include those involving both infrastructure and non-infrastructure related activities. Eligible SRTS infrastructure project sites must be within two miles of an existing eligible school. Eligible schools are public or private schools that contain any of the grades from K-8.	no matching requirements



Organization Name	Grant Name	Range of Awards	Applicant Eligibility	Match Required
Texas Department of Transportation	Transportation Enhancement Program	\$250,000 project minimum to \$10 million project  Projects undertaken with enhancement funds are eligible for reimbursement of up to 80 percent of allowable costs.	TxDOT administers the federally funded Transportation Enhancement Program which provides opportunities for non-traditional transportation related activities. Projects should go above and beyond standard transportation activities and be integrated into the surrounding environment in a sensitive and creative manner that contributes to the livelihood of the communities, promotes the quality of our environment, and enhances the aesthetics of our roadways.  To be eligible for consideration, all projects must demonstrate a relationship to the surface transportation system and incorporate at least one of their 12 categories	20% project costs covered by applicant
Texas Parks and Wildlife Department Recreation Grants Branch:	Local Park Grant Program Recreational Trails Program	\$4,000 - \$200,000	Cities, Counties, State Agencies, Other governmental bodies, Federal Land Managers, Private NPOs, Private Motorized Recreation Providers	Up to 80% of project cost funded with 20% match
***Texas Parks and Wildlife Department Recreation Grants Branch:	Local Park Grant Program; Outdoor Recreation Grant	\$0.00 - \$500,000	This program provides 50% matching grant funds to municipalities, counties, MUDs and other local units of government with a population less than 500,000 to acquire and develop parkland or to renovate existing public recreation areas. Eligible applicants include political subdivisions of the State of Texas legally responsible for providing public recreation services to their citizens including cities, counties, river authorities, municipal utility districts, and other special districts.	50% of the actual expenditures, up to the support ceiling of the grant, will be reimbursed during the project period as billings are submitted.
U.S. Department of the Interior; National Park Service	Land and Water Conservation Fund		TPWD administers the Texas apportionments of LWCF through the Texas Recreation Park Account. If you are applying for an Indoor Grant, Outdoor Grant, or Small Community Grant, TPWD may consider your application for LWCF funding. You do not need to submit a separate application.	-
	Job Access and Reverse Commute Program		Eligible recipients: States and public bodies are eligible designated recipients. Eligible subrecipients are private non-profit organizations, State or local governments, and operators of public transportation services including private operators of public transportation services.  Eligible Activities: Capital planning and operating expenses for projects that transport low income individuals to and from jobs and activities related to employment, and for reverse commute projects.	80% cost share for capital projects; 50% match required for operating costs
	Urban Park and Recreation Recovery (Program is currently not funded but funding may be reinstated in the future)		Section 1005(b) of the UPARR Act states that at the Secretary's discretion, up to 15 percent of the program funds annually may be granted to local governments which do not meet eligibility criteria, but are located in Metropolitan Statistical Areas, provided that these grants to general purpose governments are in accord with the intent of the program. These governments may apply for grants under the program regardless of whether or not they are included on the list of eligible jurisdictions.	-



Organization Name	Grant Name	Range of Awards	Applicant Eligibility	Match Required
Conservation Fund	Kodak American Greenways Program	max award = \$2,500	The Program operated by The Conservation Fund invites land trusts, local governments, and other organizations to submit proposals for small greenway project grants. Funded projects typically advance one or more of the following Program goals: Catalyzing new greenway projects; Assisting grassroots greenway organizations; Leveraging additional money for conservation and greenway development; Promoting use and enjoyment of greenways. Grants may be used for activities such as: mapping, ecological assessments, surveying, conferences, and design activities; developing brochures, interpretative displays, audio-visual productions or public opinion surveys; hiring consultants, incorporating land trusts, building a foot bridge, planning a bike path, or other creative projects.	no matching requirements
Bikes Belong	Bikes Belong Grants Program	-	For the <b>facility</b> category, Bikes Belong will accept applications from nonprofit organizations whose missions are bicycle and/or trail specific. We will also accept applications from public agencies and departments at the national, state, regional, and local levels, however we encourage these municipalities to align with a local bicycle advocacy group that will help develop and advance the project or program.	-
Active Living Policy and Environmental Studies	Active Living Policy and Environmental Studies	-	Active Living Research supports research examining how environments and policies impact physical activity, especially among ethnic minorities and children living in low-income communities. Findings are expected to inform environmental and policy changes that will promote active living among children and families.	-
The Robert Wood Johnson Foundation	Childhood Obesity Grants	\$1,200 to \$50 million	RWJF funds efforts at the community, state and federal level to change public policies and local environments in ways that promote increased physical activity and improved nutrition for children—both of which are critical to reversing the childhood obesity epidemic. In particular, we focus on five broad approaches the evidence suggests will have  We focus on advancing policy changes that the latest research suggests will result in children consuming more healthy foods and beverages and fewer unhealthy foods and beverages. At the same time, we encourage policies that result in increased physical activity in schools and communities and decreased sedentary time.	-
The Robert Wood Johnson Foundation	Vulnerable Populations Grants	\$1,200 to \$50 million	There are four characteristics that we look for in prospective grantees:  3. The vision to work in nontraditional environments to solve problems that affect health. By working outside the usual areas of health focus, in places as diverse as schools, streets and jails, our grantees go to where health starts to introduce change. Our programs give people who need it most the opportunity and the means to take personal responsibility for improving their health and the quality of their lives.  4. The capacity to create immediate and lasting change. Our programs create immediate health improvement for the vulnerable people directly touched by their efforts, and reach exponentially outward by seeding change within a field, ultimately offering the potential for long-term, sustainable and broad scale health improvement within entire communities and ideas that can foment change across the nation.	-
The William and Flora Hewett Foundation	Environment Program Climate and Energy	-	The Environment Program is committed to dramatically lowering global emissions of greenhouse gases and traditional pollutants worldwide. As it attempts to achieve this goal, the Program pursues strategies in three areas:  1. Global Climate Policy 2. National Energy Policy 3. Sustainable Transportation	-
The Conservation Fund	American Greenways DuPont Grant Program	\$250 - \$2000	Left a message with Mr. Hall; the most current grant awarded appears to be in 1996	-
	Home Depot	Up to \$2,500	Grants, up to \$2,500, are now available to registered 501(c)(3) nonprofit organizations, public schools or tax-exempt public service agencies in the U.S. who are using the power of volunteers to improve the physical health of their community.	-

## APPENDIX M: DESIGN CONSIDERATIONS

Design for a successful walking and bicycling community begins with the design of its transportation network and the adjoining land uses. Street layout, block face lengths and perimeters as well as the overall nature of the built environment can encourage or discourage walking or bicycling.

Local, state, and federal plans, standards, and guidelines should be used to guide the development and construction of facilities. Some of these include the following:

- College Station Comprehensive Plan's Thoroughfare Plan;
- College Station Unified Development Ordinance;
- Bryan/College Station Unified Design Manual;
- American Association of Highway and Transportation Officials (AASHTO) Design Guidelines for bicyclists and pedestrians;
- Americans with Disabilities Act (ADA) Standards for Accessible Design; and
- Manual on Uniform Traffic Control Devices (MUTCD).

Not all aspects of design are embraced by these guidelines and standards, and are the purview of the designer. All designs should meet or exceed the provisions contained within these documents, most of which contain a significant amount of design flexibility. The flexibility offered in these documents should be fully explored by the designer to ensure that a facility design responds appropriately to its context and needs.

To provide a safe and convenient system, this section provides considerations to assist in updating existing plans, standards, and guidelines that will further the goals, strategies, and action items identified in this Plan.

### BICYCLE PARKING

#### Minimum Parking Spaces for Bicycle Racks

Currently, the City requires that non-residential buildings of all sizes accommodate parking for at least four bicycles. Buildings or centers with more than 50,000 square feet are required to accommodate at least eight bicycles. Multi-family developments, churches, and industrial facilities are currently exempt from these requirements.

It is recommended that the parking requirements for non-residential buildings and centers remain as currently stated and that similar requirements be established for all multi-family developments, all industrial facilities, and churches in suburban and urban areas. It is recommended that requirements should increase and shift to reflect context and size. For example, a large mixed-use development within an urban context would have more bicycle parking than a mid-sized development in a general suburban context.

## Bicycle Parking Racks

Currently, the City requires a specific bicycle rack for the Northgate District (Super Cycloops Model #2175) to ensure both adequate facilities and a uniform appearance. Elsewhere in the City, no specific rack is required. Rather, the selection of racks is guided by a performance standard – “Bicycle facilities shall be constructed so as to enable the user to secure a bicycle by locking the frame and one wheel of each bicycle parked therein. Facilities must be usable with both U-locks and cable locks and support the bicycle frame at two points.” There exists a vast variety of bicycle racks from which to choose including customized racks that promote a particular theme or design.



**FIGURE M-1: INVERTED U BICYCLE RACK**

Source: [www.pedbikeimages.org/DanBurden](http://www.pedbikeimages.org/DanBurden)

In an effort to provide both more flexibility and consistency, it is recommended that a menu of acceptable bicycle racks be identified by the City. Use of these racks would be permitted “by-right”. This menu should be further supplemented by language similar to that currently included in the UDO. It would be used to aid the Administrator in permitting alternatives when requested. Additional guidance should be taken from the bicycle parking recommendations created by Association of Pedestrian and Bicycle Professionals.

## Placement of Bicycle Racks

Currently within the Northgate District, the City requires bicycle racks to be located near the main entrance of a building. In other locations, no direct location guidance is provided. Throughout the City, such facilities are required to encourage use and to avoid conflicts with vehicles and pedestrians. Specific language should be added to or revised in the City’s ordinances requiring all bicycle parking facilities be located near (within 100 feet) and visible to the main entrance and ensures facilities do not interfere with vehicle operation or pedestrians.

## Showers and Locker Facilities

A few communities in the United States have begun requiring or encouraging the provision of showers and locker facilities to encourage commuting by bicyclists. College Station does not currently require nor actively encourage such facilities.

It is recommended that the City actively encourage such facilities in developments that are large in scale (where more than 75 persons are employed or over 100,000 square feet) or that are expected to attract a large number of bicycling commuters (e.g., educational facilities).

Encouragement may come in the form of direct financial subsidy or a reduction in required vehicle parking spaces.

## Funding/Acquisition of Bicycle Racks

Currently, the City provides bicycle racks at municipal buildings and in select areas of the Northgate District. The City does not have a program to provide racks at transit stops or within private developments. It is recommended that the City establish a program that shares the cost with private developers for the purchase and installation of racks in already established areas that would benefit from increased bicycling. This program could operate in a fashion similar to the City's current Strong & Sustainable Neighborhood Grant program. Further, as new districts are established in the City, efforts should continue that result in the purchase and installation of bicycle parking facilities.

## Incentives

While an increasing number of developers and business operators recognize the value of encouraging bicycling for their employees and customers, it remains necessary for the City to directly encourage the provision of bicycle parking facilities. Currently, the City provides an incentive through a possible administrative reduction in the required number of parking spaces for the provisions of bicycle facilities beyond the required bicycle racks, such as showers, lockers, etc.

It is recommended that the incentive language currently provided within the City's regulations be less discretionary and more explicit. Further, it is recommended that additional reductions in required vehicle parking be stated for the provision of bicycle parking spaces beyond the required minimum.

## ON-ROAD BICYCLE FACILITIES

### Bicycle Facility Types

Within College Station, it is proposed that two on-road bicycle facility types be provided that are consistent with past practices. These types are a signed and striped bike lane and a signed bike route. There are a variety of ways that these bicycle facility types can be accommodated and signed or striped. These will be described in further detail elsewhere in this Appendix.

### Bike Lane Widths

Currently, the City requires that bike lanes be striped to provide a minimum width of five feet, exclusive of the gutter or shoulder. Wider bike lanes are provided where appropriate. As with all of the guidelines discussed in this Appendix, AASHTO and MUTCD guidelines and requirements should be consulted. Where adjacent on-street parking exists, parking lanes adjacent to bike lanes should be wider to avoid conflicts with the opening of vehicle doors. Additional or unique striping may also be appropriate for areas where bike lanes are located adjacent to on-street

parking. In certain circumstances, it may even be necessary or appropriate to alter the manner in which parking is accommodated (back-in parking versus parallel).

## Parking in Bike Lanes

In general, the City prohibits parking in marked bike lanes. Parking is permitted in select areas for certain time periods or special events. It is recommended that this practice continue and that such areas continue to be clearly signed with the days and times such encroachments on the bike lanes are permitted.

## Bike Lane Markings

The latest version of the MUTCD should be consulted for the appropriate manner to mark bike lanes as new construction occurs or during retrofits to existing facilities. As noted previously, it may occasionally be necessary to supplement these guidelines with additional markings or signage due to unique circumstances.

## Bike Lane Travel Direction

Current City practices dictate that only one-way bike lanes be permitted. This is in contrast to multi-use paths which are located off-road and permit two-way travel. This is consistent with adopted guidelines and best practices found throughout the nation and are believed to provide the most predictable and safest bicycle operations. It is recommended that this practice continue.



**FIGURE M-2: BIKE ROUTE - ROAD WITH SHOULDER**

Source: [www.pedbikeimages.org/DanBurden](http://www.pedbikeimages.org/DanBurden)

## Bike Lane Surface Requirements

Current City practices require that bike lanes be constructed of the same materials as the vehicular roadbed. This ensures a safe and predictable surface for bicyclists. It is recommended that this practice continues.

## Bike Routes

Where it is not practical or desired to place bike lanes on the street, signed bike routes may be appropriate. Generally, these facilities are accommodated by signage indicating that the street is a dedicated bike route and that the street should be shared by motorists and bicyclists alike. Often these facilities include wider outside lanes to better accommodate sharing of the street. Paved shoulders may also be used. The location of routes is preferred in neighborhoods and where lower volumes of

traffic exist.

It is best to consider these routes as shared streets and it is recommended that signage, lane widths, pavement markings, etc. be provided in recognition of this sharing and as appropriate for the context of the street. Current practices in the City are to designate routes and to sign them. It is recommended that this practice continue. It is also recommended that where motor vehicle volumes are high and where right-of-way will accommodate bicyclists that wide outside lanes be provided (e.g., Texas Avenue [BUS 6]). It is further recommended that such facilities be provided where on-street parking is allowed. This may serve as an alternative to wider parking stalls and bike lanes in such instances. It is further recommended that the use of on-pavement shared lane markings (also known as sharrows) be considered for high volume situations to help highlight to motorists that the street is to be shared with bicyclists.



**FIGURE M-3: BIKE ROUTE WITH SHARROWS**

Source: [www.pedbikeimages.org/HeatherBowden](http://www.pedbikeimages.org/HeatherBowden)

## Other

Other considerations for bicycle facilities include taking steps to ensure that traffic control devices have been adjusted to accommodate bicyclists, that street parking will not obstruct a route for bicyclists, that a smooth surface is provided, that utility covers and inlets have been adjusted to accommodate bicyclists, and that the street is regularly kept free of accumulated debris.

## INTERSECTIONS

### **Bike Lane Striping with Exclusive Right Turn Lanes and Colored Bike Lanes**

Conflicts between bicycles and motor vehicles are common at intersections when a bicyclist traveling in a bike lane or right lane wishes to continue traveling straight while the motor vehicle wishes to turn right. Currently, the City addresses this concern with striping and signing that encourages crossings in advance of the intersection. Bicyclists traveling straight through the intersection should have a separate through lane, to the right of the motor vehicle through lanes, but left of any designated motor vehicle right turn lane. Additional guidance on bicycle movements through an intersection is available through AASHTO.



**FIGURE M-4: COLORED BIKE LANE**

Source: <http://www.nytimes.com/2009/08/09/us/09bike.html>

It is recommended that the City continue this practice and continue its efforts of retrofitting existing intersections to achieve this standard. Colored bike lanes should also be explored as a method to increase visibility of bicyclists. They are usually located at the conflict zone where motorists are trying to turn right and the bicyclist is going straight.

## Advanced Stop Lines or Bicycle Boxes

Communities across the nation and other countries are addressing high bicycle-motor vehicle collision intersections with a variety of treatments to minimize conflicts and improve safety. One such treatment is the provision of an advanced stop line or bicycle box at designated areas for bicyclists ahead of the vehicular stop bar and behind the crosswalk. This location highlights the presence of bicyclists, gives them an advanced start when moving through the intersection, and allows for a left turn. It is recommended that College Station explore the use such a treatment at intersections experiencing trends of high bicycle-motor vehicle collisions.



**FIGURE M-5: BICYCLE BOX**

SOURCE: [HTTP://WWW.LIVABLESTREETS.COM/STREETSWIKI/BIKE-BOXES](http://www.livablestreets.com/streetswiki/bike-boxes)

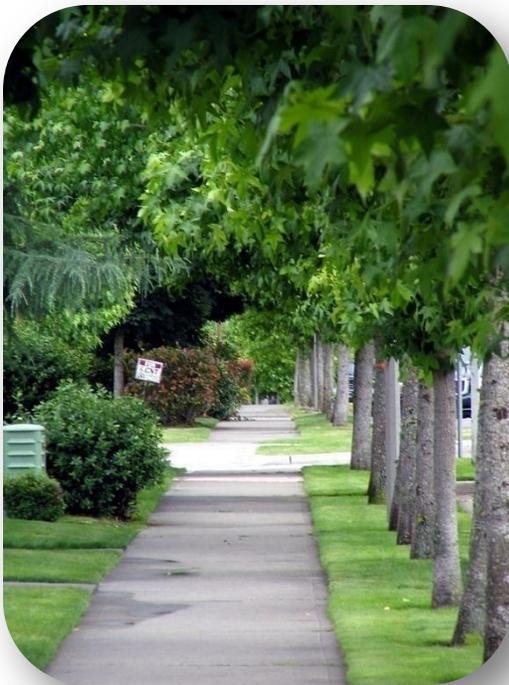
## Bicycle Signals and Detection

Common concerns of bicyclists maneuvering through controlled intersections include whether there is sufficient time on the signal for them to successfully move through the intersection and adequate detection by the traffic control system of the presence of the bicycle. Critical to these concerns is assurance that the yellow light signal is as long as permissible. Signal activation

should not require bicyclists to dismount to activate a push-button signal or otherwise be forced to assume the role of a pedestrian.

Current City policy indicates that “traffic signals responsive to the bicyclist shall be provided on streets where bike lanes are designated.” In practice, the application of this requirement has been sporadic due to cost and the use of standardized equipment.

It is recommended that all signalized intersections with a bicycle facility be analyzed to ensure that adequate yellow light time is provided. Intersections with bicycle facilities and high volumes of bicyclists should be equipped with detection systems and signs/pavement markings sufficient to accommodate bicyclists.



**FIGURE M-6: SIDEWALK**

Source: [www.pedbikeimages.org/DanBurden](http://www.pedbikeimages.org/DanBurden)

## PEDESTRIAN FACILITIES

### Sidewalks

In general, the City requires a five or six foot wide sidewalk along streets. Within the Northgate District, wider (eight to ten feet) sidewalks are required. Additionally, when sidewalks are placed adjacent to an arterial street, they are required to be no less than eight feet in width. Cul-de-sacs are not currently required to have sidewalks and most local subdivision streets are only required to have sidewalks on a single side. Slopes, cross-slopes, and other standards are all required by adopted national standards and guidelines.

It is recommended that sidewalk width be determined by the land use context and thoroughfare type to which they are located adjacent. In general, it is recommended that where sidewalks cross driveways, the sidewalk should be designed with level landings and returned or rolled curbs, and follow ADA accessibility guidelines.



**FIGURE M-7: SKEWED INTERSECTION**

Source: [www.tfhr.gov/.../06may/images/schwarzberg8.jpg](http://www.tfhr.gov/.../06may/images/schwarzberg8.jpg)

## Skewed Intersections

Occasionally, skewed intersections are unavoidable. Such intersections, however, increase the travel distances for pedestrians and thus require special attention. If possible, the angle between intersecting streets should be as close to 90 degrees as possible. At such intersections, crosswalks should be placed at the expected locations. Accessible medians for pedestrian refuge may also be appropriate.

## Pedestrian Crossings and Striping

The City provides crosswalks in appropriate locations, relying upon MUTCD for guidance in their placement and marking. Crosswalk markings should be used in locations where pedestrian activity is significant (such as in the vicinity of a school). In general, crossings at intersections are preferred, though it is not necessary or even desirable to place crosswalks at every intersection.

Occasionally, mid-block crossings may be necessary. It is recommended that markings and other treatments be determined based on context. Crossings near schools should include high visibility markings (such as continental style markings) and appropriate warning signage. Multi-lane crossing may require high visibility markings as well as refuge islands and curb extensions. Such crossings may also warrant overhead warning signs, flashing beacons, etc. in areas where high traffic volumes are also anticipated. Certain crossings (such as at limited access highways or at multi-lane/high-volume locations) may need to be grade separated.

In areas where decorative pavers are used to indicate crosswalks, it is required by MUTCD that the edges be marked with reflective white striping to clearly delineate the crosswalk to motorists.



**FIGURE M-8: CONTINENTAL CROSSWALK**

Source: [www.pedbikeimages.org/DanBurden](http://www.pedbikeimages.org/DanBurden)

## Pedestrian Signals

The City relies upon MUTCD guidelines for the location and timing of pedestrian signals and it is recommended that the practice continue. An upcoming update to the MUTCD guidelines will require pedestrian countdown displays for all new installations of pedestrian signals for pedestrian safety. At intersections experiencing high volumes of pedestrians, it is recommended that timing for pedestrian clearance be adjusted to the highest extent practical.

## Pedestrian Signage

The City also relies upon MUTCD guidelines for the location and type of pedestrian signs at intersections and it is recommended that the practice continue. Of particular note are several improvements in pedestrian signage being considered for adoption into an update of the MUTCD. It is recommended that once incorporated into the MUTCD, the City implement the new recommended practices and work to retrofit high pedestrian use areas as practical.

## Pedestrian Medians and Refuges

The City relies upon MUTCD guidelines for the location and type of pedestrian medians and refuges, and it is recommended that the practice continue. Medians and refuges should be raised and wide enough to provide sufficient storage space and add to the sense of safety for the pedestrian. Additional measures, such as bollards, may be appropriate in certain situations to add additional safety for the pedestrian.

## Pedestrian Ramps

The City relies on ADA Accessibility Guidelines for the location and design of pedestrian ramps and it is recommended that the practice continue. It is important that the placement and design of the ramps fully satisfy the unique needs of the disabled. Common mistakes include ramps that are off-set or ramps that lead into the center of the intersection rather than into the crosswalk. Care should be exercised to avoid such mistakes.



**FIGURE M-9: PEDESTRIAN CROSSING  
WITH ADA RAMP AND STRIPING**

Source: [www.pedbikeimages.org/DanBurden](http://www.pedbikeimages.org/DanBurden)

## Turning Radii

The City relies upon AASHTO and MUTCD to determine the location and size of turning radii at intersections. While it is recommended that this practice continues it is vital that the tightest possible turning radii be used. Tighter turning radii slow turning traffic. The distance across the intersection should also be kept as short as possible. Both of these features are important considerations for the safe accommodation of pedestrians. These considerations are especially crucial in certain contexts, such as urban or mixed-use areas where walkability is critical to the success of a development.



**FIGURE M-10: TRAFFIC CALMING**

Source: [www.pedbikeimages.org/DanBurden](http://www.pedbikeimages.org/DanBurden)

## Other

Efforts to promote walkability and to provide the safest possible environment for vehicles and pedestrians to co-exist require a full menu of treatments intended to calm traffic. In addition to the items identified earlier in this Appendix, these treatments include roundabouts, bulb-outs, and others. It is recommended that within land use contexts, where walkability is critical (in and around neighborhoods, within mixed-use and urban centers, etc.), that use of these treatments and use of the full flexibility in design afforded by AASHTO and MUTCD be used.

## COMBINED FACILITIES

### Multi-use Paths (also known as Greenway Trails or Side Paths)

Multi-use paths are currently designed to accommodate the two way traffic of both pedestrians and bicyclists in accordance with AASHTO and MUTCD guidelines. It is recommended that this practice continue, though it is further recommended that the flexibility offered within these guidelines be fully used. For example, it is recommended that the lowest practical design speed (10 mph) be used in the design of facilities. This will have an effect on the width of the facility, the turn radii, etc. In general, these pathways should be ten to twelve feet in width with two foot graded areas on either side. Occasionally, it may be necessary to construct a pathway that is eight feet wide. While acceptable, an eight foot width should only be used under certain conditions and circumstances, as currently noted in the UDO.

As with many of the other pedestrian and bicycle facilities, some of the design criteria are dependent upon context. The anticipated user and the purpose of the use (e.g., high speed commuting use versus lower speed recreational use), along with the land use context (e.g., urban mixed-use areas versus rural or estate areas), should guide the designer in the proper use of the adopted standards and guidelines as well as appropriate surface materials.

It is recommended that all-weather surfaces meeting all accessibility requirements be provided with multi-use paths. In general, this will likely be concrete or asphalt but alternative materials such as pervious pavement or crushed granite may be considered when appropriate or necessary for segments in particular contexts. It is generally recommended that the pathway materials be consistent through the entire corridor. Care should be exercised to avoid abrupt transitions in materials where variations are necessary. Under no circumstances should a pathway be constructed of materials that fail to provide full accessibility such as wood mulch, gravel, etc. The load bearing capacities of these facilities should also be designed to withstand maintenance and emergency vehicles where access by other means is not available. Boardwalks or bridges may also be necessary to cross streams in wetlands or poorly drained areas.



**FIGURE M-11: MULTI-USE PATH**

Source: [www.wfrc.org](http://www.wfrc.org)

It is recommended that lighting be kept to a minimum, but when provided for security reasons, it is pedestrian in scale. It is recommended that vegetative clearing be kept to a minimum with clearing only as necessary for construction or to achieve mandatory clear zones. In environmentally sensitive areas, it may be appropriate to selectively clear the pathway corridor rather than significantly clearing an area.

It is recommended that all signage and markings for the pathways comply with AASHTO and MUTCD standards. Further, it may be appropriate to supplement these “regulatory” signs with entry signs, wayfinding signs, or informational kiosks to add to the usefulness and attractiveness of the facility. This may also include interpretive signs that explain the natural, historic, or cultural elements along the path.

Where appropriate, trailheads should be provided. Ideally, these facilities should be placed to share parking with other uses such as schools, parks, etc. The facilities should be kept small and

include informational signage and trail map kiosks. Where necessary the trailheads may include restrooms, drinking fountains, and other street furniture.

Multi-use paths are best built in dry areas to minimize siltation and erosion damage. In many situations, multi-use paths will be built within the floodplain but outside of the floodway, except for the crossing of streams. In these areas, frequent flooding may occur and the use of a durable surface type such as concrete or boardwalks may be necessary. A vegetative buffer between the stream and path should stay intact or native vegetation should be introduced. A buffer between the path and residential homes should be coordinated with adjacent landowners for the integrity of the user's experience and the privacy of the landowner. Mitigation of any negative environmental impacts to the natural stream corridor should be considered. No negative impacts on flood control from the introduction of multi-use paths will be allowed.

## Road Diets

Occasionally, it may be necessary or desired to reduce the amount of street dedicated to the motor vehicle to better accommodate bicyclists or pedestrians using a road diet. Such roads are often roads that carry moderate volumes of motor vehicles but are currently sized (width, number of lanes, etc.) to carry many more vehicles. Other considerations for candidate road diets include streets that have current safety issues; the presence of essential bicycle routes or links; and locations within a redevelopment area, mixed-use urban area or a special district oriented to a highly walkable context (such as an entertainment district). The most common techniques include reducing travel speeds, reducing lane widths, reducing the number of lanes, adding pedestrian refuges, adding bike lanes, creating wider sidewalks, increasing pedestrian buffers, adding on-street parking, or creating a pedestrian mall.



**FIGURE M-12: FOUR LANE ROAD BEFORE ROAD DIET FOR BICYCLISTS**

Source: [www.saferoutesinfo.org/](http://www.saferoutesinfo.org/)Dan Burden



**FIGURE M-13: THREE LANE ROAD WITH BICYCLE LANES AFTER ROAD DIET**

SOURCE: [WWW.SAFEROUTESINFO.ORG/](http://WWW.SAFEROUTESINFO.ORG/)DAN BURDEN

It is recommended that streets which may be appropriate for such actions be considered as a part of the implementation of this Plan as well as when redevelopment plans, neighborhood plans, district plans, or corridor plans are developed by the City.

## Transit

The interaction between pedestrians, bicyclists, and transit is a key consideration to the successful implementation of a multi-modal network. Essentially, all transit trips originate as a pedestrian trip; therefore, it is critical that safe and convenient pedestrian routes exist to move pedestrians to transit stops. Likewise, it is critical that transit adequately accommodate bicyclists that rely upon transit for a portion of their trip. Convenient and safe transit stops are critical. It is recommended that the City work closely with the transit providers to provide convenient and safe transit shelters. It is further recommended that the City work with transit providers to explore the need for bicycle parking at or near transit stops.



**FIGURE M-14: BICYCLE ACCOMMODATION ON BUS**

Source: [www.pedbikeimages.org/DanBurden](http://www.pedbikeimages.org/DanBurden)