



CHAPTER 6

Implementation Strategy



CHAPTER 6 IMPLEMENTATION STRATEGY



The previous chapters analyzed Sugar Land’s existing pedestrian and bicycling facilities and identified where opportunities for new facilities exist. This section lays out a plan to implement those facilities and strategies to realize the goal of a citywide network. The implementation strategy includes the following items:

1. Prioritization methodology and criteria;
2. High priority recommendations;
3. Policy and operational recommendations;
4. Partnering with Homeowner Associations;
5. Funding Sources;
6. Implementation process and department roles;
7. Interagency partnerships; and
8. Monitoring implementation, measurements to gauge success.

1. Network Prioritization Methodology

The prioritization methodology is geared towards identifying near-term projects that will have the greatest impact. The priority assigned to each facility type was evaluated based on two major areas: feasibility and benefit.

Feasibility of the proposed facility

1. Is the corridor or right of way owned by the City of Sugar Land or available to be used?
2. Will the facility impact vehicular mobility in Sugar Land?
3. Is the corridor or facility easy to construct, or is it in a constrained area that may be more difficult to work in?



4. Will the proposed facility impact existing features along the corridor, such as existing trees or landscape?
5. What is the implementation cost of this segment? Is it relatively low and able to be done relatively soon, or is it higher in cost and does it require longer term funding sources such as bonds?
6. Has there been any specific citizen input regarding this facility, either for or against it?

Benefits of the proposed facility

1. How important is this improvement to citywide pedestrian and bicycle connectivity?
2. Does this segment help overcome a barrier or close a key gap?
3. Does it connect to local destinations such as schools, parks or nearby retail?
4. Is this a route that has had some previous bicycle or pedestrian incidents that have been reported?
5. Is it near an area that might have a higher degree of use?
6. Could it serve as a potential demonstration or catalyst project?

The individual scoring items for each evaluation element are shown in Figure 6-2. It is important to note that this prioritization matrix is intended to help evaluate segments and determine which should be built initially but that unique factors may come into play on some corridors that make them rank higher or lower.

YEARS 1 - 10 +/-	<ul style="list-style-type: none"> • Immediate (low cost projects, can be done now, possible funding identified) (2-3 years) • Near Term (critical gap connectors, etc.) • Mid Term (builds on near term projects, etc.)
YEARS 10+	<ul style="list-style-type: none"> • Long term (after 10 years, within ETJ area, etc.)

The priorities are ranked either as immediate, near term, mid term, or long term (see Figure 6-1). Immediate, near term and mid term priorities are recommended to be initiated or completed within ten years. Long term priorities are beyond ten years. Immediate priorities are projects that are low cost, can be completed within three (3) years, and a possible funding source has been identified. Near term projects are those that are critical gap connections

Figure 6-1 Summary of priority rankings

and can be completed within four to six (4 to 6) years. Mid term projects build on the immediate and near term projects and are expected to be completed within seven to ten (7 to 10) years. Finally, long term projects are mainly within the ETJ area and will be initiated beyond ten (10) years. The ultimate goal of this Plan is for the development the majority of the immediate, near term and mid term projects to be completed within approximately ten years.



Pedestrian and Bicycle Facility Prioritization Matrix

Corridor Name: _____ Score: **0**
 Type: _____ Length: _____
 Evaluation Element Percent of Overall Score - Select One Points

FEASIBILITY

Evaluation Element	Percent of Overall	Score - Select One	Points
1. Corridor Availability	10%		0
Majority of corridor available		3	
Available, requires simple negotiation for use		2	
Requires complex negotiation for use of corridor		1	
2. Impact on Vehicular Mobility	10%		0
No or minimal projected impact on vehicular capacity or mobility		3	
After improvement, roadway capacity exceeds 2x exist. ADT		2	
After improvement, roadway capacity is between 1.5 and 2x exist. ADT		1	
3. Constructability (Ease of Implementation)	5%		0
Easy corridor to work in, very few constraints		1.5	
Generally easy corridor to work in, some constraints		1	
Constrained corridor, significant physical constraints		0.5	
4. Impact on Existing Corridor Features	5%		0
Impacts less than 5% of existing landscape/trees		1.5	
Impacts between 5% and 20% of existing landscape/trees		1	
May impact more than 20% of existing landscape/trees		0.5	
5. Potential Implementation Cost	10%		0
Lowest 30th percentile by facility		3	
Between 30th and 70th percentile by facility		2	
Highest 30th percentile by facility		1	
6. Citizen Input Regarding this Corridor	10%		0
Positive support received		3	
Neutral feedback or no feedback at all		2	
Received citizen concerns regarding corridor		1	

BENEFIT

Evaluation Element	Percent of Overall	Score - Select One	Points
1. Importance to Citywide Connectivity	10%		0
Route with potential to serve major areas of the City		3	
Can connect multiple area neighborhoods		2	
Addresses local neighborhood connectivity only		1	
2. Helps overcome Barrier or Existing Gap	10%		0
Includes connection across major barrier or closes existing gap		4	
Provides link to route that crosses barrier		2	
Does not cross or link to any barrier crossing or close existing gap		0	
3. Connectivity to Local Destinations	10%		0
Connects to two or more local destinations (school, park or neighborhood center)		3	
Connects to one school park or local destination		2	
Doesn't connect to any local destinations		1	
4. Route with Prior Reported Bicycle or Pedestrian Incident	10%		0
Accident with injury report in last three years with injury		3	
Non-injury incident in last three years		2	
None reported along corridor in last three years		1	
5. Potential Usage	5%		0
Within 1 mile from Sugar Land Town Square		1.5	
Higher density area or near City attraction		1	
Limited nearby population		0.5	
6. Potential Demonstration/Catalyst Project	5%		0
Provides unique facility/demonstrates functionality of idea		2	
Not considered a demonstration or catalyst project		0	

Total | **100%** | **0**

Figure 6-2 Sample Prioritization Matrix



2. High Priority Recommendations

More than 370 segment recommendations contained in this Plan were evaluated using the prioritization tool discussed above. To assist in planning implementation, cost ranges for key infrastructure needs are shown as well. Costs shown are preliminary and are based on the order of magnitude costs established in Chapter 3. These estimates are general in nature and shown only to help plan for future funding needs. Where a bridge is recommended on a facility segment, the cost is included in that segment and noted. More detailed preliminary engineering reports or schematic designs are recommended before setting the final amount that needs to be funded for design and construction. Where judged to be needed for a particular segment, higher cost specialty items such as pedestrian bridges are included.

Additional corridor-specific needs such as right of way acquisition, widening where needed at certain intersections to accommodate bicycle lanes, significant additions to the existing pavement cross-section, major signal improvements and utility relocation if necessary should be accounted for in the detailed evaluation of each corridor. Costs shown are based on the cost projection assumptions discussed in Chapter 3 on page 55, but the costs do not include an escalation factor for inflation since their implementation timeframe is broad and lacks the specificity necessary to escalate costs accurately. All projections reflect 2013 costs and can be used for general planning purposes for immediate and near term projects (over the next one to two years). Beyond this, an escalation factor based on recent construction costs and up to date inflation trends should be considered once a specific timeframe is identified.

Figure 6-3 illustrates the overall proposed pedestrian and bicycle network. Furthermore, Figure 6-4 illustrates only the high priority recommended network (immediate, near term and mid term). Long term recommendations are discussed in Chapter 4 and shown in the tables in Appendix H, which gives details on all the recommendations sorted by priority.

Figures 6-5, 6-6, 6-7 and 6-8 illustrate the progression of growth in the pedestrian and bicycle network that will occur upon implementation of the immediate, near term and mid term priorities. More detailed high priority maps and tables by facility type are shown in the figures and tables on pages 145 to 157.



Proposed Pedestrian and Bicycle Facilities

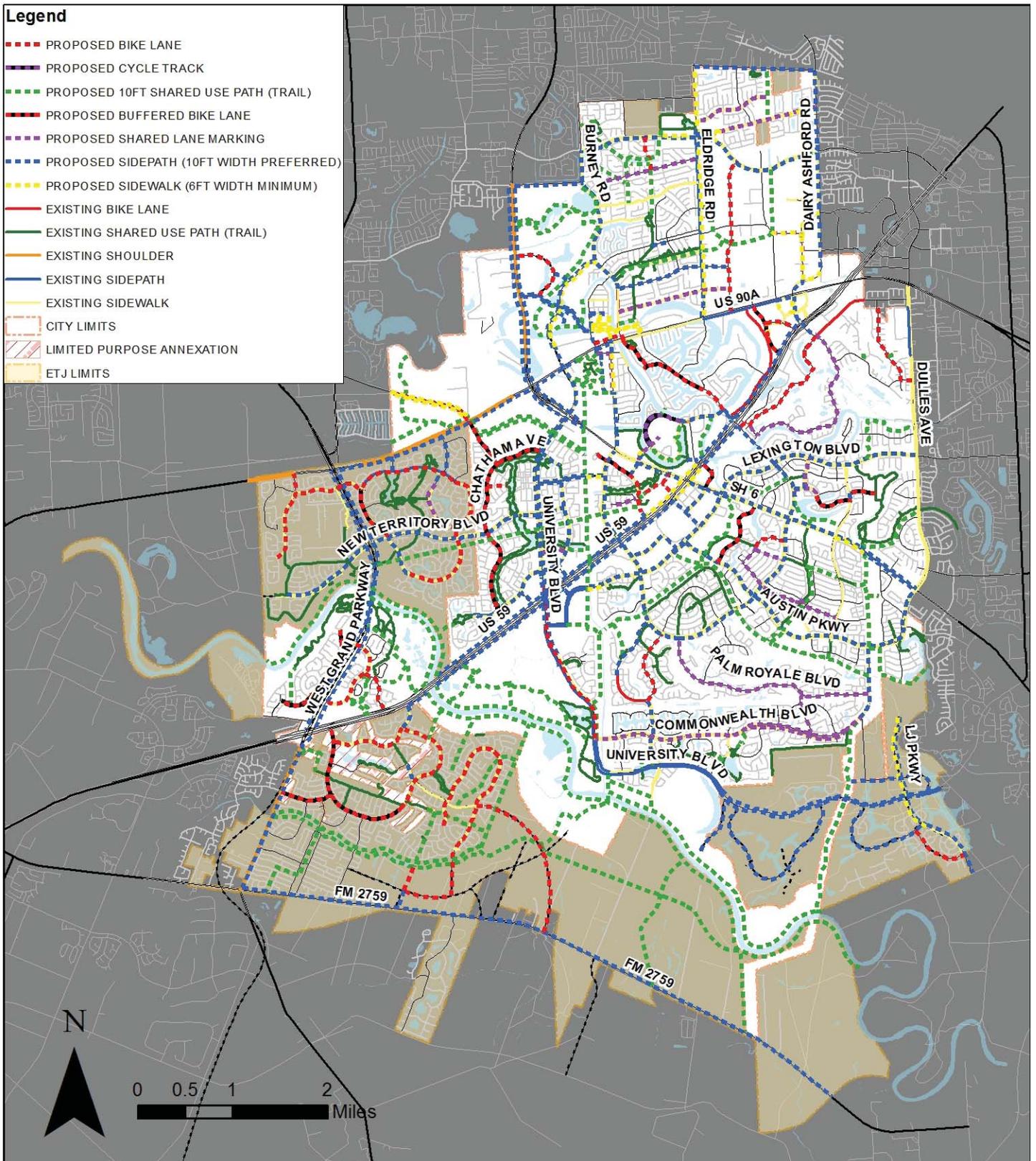


Figure 6-3 Proposed pedestrian and bicycle facility network



High Priority Pedestrian and Bicycle Facilities

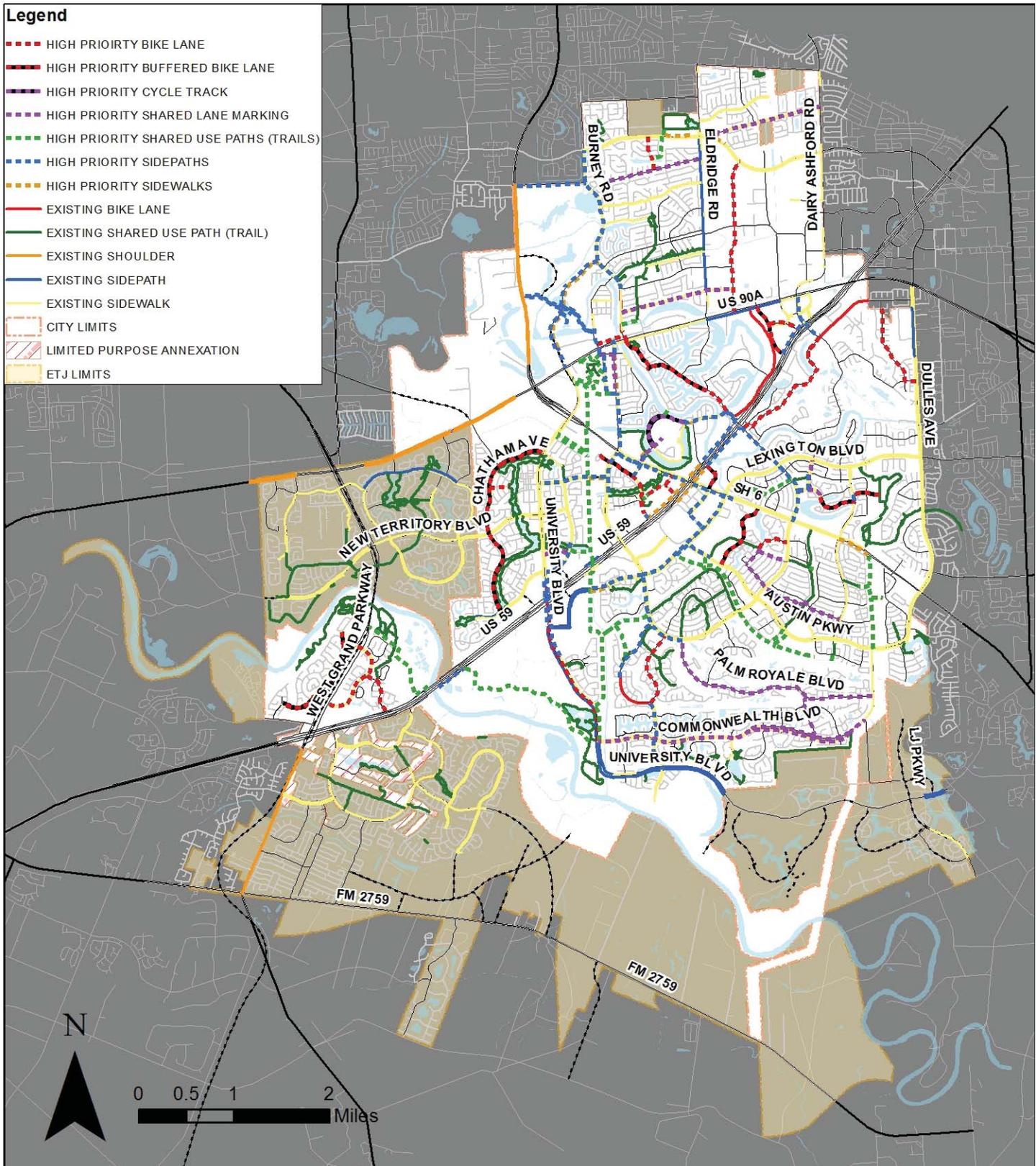


Figure 6-4 Proposed pedestrian and bicycle facility network - High priority



High Priority Facilities - Existing

Legend

— EXISTING

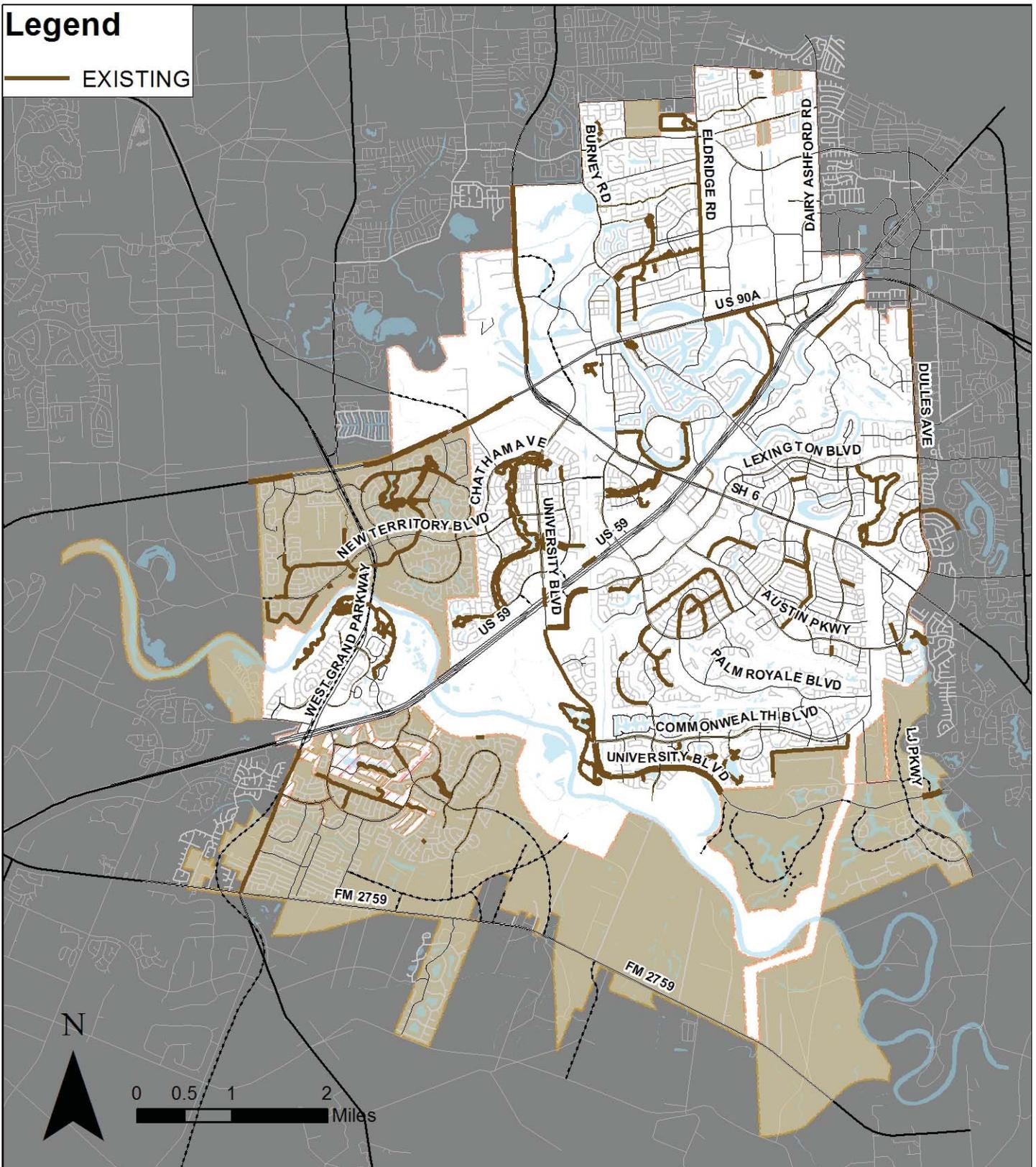


Figure 6-5 Existing pedestrian and bicycle facility network



High Priority Facilities - Immediate

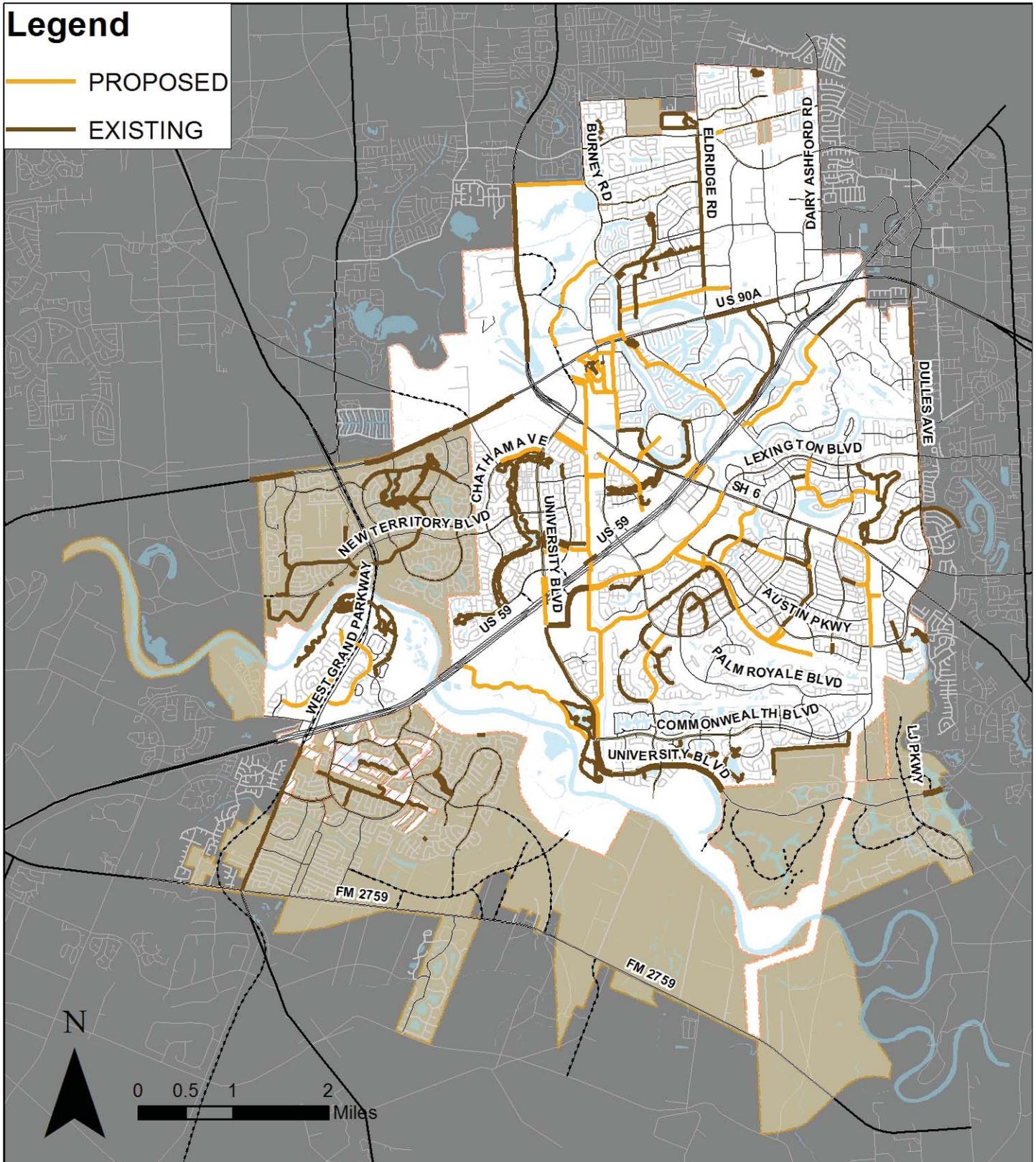


Figure 6-6 Existing and immediate pedestrian and bicycle facility network



High Priority Facilities - Through Near Term

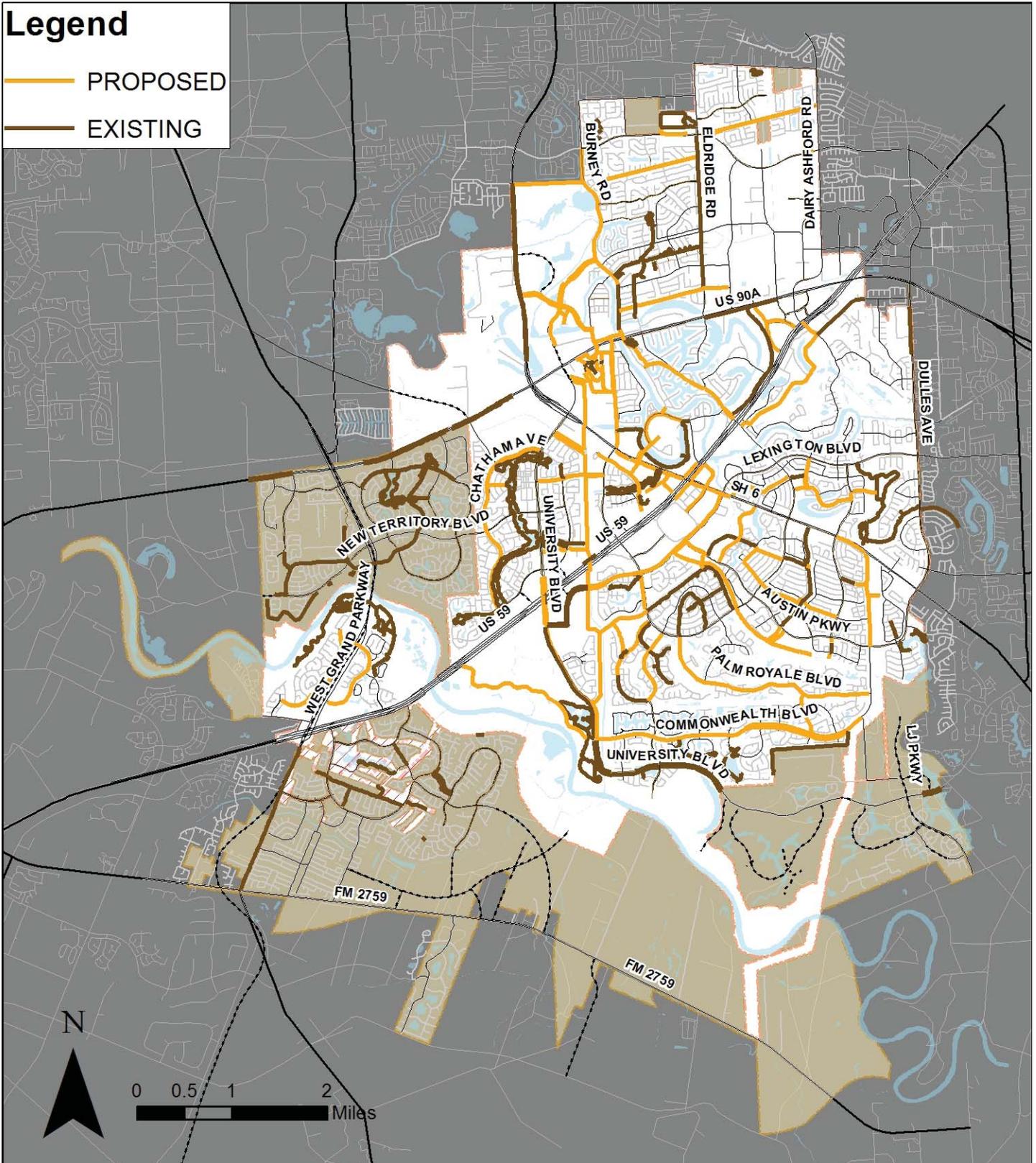


Figure 6-7 Existing, immediate and near term pedestrian and bicycle facility network



High Priority Facilities - Through Mid Term

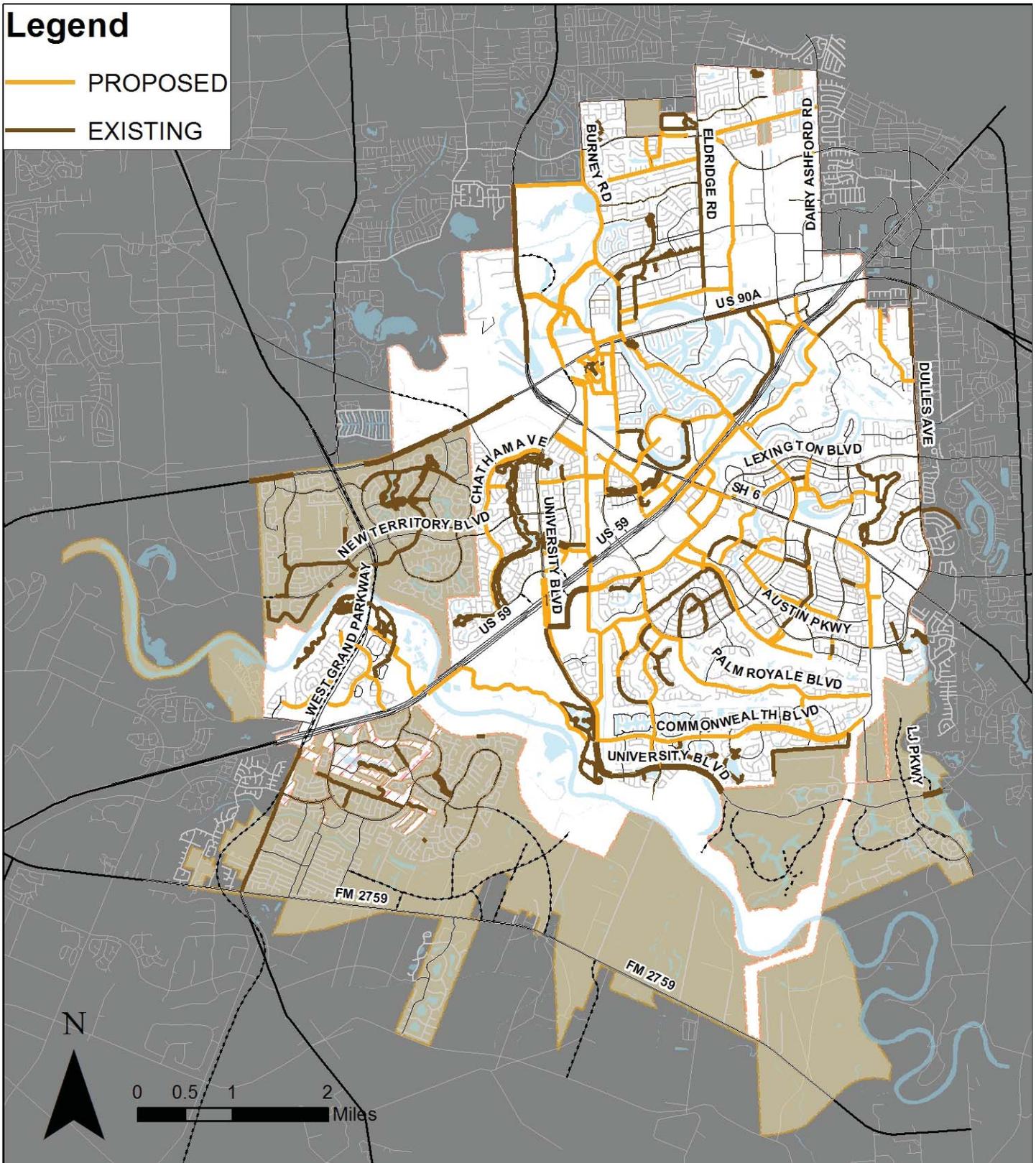


Figure 6-8 Existing, immediate, near term and mid term pedestrian and bicycle facility network



High Priority Shared Use Paths (Trails)

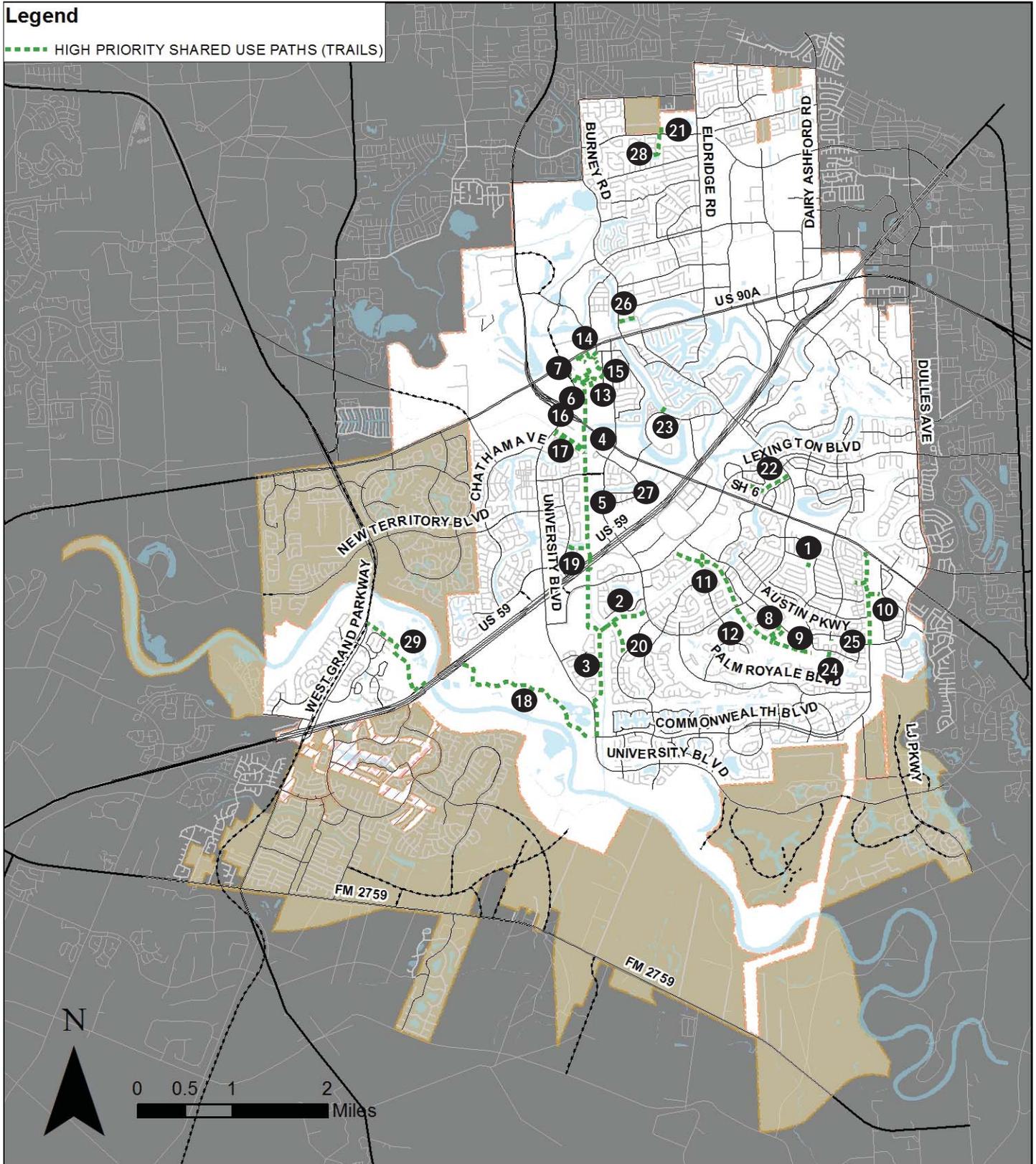


Figure 6-9



TABLE 6.1 HIGH PRIORITY SHARED USE PATH FACILITIES

#	Segment	From	To	Length (lf) +/-	Bridge Needed	Potential Cost +/-
IMMEDIATE (1 - 3 YEARS)						
1	COLONY GRANT TRAIL	MESQUITE PARK	SETTLERS WAY BLVD	300	BRIDGE	\$440,500
2	DITCH A TRAILS	DITCH H	SWEETWATER BLVD	3,100	BRIDGES (2)	\$1,668,500
3	DITCH H TRAILS	US 59	COMMONWEALTH BLVD	10,600		\$1,431,000
4	DITCH H TRAILS	STATE HWY 6	LEVEE 17 TRAIL CORRIDOR	1,400		\$189,000
5	DITCH H TRAILS	LEVEE 17 TRAIL CORRIDOR	US 59	6,000		\$810,000
6	DITCH H TRAILS	UNIVERSITY BLVD	STATE HWY 6	3,100		\$418,500
7	DITCH H TRAILS	UNIVERSITY BLVD	IMPERIAL PARK	1,200		\$162,000
8	FIRST COLONY AREA TRAIL	AUSTIN PARKWAY	DITCH A	1,100		\$148,500
9	FIRST COLONY AREA TRAIL	AUSTIN PARKWAY	DITCH A	1,000		\$135,000
10	FIRST COLONY POWERLINE TRAIL	STATE HWY 6	AUSTIN PARKWAY	6,600	BRIDGE	\$1,591,000
11	FIRST COLONY TRAIL	LEXINGTON BLVD	SWEETWATER BLVD	5,900	BRIDGES (2)	\$1,696,500
12	FIRST COLONY TRAIL	SWEETWATER BLVD	AUSTIN PARK	5,200	BRIDGE	\$1,152,000
13	IMPERIAL PARK	US 90A	BROOKS ST	2,100		\$283,500
14	IMPERIAL PARK	IN IMPERIAL PARK	IN IMPERIAL PARK	2,400		\$324,000
15	IMPERIAL PARK	IN IMPERIAL PARK	IN IMPERIAL PARK	2,400		\$324,000
16	LID 17 TRAIL CORRIDOR	UNIVERSITY BLVD	DITCH H	1,900		\$256,500
17	LID 17 TRAIL CORRIDOR	UNIVERSITY BLVD	DITCH H	2,100	BRIDGE	\$683,500
18	SUGAR LAND MEMORIAL PARK TRAILS	US 59	EXISTING TRAIL	9,400		\$1,269,000
19	TELFAIR LAKE TRAILS (DITCH H)	WESCOTT AVE	DITCH H	1,100		\$148,500
SUBTOTAL - IMMEDIATE PRIORITIES				66,900		\$13,131,500



TABLE 6.1 CONTINUED HIGH PRIORITY SHARED USE PATH FACILITIES

#	Segment	From	To	Length (lf) +/-	Bridge Needed	Potential Cost +/-
NEAR TERM (4 TO 6 YEARS)						
20	CLEMENTS HIGH SCHOOL	DITCH A TRAIL	ELKINS RD	1,900		\$256,500
21	ELDRIDGE PARK CONNECTION	ELDRIDGE PARK	WEST AIRPORT BLVD	400		\$54,000
22	HIGHLAND AREA NEIGHBORHOOD TRAIL	LEXINGTON BLVD/ STATE HWY 6	WILLIAMS TRACE BLVD	3,700		\$499,500
23	LAKE POINTE TRAILS EXTENSION	CREEKBEND DR	WHIMBREL DR	500		\$67,500
24	SETTLERS WAY BLVD DITCH TRAIL	MESQUITE DR	DITCH A TRAIL	400		\$54,000
25	SETTLERS WAY BLVD DITCH TRAIL	AUSTIN PARKWAY	EXISTING DITCH TRAIL	300		\$40,500
SUBTOTAL - NEAR TERM PRIORITIES				7,200		\$972,000
MID TERM (7 TO 10+ YEARS)						
26	FIRST ST	MAIN ST	WOOD ST	1,000		\$135,000
27	KENSINGTON TO MEADOW LAKE PARK CONNECTION	KENSINGTON DR	EXISTING TRAIL @ MEADOW LAKE PARK	500		\$67,500
28	NORTH DETENTION POND TRAIL	WEST AIRPORT BLVD	RETENTION PONDS IN RESERVE AT GLEN LAUREL	1,600		\$216,000
29	RIVER PARK TRAIL	GRAND PARKWAY	US 59	6,000		\$810,000
SUBTOTAL - MID PRIORITIES				9,100		\$1,228,500



High Priority Sidepaths

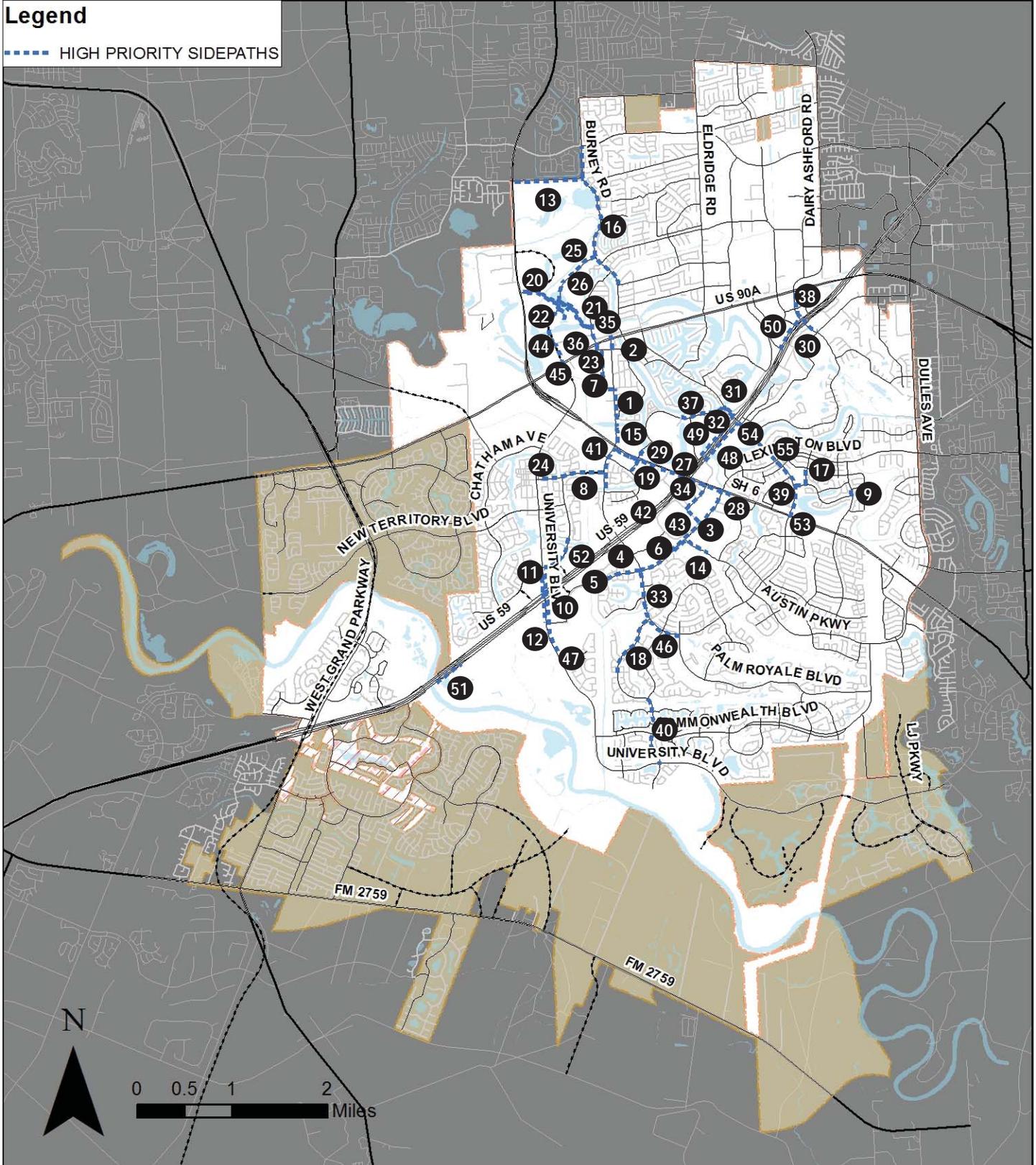


Figure 6-10



TABLE 6.2 HIGH PRIORITY SIDEPATH FACILITIES

#	Segment	From	To	Length (lf) +/-	Side of Street	Potential Cost +/-
IMMEDIATE (1 - 3 YEARS)						
1	BROOKS ST	AZALEA	BRIDGE	2,200	EAST	\$275,000
2	BROOKS ST	US 90A	GUENTHER	800	EAST	\$100,000
3	LEXINGTON BLVD	SWEETWATER BLVD	STATE HWY 6	6,700	NORTH	\$837,500
4	LEXINGTON BLVD	OXBOW DR	SWEETWATER BLVD	2,100	NORTH	\$262,500
5	LEXINGTON BLVD	DITCH H	OXBOW DR	1,000	NORTH	\$125,000
6	LEXINGTON BLVD	DITCH A	AUSTIN PARKWAY	1,000	SOUTH	\$125,000
7	MATLAGE WAY	EXISTING SIDEPATH @ IPRC	BROOKS ST	2,000	SOUTH/WEST	\$250,000
8	MEADOWCROFT BLVD	DITCH H	FIRST COLONY BLVD	1,100	NORTH	\$137,500
9	SETTLERS WAY BLVD	LOST CREEK BLVD	EDGEWATER DR	400	WEST	\$50,000
10	UNIVERSITY BLVD	US 59	LEXINGTON BLVD	1,700	WEST	\$212,500
11	UNIVERSITY BLVD RAMP	EXISTING SIDEWALK	EXISTING BIKE LANE	420	EAST	\$52,500
12	UNIVERSITY BLVD RAMP	EXISTING SIDEWALK	EXISTING BIKE LANE	680	WEST	\$85,000
13	VOSS RD	STATE HWY 6	BURNEY RD	3,900	SOUTH	\$487,500
SUBTOTAL - IMMEDIATE PRIORITIES				20,100		\$2,512,500
NEAR TERM (4 TO 6 YEARS)						
14	AUSTIN PARKWAY	LEXINGTON BLVD	DITCH A	1,600	NORTH/EAST	\$200,000
15	BROOKS ST	BRIDGE	STATE HWY 6	1,100	EAST	\$137,500
16	BURNEY RD	WEST AIRPORT BLVD	SEVENTH ST / MAIN ST	8,700	WEST	\$1,087,500
17	COLONIST PARK DR	PECAN POINT DR	EDGEWATER DR	1,000	WEST	\$125,000
18	ELKINS RD	SWEETWATER BLVD	COLONY CROSSING DR	3,700	WEST	\$462,500
19	FLUOR DANIEL DR	LAKE POINT TRAIL	SOLDIERS FIELD DR	1,500	SOUTH	\$187,500
20	IMPERIAL BLVD	STATE HWY 6	ULRICH ST	9,400	BOTH	\$1,175,000
21	IMPERIAL DEVELOPMENT	IMPERIAL BLVD	NORTH OYSTER CREEK TRAIL	1,000	BOTH	\$125,000
22	IMPERIAL DEVELOPMENT	STADIUM DRIVE	IMPERIAL DEVELOPMENT SIDEPATH	600	BOTH	\$75,000
23	MATLAGE WAY	GUENTHER	EXISTING SIDEPATH @ IPRC	500	WEST	\$62,500
24	MEADOWCROFT BLVD	UNIVERSITY BLVD	DITCH H	2,700	NORTH	\$337,500
25	STADIUM DRIVE	BURNEY RD	IMPERIAL BRIDGE	2,000	NORTH	\$250,000
26	STADIUM DRIVE	IMPERIAL BRIDGE	IMPERIAL BLVD	1,300	NORTH/WEST	\$162,500



TABLE 6.2 CONTINUED HIGH PRIORITY SIDEPATH FACILITIES

#	Segment	From	To	Length (lf) +/-	Side of Street	Potential Cost +/-
NEAR TERM (4 TO 6 YEARS) CONTINUED						
27	STATE HWY 6	US 59	TOWN CENTER BLVD	1,000	SOUTH	\$125,000
28	STATE HWY 6	TOWN CENTER BLVD	DITCH E	1,500	SOUTH	\$187,500
29	STATE HWY 6	BROOKS ST	US 59	4,000	SOUTH	\$500,000
30	SUGAR CREEK BLVD	US 59	COUNTRY CLUB BLVD	1,100	NORTH/EAST	\$137,500
31	SUGAR LAKES DR	CREEK BEND DR	US 59	800	NORTH	\$100,000
32	SUGAR LAKES DR	CREEK BEND DR	US 59	800	SOUTH	\$100,000
33	SWEETWATER BLVD	LEXINGTON BLVD	DITCH A TRAIL	2,100	WEST	\$262,500
34	TOWN CENTER BLVD N	STATE HWY 6	MALL RING RD	1,800	NORTH	\$225,000
35	ULRICH ST	AVENUE A	US 90A	1,300	EAST	\$162,500
36	ULRICH ST	US 90A	GUENTHER	300	EAST	\$37,500
SUBTOTAL - NEAR TERM PRIORITIES				45,800		\$6,225,000
MID TERM (7 TO 10+ YEARS)						
37	CREEKBEND DRIVE	OYSTER COVE DR	SUGAR LAKES DR	2,600	NORTH	\$325,000
38	DIARY ASHFORD RD	US 90A	US 59	1,500	EAST	\$187,500
39	EDGEWATER DR	WILLIAMS TRACE BLVD	COLONIST PARK DR	700	NORTH	\$87,500
40	ELKINS RD	ALCORN OAKS DR	UNIVERSITY BLVD	4,000	WEST	\$500,000
41	FIRST COLONY BLVD	STATE HWY 6	COLONY LAKES DR	2,600	EAST	\$325,000
42	LOWE'S CONNECTION	US 59	SOLDIERS FIELD DR	300	SOUTH	\$37,500
43	MALL RING RD	TOWN CENTER BLVD	LEXINGTON BLVD	1,000	NORTH/EAST	\$125,000
44	STADIUM DRIVE	IMPERIAL BLVD	OLD IMPERIAL BLVD	2,700	WEST	\$837,500
45	STADIUM DRIVE	OLD IMPERIAL BLVD	US 90A	1,300	EAST	\$162,500
46	SWEETWATER BLVD	DITCH A TRAIL	PALM ROYALE BLVD	2,800	SOUTH/WEST	\$350,000
47	UNIVERSITY BLVD	US 59	NORTH OF WENTWORTH AVE	3,500	EAST	\$437,500
48	US 59	TOWN CENTER DR	WILLIAMS TRACE BLVD	2,900	SOUTH	\$362,500
49	US 59	LAKE POINTE PKWY	SUGAR LAKES DR	3,000	NORTH	\$375,000
50	US 59	COMMERCE GREEN BLVD	DAIRY ASHFORD RD	2,100	NORTH	\$262,500
51	US 59	BRAZOS RIVER	BRAZOS RIVER PARK	1,800	SOUTH	\$225,000
52	WESCOTT AVE	PRESTWICK AVE	UNIVERSITY BLVD	2,400	NORTH	\$300,000
53	WILLIAMS TRACE BLVD	FERRY LANDING	STATE HWY 6	2,400	EAST	\$300,000
54	WILLIAMS TRACE BLVD	US 59	LEXINGTON BLVD	2,900	SOUTH/WEST	\$362,500
55	WILLIAMS TRACE BLVD	LEXINGTON BLVD	FERRY LANDING	1,200	SOUTH/WEST	\$150,000
SUBTOTAL - MID PRIORITIES				41,700		\$5,712,500



High Priority Sidewalks

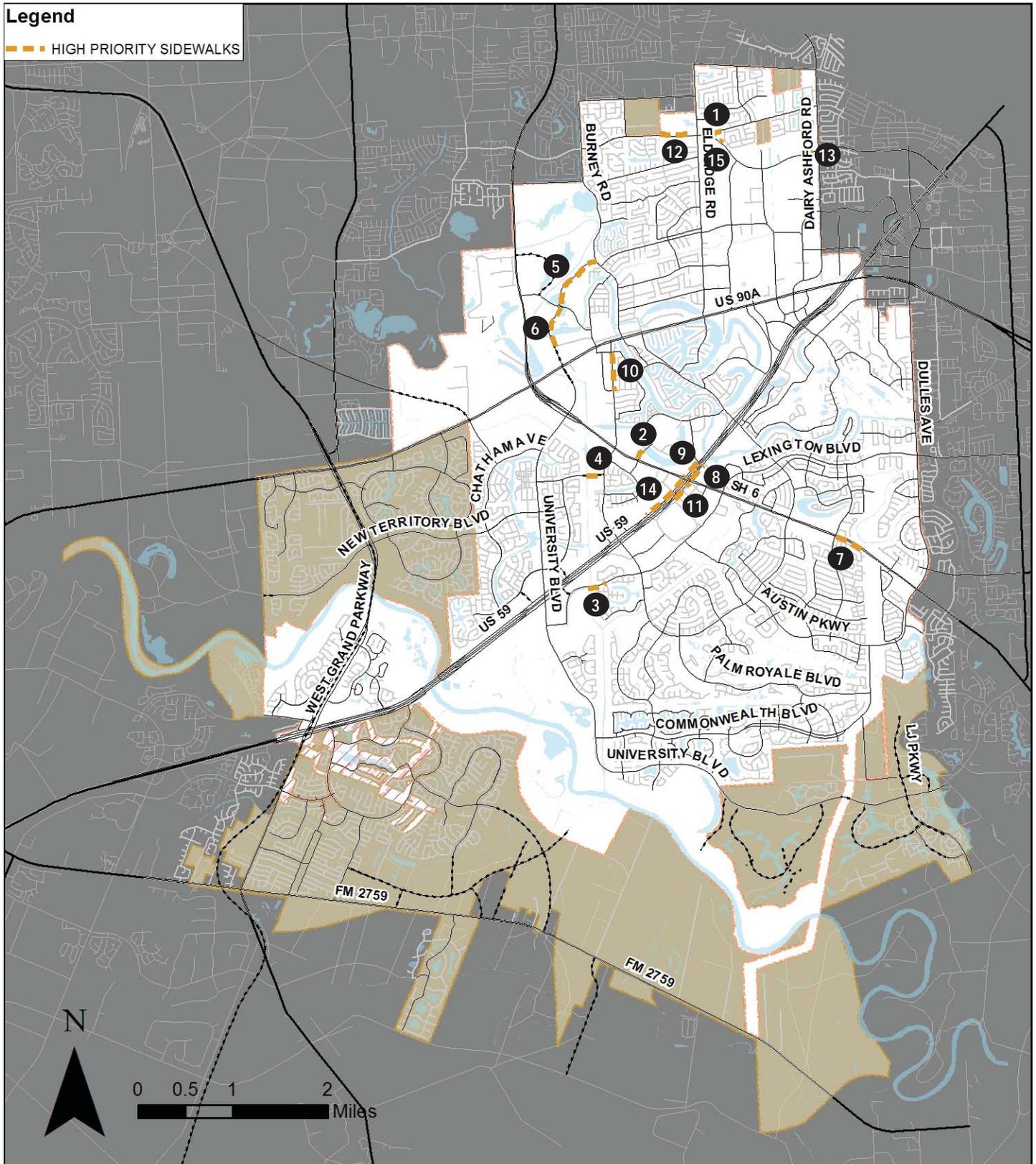


Figure 6-11



TABLE 6.3 HIGH PRIORITY SIDEWALK FACILITIES

#	Segment	From	To	Length (lf) +/-	Side of Street	Potential Cost +/-
IMMEDIATE (1 - 3 YEARS)						
1	ALSTON RD	WEST AIRPORT BLVD	SUMMERFIELD PL	700	SOUTH	\$28,000
2	FLUOR DANIEL DR	STATE HWY 6	LAKE POINT TRAIL	600	NORTH/ WEST	\$24,000
3	LEXINGTON BLVD	DITCH H	OXBOW DR	1,100	SOUTH	\$44,000
4	MEADOWCROFT BLVD	DITCH H	FIRST COLONY BLVD	1,100	SOUTH	\$44,000
5	STADIUM DRIVE	BURNEY RD	IMPERIAL BLVD	3,400	SOUTH/ EAST	\$136,000
6	STADIUM DRIVE	IMPERIAL BLVD	OLD IMPERIAL BLVD	2,400	EAST	\$96,000
7	STATE HWY 6	SETTLERS WAY BLVD	POWERLINE TRAIL CORRIDOR	1,900	SOUTH	\$76,000
8	US 59	STATE HWY 6	TOWN CENTER BLVD	1,100	SOUTH	\$44,000
9	US 59	STATE HWY 6	LAKE POINTE PARKWAY	1,100	NORTH	\$44,000
SUBTOTAL - IMMEDIATE PRIORITIES				13,400		\$536,000
NEAR TERM (4 TO 6 YEARS)						
10	BROOKS ST	GUENTHER ST	AZALEA	2,200	EAST	\$88,000
11	US 59	MALL RING RD	STATE HWY 6	1,300	SOUTH	\$52,000
12	WEST AIRPORT BLVD	DRAINAGE	WEST OF ELDRIDGE RD	1,600	NORTH	\$64,000
13	WEST AIRPORT BLVD	SIDEWALK	DAIRY ASHFORD RD	700	NORTH	\$28,000
SUBTOTAL - NEAR TERM PRIORITIES				5,800		\$232,000
MID TERM (7 TO 10+ YEARS)						
14	US 59	LOWE'S	STATE HWY 6	2,900	NORTH	\$116,000
15	WEST AIRPORT BLVD	EAST OF ELDRIDGE RD	STANCLIFF OAKS	1,200	NORTH	\$48,000
SUBTOTAL - MID PRIORITIES				4,100		\$164,000



High Priority Bicycle Lanes

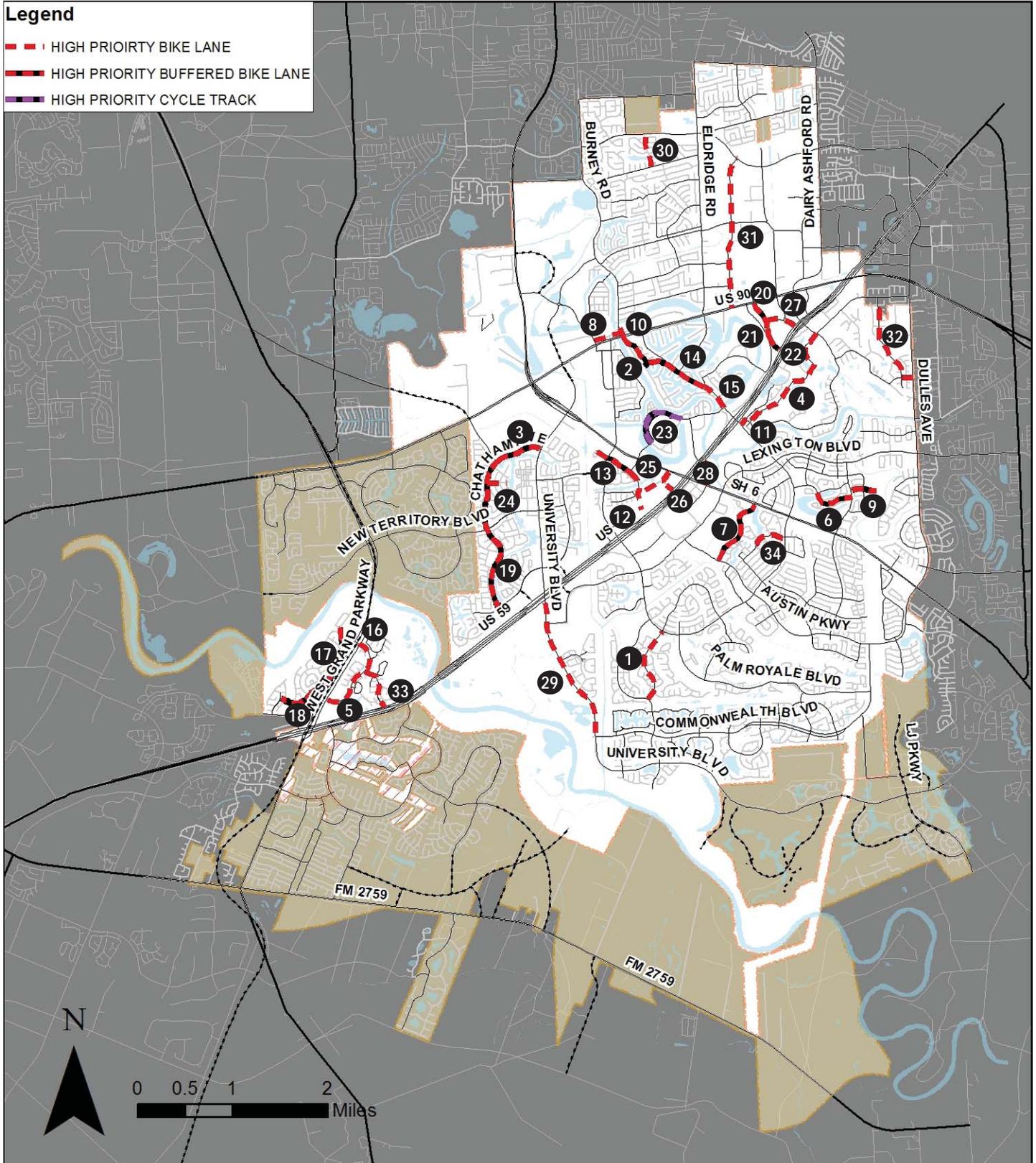


Figure 6-12



TABLE 6.4 HIGH PRIORITY ON-STREET BICYCLE FACILITIES

#	Segment	From	To	Length (lf) +/-	Recommended Facility	Potential Cost +/-
IMMEDIATE (1 - 3 YEARS)						
1	ALCORN OAKS DR	SWEETWATER BLVD	ELKINS RD	4,400	BIKE LANE	\$41,700
2	BAYVIEW DR	US 90A	SUGAR LAKES DR	2,100	BUFFERED BL	\$29,900
3	CHATHAM AVE	EASTON AVE	UNIVERSITY BLVD	2,400	BUFFERED BL	\$34,100
4	COUNTRY CLUB BLVD	SUGAR CREEK BLVD	S PARKWAY BLVD	7,500	BIKE LANE	\$71,100
5	EAST RIVERPARK DR	GRAND PARKWAY	WALGREENS AT WEST GRAND PKWY AND EAST RIVERPARK	5,300	BIKE LANE	\$50,200
6	EDGEWATER DR	WATERS WAY DR	SETTLERS WAY BLVD	2,400	BUFFERED BL	\$34,100
7	GRANTS LAKE BLVD	SH 6	AUSTIN PARKWAY	4,200	BUFFERED BL	\$59,700
8	KEMPNER	ULRICH ST	MAIN ST	1,600	BIKE LANE	\$15,200
9	LOST CREEK BLVD	SETTLERS WAY BLVD	OYSTER CREEK PARK	1,400	BUFFERED BL	\$19,900
10	MAIN ST	IMPERIAL BLVD	US 90A	600	BIKE LANE	\$5,700
11	PARKWAY BLVD	DAVID SEARLES BLVD	WILLIAMS TRACE BLVD	400	BIKE LANE	\$3,800
12	SOLDIERS FIELD	FLUOR DANIEL DR	SOLDIERS FIELD CT CUL-DE-SAC	2,400	BIKE LANE	\$22,800
13	SOLDIERS FIELD	FIRST COLONY BLVD	FLUOR DANIEL DR	2,200	BUFFERED BL	\$31,300
14	SUGAR LAKES DR	SANDPIPER DR	CREEKBEND DR	1,600	BIKE LANE	\$15,200
15	SUGAR LAKES DR	OYSTER CREEK DR	SANDPIPER DR	3,800	BUFFERED BL	\$54,000
16	WEST RIVERPARK DR	WIMBERLY CANYON DR	GRAND PARKWAY	800	BIKE LANE	\$7,600
17	WIMBERLY CANYON DR	THISTLEROCK LN	BRAZOS SPRINGS DR	3,200	BUFFERED BL	\$45,500
18	WIMBERLY CANYON DR	BRAZOS SPRINGS DR	INDIGO RIVER LN	3,200	BUFFERED BL	\$45,500
SUBTOTAL - IMMEDIATE PRIORITIES				49,500		\$587,300



TABLE 6.4 CONTINUED HIGH PRIORITY ON-STREET BICYCLE FACILITIES

#	Segment	From	To	Length (lf) +/-	Recommended Facility	Potential Cost +/-
NEAR TERM (4 TO 6 YEARS)						
19	CHATHAM AVE	EASTON AVE	TELFAIR AVE	9,100	BUFFERED BIKE LANE	\$129,300
20	COMMERCE GREEN BLVD	FORT BEND CHAMBER OF COMMERCE	FORT BEND CHAMBER OF COMMERCE	400	BIKE LANE	\$3,800
21	COMMERCE GREEN BLVD	US 90A	SOUTH OF SUGAR CREEK CENTER BLVD	1,600	BUFFERED BIKE LANE	\$22,800
22	COMMERCE GREEN BLVD	SOUTH OF SUGAR CREEK CENTER BLVD	US 59	1,000	BUFFERED BIKE LANE	\$14,300
23	CREEKBEND DRIVE	FLUOR DANIEL DR	PRUDENTIAL CIR	3,500	CYCLE TRACK	\$49,800
24	HETHERINGTON AVE	CHATHAM AVE	TELFAIR LAKES	1,100	BIKE LANE	\$10,500
25	KENSINGTON DR	SH 6	CUL-DE-SAC	1,800	BIKE LANE	\$17,100
26	LAKESIDE PLAZA DR	KENSINGTON DR	US 59 / SOUTHWEST FREEWAY	800	BIKE LANE	\$7,600
27	SUGAR CREEK CENTER BLVD	COMMERCE GREEN BLVD	US 59	1,700	BIKE LANE	\$16,100
28	TOWN CENTER BLVD N	SH 6	US 59	1,600	BUFFERED BIKE LANE	\$22,800
29	UNIVERSITY BLVD	US 59	COMMONWEALTH BLVD	8,300	BIKE LANE	\$78,600
SUBTOTAL - NEAR TERM PRIORITIES				30,900		\$372,700
MID TERM (7 TO 10+ YEARS)						
30	COTTONWOOD CT	WEST AIRPORT BLVD	GREENWAY DR	1,900	BIKE LANE	\$18,000
31	GILLINGHAM LN	WEST AIRPORT BLVD	US 90A	8,600	BIKE LANE	\$81,500
32	LONGVIEW DR	AMESBURY CT	DULLES AVE	5,100	BIKE LANE	\$48,300
33	SUMMIT CREEK	EAST RIVERPARK DR	US 59	2,600	BIKE LANE	\$24,700
34	WILLIAMS GRANT	NORTH OF SUGAR MILL DR	WILLIAMS TRACE BLVD	1,800	BIKE LANE	\$17,100
SUBTOTAL - MID TERM PRIORITIES				20,000		\$189,600



High Priority Shared Lane Markings

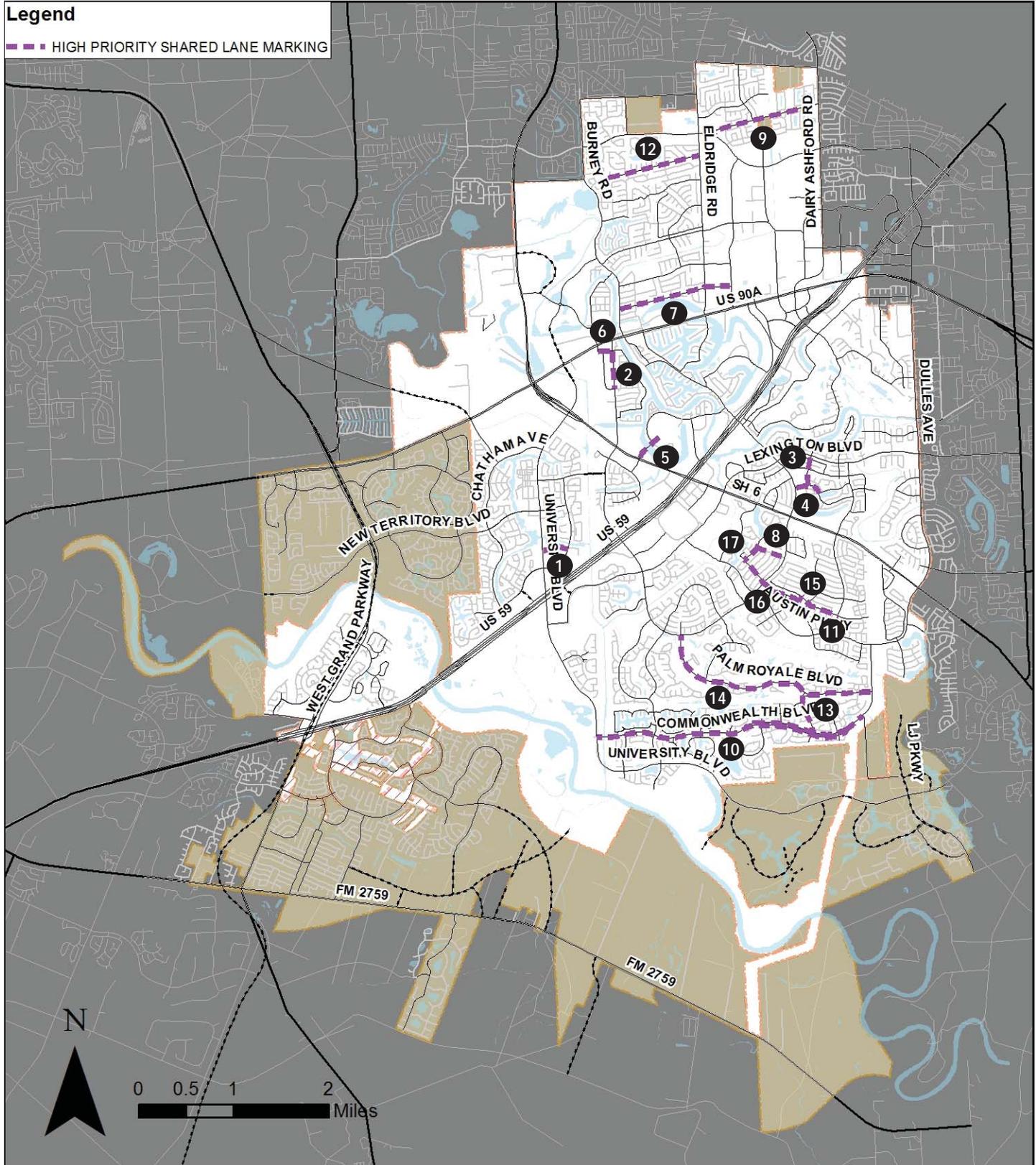


Figure 6-13



TABLE 6.5 HIGH PRIORITY SHARED LANE MARKING FACILITIES

#	Segment	From	To	Length (lf) +/-	Potential Cost +/-
IMMEDIATE (1 - 3 YEARS)					
1	BRANFORD PLACE	UNIVERSITY BLVD	WESCOTT AVE	1,500	\$6,000
2	BROOKS ST	GUENTHER	AZALEA/MATLAGE WAY	2,200	\$8,800
3	COLONIST PARK DR	LEXINGTON BLVD	EDGEWATER DR	1,700	\$6,800
4	EDGEWATER DR	WILLIAMS TRACE BLVD	WATERS WAY DR	1,500	\$6,000
5	FLUOR DANIEL DR	CREEKBEND DR	OYSTER CREEK DR	1,800	\$7,200
6	GUENTHER	ULRICH ST	BROOKS ST	900	\$3,600
7	LAKEVIEW DR	MAIN ST	GILLINGHAM LN	6,300	\$25,200
8	SUGAR MILL DR	WILLIAMS GRANT	WILLIAMS TRACE BLVD	1,700	\$6,800
SUBTOTAL - IMMEDIATE PRIORITIES				17,600	\$70,400
NEAR TERM (4 TO 6 YEARS)					
9	ALSTON RD	WEST AIRPORT BLVD	DAIRY ASHFORD RD	6,200	\$24,800
10	COMMONWEALTH BLVD	UNIVERSITY BLVD	SCENIC RIVERS DR	21,500	\$86,000
11	GREEN FIELDS DR	PECAN RIDGE DR	SETTLERS WAY BLVD	2,400	\$9,600
12	GREENWAY DR	HANBURY CT	ELDRIDGE RD	5,200	\$20,800
13	KNIGHTSBRIDGE BLVD	PALM ROYALE BLVD	COMMONWEALTH BLVD	2,500	\$10,000
14	PALM ROYALE BLVD	SWEETWATER BLVD	COMMONWEALTH BLVD	12,800	\$51,200
15	PECAN RIDGE DR	PLANTERS ST	GREEN FIELDS DR	400	\$1,600
16	PLANTERS ST	WILLIAMS GRANT	PECAN RIDGE DR	4,000	\$16,000
17	WILLIAMS GRANT	NORTH OF SUGAR MILL DR	PLANTERS ST	1,200	\$4,800
SUBTOTAL - NEAR TERM PRIORITIES				56,200	\$224,800



High Priority Barriers

Barrier recommendations discussed in Chapter 4 are summarized in Table 6.6 below.

TABLE 6.6 PRIORITY ENHANCEMENTS TO RESOLVE BARRIERS

#	Facility Location	Recommended Improvements	Projected Costs +/-	Priority
B1	Ditch H Trail at US 59	Security lighting, trail connections to east and west bound frontage road	Included as part of Ditch H project	Immediate
B2	SH 6 at US 59 (west side)	Relocate US 59 U-turn to provide 12' wide pedestrian zone with pavers, protective wall, enhanced lighting, landing and sidewalks on north side	\$400,000 to \$500,000	Near to mid term
B3	Sweetwater/First Colony at US 59 (west side)	Enhanced pedestrian area with pavers, lighting, landing and ramp widening	\$150,000 to \$300,000	Near to mid term
B4	University (both sides)	Ramp widening, paver walking areas, long term relocate U-turn	\$150,000	Near term
B5	SH 6 Pedestrian Bridge at Oyster Creek Park	Near Oyster Creek Park, 250' span + approach ramps	\$1,700,000 to \$2,500,000	Near term
B6	Enhanced Crossing at Ulrich/US 90A	Enhanced pavement crosswalk, sidepath w/ diverter fencing & pedestrian level RR warning signals	\$200,000 to \$300,000	Near term
B7	US 90A at Brooks/Main	Install crosswalks, use dashes to indicate bicycle route across the intersection	\$50,000	Near term
B8	SH 6 at Town Center Blvd.	Replace crosswalks and ramps, widen median refuge, relocate crosswalk signal location in median	\$50,000	Near term
B9	SH 6 at Lexington	Replace crosswalks and ramps; increase size of waiting space at each corner, relocate crosswalk signal location in median, install wider median refuge	\$50,000	Near term
B10	SH 6 at Fluor Daniel	Reduce curve radii to reduce ped/bike crossing distance, replace crosswalks and ramps, increase size of waiting space, relocate crosswalk signal location in the median, install signage, adjust median size and signal timing	\$50,000	Near term



TABLE 6.6 PRIORITY ENHANCEMENTS TO RESOLVE BARRIERS

#	Facility Location	Recommended Improvements	Projected Cost Range +/-	Priority
B11	Williams Trace at US 59 (west side)	Widen pedestrian zone on SB side of Williams Trace under bridge, add paver walkways, enhanced lighting, ramp widening	\$150,000 to \$200,000	Near to mid term
B12	Dairy Ashford at US 59 (west side)	Widen pedestrian zone on SB side of Dairy Ashford under bridge, add paver walkways, enhanced lighting, ramp widening	\$150,000 to \$200,000	Near to mid term
B13	Pedestrian Bridge over Brazos River at US 59	At US 59 – span length approximately 800 to 900' +/- assumes use of US 59 bridge as supports for pedestrian bridge, include minor U-turn area improvements	Option A - \$3,000,000 to \$4,500,000	Near to mid term
B14	SH 6 at Williams Trace	Extend median to create refuge, replace ramps and increase size of landing area at each corner	\$50,000	Near to mid term
B15	SH 6 at Kensington	Install dashed bicycle lane chevrons, relocate crosswalk to allow for median refuge, replace crosswalks and ramps, increase size of waiting space, adjust push button locations	\$50,000	Near to mid term
B16	US 90A at University Blvd.	Use smaller corner radii to reduce the pedestrian crossing distance, include median refuge with push button actuators, include crosswalks, include ten foot (10') wide paved crossing over the existing railroad tracks.	New road/ intersection construction	Near to mid term
B17	US 90A at Dairy Ashford	Complete sidewalk connections, replace crosswalks and ramps	\$50,000	Mid term
B18	US 90A at Gillingham	Widen pavement to accommodate bicycle lanes	\$50,000	Mid term
B19	SH 6 at University Blvd.	Adjust location of south/east U-turn to create wider pedestrian zone, install decorative pavement, replace existing crosswalks and ramps, increase size of waiting area	\$50,000 to \$200,000	Mid term
Projected Cost Range			\$6,350,000 to \$9,250,000	



3. Policy and Operational Considerations

To further the implementation of pedestrian and bicycle facilities, the following policy actions are recommended.

Policy Recommendation 1: Modify the Development Code and/or Design Standards

- Adjust the City's required minimum width for sidewalks to a minimum width of six feet (6') along key neighborhood roads that provide access to schools, area parks or other key area destinations. Along all major streets in the City classified as a minor arterial or above, require that new sidewalk construction be at least six feet (6') in width; however, residential neighborhood streets can remain at the current requirement of five feet (5') minimum;
- Require that new developments provide sidewalks along all freeway frontage roads;
- Where sidepaths are indicated in this Plan, require a minimum ten feet (10') wide sidepath in the future, with eight feet (8') width allowed for short lengths or to get around constrained areas;
- In new communities, require the construction of shared use paths that conform to this Plan. Generally, construction shall be at the developer's expense whenever reasonably proportionate. Other pathways beyond those shown in this Plan may also be installed if the developer chooses but at his or her cost and only if the base trails shown in this Plan are also included;
- Around proposed amenity areas, even if developed as part of planned development, allow no walkway near an amenity such as a lake or in a park that is narrower than six feet (6') in width;
- In higher density areas of the City, consider encouraging the inclusion of on-street parking to help create a more pedestrian friendly environment;
- As discussed in Chapter 4 to encourage more trips by bicycle, require that new development provide bicycle parking, and that modifications above a certain dollar or percentage level trigger the need for adding bicycle parking;
- Update the Development Code to require a pedestrian/bike route from public walkways to the front door of buildings; and
- Require Traffic Impact Analysis (TIAs) to incorporate an assessment of pedestrian and bicycle needs.

Policy Recommendation 2: Sidewalk rehabilitation program - Adopt a policy of replacing the existing deteriorated sidewalk with the preferred width as described in Recommendation 1 above. Where practical, widen the entire sidewalk segment to its next logical stopping and starting point, so that an entire segment is widened to its preferred final width. If the condition of the area to be replaced is generally good and whole sale replacement is not practical, spot repairs may be used until larger segments are replaced with the wider sidewalk. The Public Works Department should incorporate these approaches into their planning and funding processes. The future widening of existing facilities may be incorporated into street reconstruction or utility projects, where appropriate.



Operational Considerations

Operations Recommendation 1: Maintenance of on-street bicycle lanes - On a day-to-day basis, debris accumulates in bicycle lanes since they are not used by faster moving cars and trucks that move debris and dirt buildup. A commitment to more frequent sweeping of bicycle lanes is needed to keep them free from debris, stones and gravel that can impede the use of the lane. Currently, the City contracts out street sweeping; however the City could buy a small sweeper in the future which could be used to keep bicycle lanes clear, especially as a greater number of lane miles are implemented.

Operations Recommendation 2: Trash bins in bicycle lanes - The City of Sugar Land should work with its citizens and its waste pickup provider to avoid the placement of trash bins in bicycle lanes. Current policies do allow the bins to be placed outside the street pavement and behind the adjacent curb. However, prior information campaigns encouraged placement of bins in the street for the sake of simplicity. An informational campaign should be implemented to let residents know where to place the bins as new bicycle lanes are installed. On streets with bicycle lanes, the best location for trash bins is on the planting strip between the curb and sidewalk, not in the street which impedes bicycle traffic.

Operations Recommendation 3: Staffing for promotion and encouragement efforts - As discussed in Chapter 5, educational, promotional and encouragement efforts are a key part of increasing walking and riding habits in any city. Cities that have had high mode shift levels have often invested not only in infrastructure but have also allocated staff to get the word out about their system.

Initially, these efforts can probably be shared by current Sugar Land staff from various departments. However, they may require up to 1/2 of a full time equivalent (FTE) staff member, and over time may increase to the point where a bicycle/trail coordinator is needed to coordinate promotional and educational efforts and manage the City's growing pathway and on-street bicycle system.

TABLE 6.7 POLICY AND OPERATIONS RECOMMENDATIONS

#	Recommendations	Potential Cost	Priority
P1	Modify Development Code or Development Standards as needed	By existing staff	Immediate
P2	Adopt a policy for replacing existing deteriorated sidewalks (during annual sidewalk rehab program) with preferred width specified in this Plan	By existing staff	Immediate
O1	Maintenance of on-street bicycle lanes	By existing staff	Immediate, ongoing
O2	Address trash bins in bicycle lanes	By existing staff	Immediate
O3	Hire staffing person for promotion and encouragement efforts	\$35,000 to \$50,000 +/- per year	Near term



4. Partnering with Homeowner Associations to Develop or Maintain Shared Use Paths

Several key areas of the City of Sugar Land have trails that were built and are maintained by a homeowners association (HOA). In fact, most of the existing trails in Sugar Land are HOA trails. Where HOA trail segments are a key connection within the overall citywide network of pedestrian and bicycle facilities, the City should attempt to incorporate these trails into the public citywide network. Where the HOA agrees to allow public access, the City should add trail signs and unified branding elements that allow residents to know that this is a publicly accessible trail that is part of the overall shared use path system.

The following are recommendations regarding partnerships with HOAs.

HOA Recommendation 1: Adopt policies that guide where the City should take over the maintenance of HOA-built paths - Over 38 miles of HOA shared use paths and sidepaths exist in Sugar Land today, and more may be developed as the Riverstone and Imperial developments build out. To ensure a consistent high-quality network and public accessibility citywide, Sugar Land should develop agreements to incorporate some association built paths into the City's public pathway network. Some principles to consider in developing these agreements are as follows:

- Only shared use paths that provide connections between multiple neighborhoods or developments should be considered for City acquisition;
- For trails that require a significant amount of immediate renovation, the City may choose to require that the HOA provide assistance towards those repairs;
- The City should approach HOAs with the offer to accept operations and maintenance in return for City ownership and public use. The City should only take over maintenance of the path itself. Mowing of adjacent turf and landscape maintenance should continue to be the responsibility of the entity that is currently maintaining it. The decision to take over maintenance of a shared use path corridor should be conducted on a case by case basis; and

HOA Recommendation 2: Seek partnerships - Seek partnerships to accelerate construction of some trails by soliciting matching funds from HOAs. However, limit these partnerships to trails that benefit the citywide network by connecting multiple neighborhoods.



5. Funding Strategies

Funding availability is a major determinant for timing the implementation of this Plan. Funding strategies may vary based on the type of facility being proposed. Recommendations for funding are as follows:

A. General obligation bond funds - For major shared use path projects, such as high priority trails along Ditch A in the First Colony area and Ditch H in the Memorial Park/Telfair area, long-term general obligation bonds should be considered.

B. CIP funds - An annual set-aside in the City's pay-as-you-go Capital Improvement Program (CIP) could be used to fund the pedestrian/bicycle network. These funds could also be leveraged as a match for state and federal grants if those become available.

C. Partnerships with Homeowner Associations (HOAs) - As discussed in this Chapter, the City should proactively discuss partnerships with HOAs to co-fund the development of facilities in their areas.

D. Partnerships with Municipal Utility Districts (MUDs) or Levee Improvement Districts (LIDs) - Some area MUDs or LIDs may have the ability to use portions of their tax revenue to build recreation and transportation features such as shared use paths. Where feasible, those funds could be used to help supplement City funding.

E. Private residential or commercial development or redevelopment - Some path segments noted in this Plan are located within residential communities, adjacent to existing commercial or business areas, or in greenfield areas. As such, trail segments associated with both redevelopment or new development can be partially or entirely built by the private development community.

F. Grants from a variety of sources - Grants that can be used for trail development are available from a variety of sources such as those listed below. CIP funds can provide a match for grant applications. Grants should be pursued only when the benefits of grant funds outweigh the drawbacks such as project delays. These delays result from grant requirements such as additional design reviews, agreements, and environmental clearances.

Major grant types include:

- **Texas Parks and Wildlife Department grants** - Through its outdoor recreation and community trail development grants, these matching grants are relatively small but could provide from \$50,000 to \$500,000 in grant assistance.
- **Federal Transportation Enhancement funds** - Federal transportation dollars specifically allocated to pay for transportation enhancements have led to the creation of hundreds of miles of shared use paths throughout Texas over the past ten years, and were the primary funding source for trail development in the State of Texas. Under the new MAP 21 LEGISLATION (as part of the Transportation Alternatives Program), allocations for pathways may be more successful if requested as components of larger projects. However, Sugar Land should continue to evaluate the availability of these funds and consider applying for them. For larger projects, consider taking them to a "shovel ready" point to make them more attractive funding candidates.



- **Congestion Mitigation and Air Quality (CMAQ) grant funds** - Federal dollars that assist in relieving traffic mitigation may also be used to develop trail corridors that can carry commuters to work or serve as an alternative transportation route to recreation or commercial areas. These are typically allocated by the Houston-Galveston Area Council.

The projected cost to develop all of the high-priority facilities is shown in Table 6.8. Funding sources for a significant portion of the high-priority items have been identified. Those include federal grant funding, potential bond funding, and the construction of certain key segments as part of ongoing developments. The potential range of available funding and projected additional funding needs are shown in Table 6.9.

TABLE 6.8 PROJECTED PLAN COSTS FOR HIGH PRIORITY RECOMMENDATIONS (YEARS 1-10)		
Facility	Length	Projected Cost Range
Sidepaths	20.5 miles +/-	\$13,500,000 to \$16,000,000
Shared Use Paths (Trails)	14 miles +/-	\$14,000,000 to \$15,000,000
Bicycle Lanes	11 miles +/-	\$500,000 to \$550,000
Buffered Bike Lanes (includes one cycle track)	8 miles +/-	\$750,000 to \$850,000
Shared Lane Markings	14 miles +/-	\$250,000 to \$325,000
Sidewalks	4.5 miles +/-	\$950,000 to \$1,050,000
Barrier Reduction Items	N/A	\$6,350,000 to \$9,250,000
Encouragement Programs (annual)	N/A	\$25,000 to \$75,000
Total		\$36,000,000 +/- to \$43,000,000+/-

TABLE 6.9 IDENTIFIED FUNDING SOURCES FOR IMPLEMENTATION	
Total Potential Cost	\$36 – 43 Million +/-
Potential Funding Sources (Years 1 – 5)	
Federal Grant Funding	\$2 Million +/-
2013 Bond Funding (if approved)	\$10 Million +/-
Segments funded by Development	\$4 Million +/-
Funding Gap	\$20 – 27 Million +/-



6. Implementation Process and Department Roles

Implementation Process

The process for implementing the recommendations of this Plan is as follows:

1. Confirm that area characteristics, such as average daily traffic counts where bike lanes are proposed, are similar to those encountered during the master planning process;
2. Update project costs based on current costs and conditions, and confirm scope of the segment;
3. Determine if a Preliminary Engineering Report (PER) is needed to confirm costs and provide specific details for the corridor (note that a PER for significant bicycle and pedestrian projects may be valuable to respond to funding opportunities as they occur);
4. Identify the funding source(s) for the segment(s);
5. On projects with a significant effect on area projects, determine if additional citizen input is required, and communicate the intent of the project to area residents;
6. Prior to development, conduct “before” pedestrian and/or bicycle counts as a benchmark for the project;
7. Conduct area notification campaign to let area residents know that facility is available for usage; and
8. After development, conduct periodic counts to measure usage.

Implementation Roles

The City is the primary implementing agency of this Plan. By adopting this Plan, the City acknowledges its role and responsibility to take the lead in pursuing the Plan’s goals and objectives. Implementation actions by the City include actual construction of bicycle and pedestrian facilities and supporting programs to educate and encourage new users.

Multiple City departments may have a role in implementing and operating the facilities envisioned in this Plan. These are shown in Table 6.10 and include the following:

- **The Transportation & Long-Range Planning Department and Parks & Recreation Department** will have major roles in implementing the Plan recommendations. Responsibilities will include developing and overseeing efforts to improve walking and bicycling, proposing pedestrian and bicycle facilities, scoping of education, encouragement and enforcement events, and coordinating among the various departments and agencies that have a role in implementing this Plan. The Parks and Recreation Department will also have a role in education and promotion programs, as well as overall implementation of this Plan;



- **The City's Public Works Department** may assist with facility development and day-to-day operations and maintenance of the City's roads, sidewalks and sidepaths, including signage and striping, where much of the on-street infrastructure may be built;
- **The Engineering Department** will lead the design and construction of bicycle infrastructure, including pavement markings, signalization, and signs;
- **The Police Department** will have a significant role in supporting and implementing safety education and enforcement components of this Plan; and
- **The Planning and Code Services Department** enforces the City's Development Code and other development-related ordinances. This Department is responsible for ensuring that infrastructure built through private development conforms to the City's codes. The Department may also update the City's codes to establish new standards for sidewalk width and placement as well as compliance of Planned Development Districts (PDs) with projects in this Plan.

TABLE 6.10 DEPARTMENT ROLES TO IMPLEMENT PEDESTRIAN & BICYCLE MASTER PLAN

Department	Department Role
Sugar Land Parks & Recreation Dept.	On-street to off-street connections; off-street trails; wayfinding; education and encouragement
Sugar Land Public Works Dept.	Integrate bicycle infrastructure with regular street maintenance schedule; on-street to off-street connections; wayfinding
Sugar Land Engineering Dept.	Integrate bicycle facility design standards into manuals and standards developed by the City; integrate pedestrian and bicycle facility design standards into development code
Sugar Land Town Center Operations	Implementing walking and bicycling facilities and programs in the Town Center area
Sugar Land Planning & Code Services Dept.	Revise codes and ordinances, conduct development reviews for pedestrian and bicycle facilities
Sugar Land Police Dept.	Education and enforcement programs



7. Interagency Partnerships

The City of Sugar Land will need to partner with other entities (such as TxDOT, Fort Bend County, H-GAC, and other surrounding municipalities) in order to implement the Plan. Interdepartmental and interagency collaborations are a critical component of developing a regional network of pedestrian and bicycle facilities. Moreover, state and federal funding opportunities reward cooperation among local and regional entities. Potential partnership opportunities are shown in Table 6.11.

TxDOT, Fort Bend County, and other municipalities

In order to create a truly connected and regional network with seamless linkages to and from destinations, Sugar Land must look beyond local boundaries.

- **TxDOT** operates and maintains state and federal highways such as US 59, SH 6, US 90A and other highways. These roads also tend to be the biggest physical barriers to a connected network. TxDOT will have an important role in helping the City of Sugar Land overcome these barriers and making these roadway corridors accessible to pedestrians and bicyclists on a safe and appropriate facility.

TABLE 6.11 PARTNERSHIP OPPORTUNITIES TO IMPLEMENT THE PEDESTRIAN & BICYCLE MASTER PLAN

Department, Agency, Organization	Partnership Opportunity
Texas Department of Transportation (TxDOT)	Implementing pedestrian and bicycle facilities on TxDOT roads and bridges; Safe Routes to School program; Transportation Enhancement grants
Fort Bend County	Implementing pedestrian and bicycle facilities on Fort Bend County roads and bridges; opportunities to develop trails through flood control programs; coordination with Park and Ride Stations
Fort Bend ISD	Safe Routes to School program; education and encouragement programs targeting school-aged children
University of Houston-Sugar Land	Education and encouragement programs targeting college and university students; implementing pedestrian and bicycle facilities with direct access to and on campus
Local bicycle shops	Education and encouragement programs; bicycle tourism, map distribution
Bike Texas and other advocacy groups	Education and encouragement programs; policy guidance for bicycling
Levee and utility districts	Public easements to construct off-street trails (along levees only at the toe of the levee/outside edge of the ditch)
H-GAC	Funding opportunities (RTP/TIP); bike counters; creation of a regional bikeway plan; pilot projects such as Houston's map app
Private developers	Construction of facilities that meet the standards set in this Plan
Chamber of Commerce	Encourage and record business who provide end of trip facilities or incentives for their employees to walk or bike to work



- **Fort Bend County** operates and maintains roads in unincorporated areas of Sugar Land's ETJ.
- **Adjacent municipalities** have the opportunity to work with Sugar Land to develop connecting and continuous pedestrian and bicycle facilities across jurisdictional boundaries.

Utilities, Municipal Utility Districts (MUDs) and Levee Improvement Districts (LIDs)

Another opportunity for off-street corridors are along utility rights of way and levee easements. Agreements are required to allow the use or crossing of these corridors for shared use paths. State legislation that may reduce the liability of utilities and special districts may help encourage these entities to participate in shared use path development. In fact, Harris County and Centerpoint successfully negotiated terms for legislation regarding the use of powerline easements for trails. This legislation (HB 200¹) would serve as an example for the City of Sugar Land if the City decided to pursue this in the next legislative session.

Private advocacy and recreational groups

Private citizens have a role in implementing this Plan by participating in public meetings as recommended projects are introduced and designs for specific infrastructure are developed. The pedestrian and bicycling community should provide feedback on the results from implementing recommendations of this Plan via e-mail or other types of verbal communication to City staff. Fitness and wellness groups, such as Shape Up Sugar Land, can help with advocacy, education and promotion when implementing pedestrian and bicycle facilities.

8. Monitoring Implementation

The Sugar Land Pedestrian and Bicycle Master Plan is a living document and should be updated periodically to assess progress, identify new opportunities, and re-evaluate goals and priorities. The citizens of Sugar Land have expressed interest and support for an accelerated implementation of the priority actions of this Plan. To account to the residents of the City, an annual review of implementation successes over the preceding year should be conducted as part of the "Master Plan Annual Report" that is present to City Council. In addition, an action plan for the following year should also be developed and proposed for inclusion in the annual Capital Improvements Program (CIP).

As the City moves forward in building the network and implementing this Plan, it is important to continue to involve homeowner associations, area stakeholders, and residents or businesses located along any proposed routes. Public engagement and input is a critical component of any design process involving new pedestrian and bicycle facilities, and is also vital when updating, changing or re-prioritizing any recommendations. The City should meet with area residents during any PER process.

The City should initiate and maintain an annually updated Capital Improvement Project (CIP) list of short- and long-term bicycle and pedestrian facility improvements

¹ <http://www.capitol.state.tx.us/tlodocs/83R/billtext/pdf/HB00200F.pdf#navpanes=0>



based on this Plan. This CIP should be annually updated to reflect the highest priority projects for each fiscal year into the future.

To measure the successful implementation of the recommendations of this Plan, a series of benchmarks and periodic measures are indicated on the following page. These were selected to reflect the fact that Sugar Land is just beginning to build a citywide network. They include:

- User counts along key segments both before implementation and after to track changes;
- Identify key locations for benchmark counts and conduct on a periodic basis;
- Review periodic American Community Survey data provided by the US Census on commuting mode share;
- Quantifying the percentage of the system that is developed;
- Quantifying education and encouragement efforts by counting the distribution of route maps, the number of classes and participants enrolled in safety programs, etc.; and
- Quantifying end trip facilities provided at businesses and destinations within the City.

As the City's network grows and additional facilities are installed, other measures may be added that further gauge the success of Sugar Land's bicycling and pedestrian efforts. If the City so desires, this information could be provided on the City's website so that citizens can track the progress of the Plan.



TABLE 6.12 PEDESTRIAN AND BICYCLE MASTER PLAN BENCHMARKS

Benchmark #	Benchmark Description (and potential partners)	Baseline Measurement	Benchmark Target	Data Collection Frequency
1	Percentage of High Priority Network Completed by length and by dollar investment (City of Sugar Land)	Length of Existing Network	5 to 10% completed annually	Annual Review
2	Percentage of Barriers resolved (City of Sugar Land)	11 key barriers	Address one high priority barrier annually	Annual Review
3	Track mode share of bicycle commuters in the City (US Census, employer survey)	2010 Census 0.2%	Increase to 0.5% by 2018 (within 5 years), 1.0% by 2023	Per US Census, American Community Survey
4	Track observed bicyclists in the City - both transportation and recreation (City of Sugar Land, volunteer advocates)	Conduct baseline counts in 2014	Double total number of observed bicyclists within five years	Biannually at select target locations (to be determined)
5	Measure number of students walking or riding to school (school principals, school districts)	Conduct baseline counts in 2014	Demonstrate annual increase in the number of students riding to school on a campus by campus basis	Annually, with area school administration assistance
6	Co-commuting with transit and park and ride (Fort Bend County Public Transit)	Conduct baseline counts in 2014	Annual increase by 25 to 50% in observed number of park and ride and transit commuters using bicycles	Annually
7	Track bicycling to key destinations - Town Square, Constellation Field, Park and Recreation Center (City of Sugar Land, facility managers)	Conduct baseline counts in 2014	Increase in observed number of observed users (at bike racks) by 25 to 50% annually	
8	Track installation of bicycle and pedestrian facilities in new development (City of Sugar Land)	Applications with pedestrian/bicycle components	Track installation as developments are permitted and completed	Conduct quarterly coordination with other departments
9	Increase the availability of bicycle parking (City of Sugar Land, Chamber of Commerce)	Conduct detailed count in 2014	Increase number of bicycle racks (total parking slots) by 50 to 100% every three years	Track installation via permits or annual counts
10	Adult bicycle training (City of Sugar Land, League of American Bicyclists, area advocates)	Attendance at initial year offered in Sugar Land	Double number of annual participants within five years	Annually
11	School aged youth bicycle training (area school districts, area advocates)	Number per year once initiated	Conduct classes for all youth at target grade on an annual basis within five years	Annually
12	Develop and distribute 1,000 bicycle route maps, both printed and electronic within one year (City of Sugar Land, bike shops)	Initial printing of 1,000 maps	Distribute within 1 calendar year	Distribute 1,000 per year
13	Attain League of American Bicyclists Bicycle Friendly Community Status within three years (City of Sugar Land)	N/A	Bronze level within three years, Silver or gold level within ten years	N/A
14	Increase the number of business providing end trip or employee ride to work incentives (City of Sugar Land, Chamber of Commerce)	Initial count by Chamber of Commerce in 2014	Increase total number of businesses by 10 to 20% annually	Annual count