



CITY OF DENHAM SPRINGS BICYCLE AND PEDESTRIAN MASTER PLAN

FINAL REPORT

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Louisiana Department of Transportation and Development
1201 Capitol Access Road
Baton Rouge, LA 70802

Prepared by



Gresham Smith
10000 Perkins Rowe, Suite 280
Baton Rouge, LA 70810

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1.0 INTRODUCTION

1.1 Project Purpose, History, and Context

The purpose of the Denham Springs Bicycle and Pedestrian Master Plan is to define a clear vision for walking and bicycling in Denham Springs and transform the city into a place where people of all ages and abilities will have access to safe, comfortable and convenient walking and biking routes, resulting in true mobility choice, improved economic opportunity, and healthier lifestyles. Building on the analysis of existing conditions and trends, this report summarizes the project, program, and policy recommendations for walking and bicycling in Denham Springs.

Context of Denham Springs in the Capital Region

As shown in Figure 1-1, Denham Springs is located on the western edge of Livingston Parish, approximately 14 miles to the east of downtown Baton Rouge. The U.S. Census Bureau estimated the city's population at just over 10,000 residents in 2017. The city is strategically located at the western edge of the rapidly-growing Livingston Parish, providing residents easy access to the City of Baton Rouge. As Denham Springs continues to grow as both an employment center and a bedroom community in the Capital Region, offering meaningful transportation choices to residents and visitors will provide the city with a competitive edge for attracting new residents and jobs.

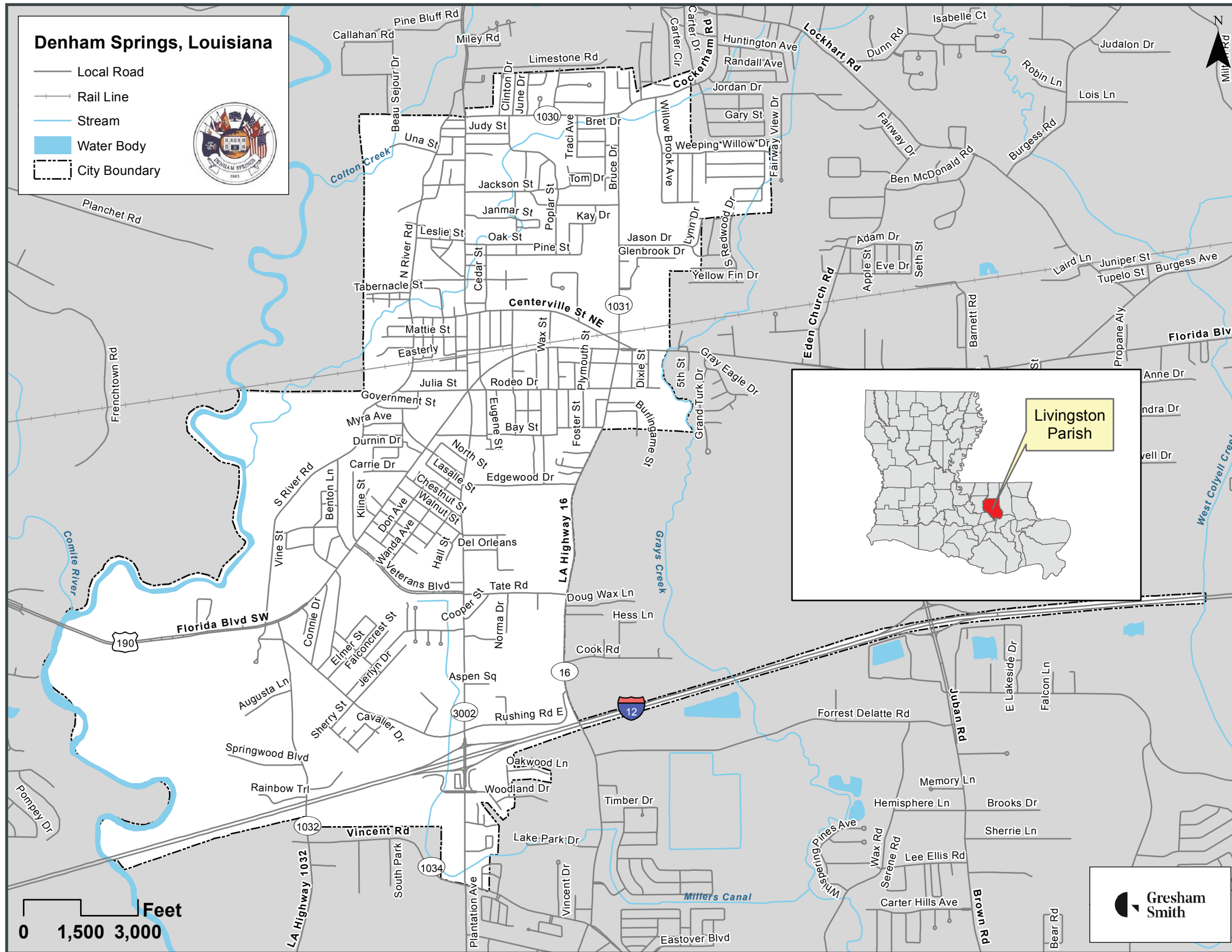
Project Purpose, History, and Relationship to the Recovery Plan

In August 2016, the City of Denham Springs suffered a devastating flood event. Nearly three quarters of the city's residential structures – a significant portion of the tax base – were directly affected by the flood. Many homes were destroyed outright. In the wake of this tragic event, the community undertook the Community Recovery Strategic Plan, *Denham Strong*, to identify projects and strategies for flood recovery, disaster resilience, and community development, all informed by the community's vision of the future: "Denham Springs is a family-focused, well connected, clean, safe, active and resilient community."

During the preparation of the Community Recovery Strategic Plan, residents identified projects and strategies that generated a great deal of community support. As part of the Community Development suite of solutions, "Improve Street Safety and Mobility" emerged as the highest priority project of the eight identified in the Community Development category. Specifically, the project description states: "Develop a plan to increase road safety for people traveling by car, foot or bike." The Denham Springs Bicycle and Pedestrian Master Plan is one of five action steps identified in service of the larger project. The City of Denham Springs, in partnership with the Capital Region Planning Commission (CRPC), developed the plan to satisfy this high priority initiative as the city continues to recover.



FIGURE 1-1. PROJECT LOCATION



1.2 Public and Stakeholder Involvement

The Denham Springs Bicycle and Pedestrian Master Plan was developed in close coordination with key stakeholders and members of the general public. A technical advisory committee – consisting of representatives from the City of Denham Springs, the CRPC, the Federal Highway Administration (FHWA), the Louisiana State University (LSU) Coastal Sustainability Studio, Livingston Parish Public Schools, and local neighborhoods – was convened at key project milestones to review the progress of the plan’s development and provide guidance on draft work products and future milestones.

Two rounds of public workshops were held to solicit feedback from the residents of Denham Springs. The first workshop, held on March 19, 2019, focused on the project’s goals and objectives (discussed at greater length in the next section) and issues and opportunities for walking and bicycling in Denham Springs. An online interactive map, hosted on the Wikimapping platform, was made available for several weeks following the first public workshop. The online map asked attendees to identify preferred types and locations of various bicycle and pedestrian facilities as well as key origins and destinations that should be connected by the recommended network. Thirty-two attendees signed in at the first public workshop, and the online interactive map was visited by approximately 30 unique users.

In a visual preference survey, attendees expressed a general preference for dedicated facilities that provide a higher level of comfort for users of all ages and abilities, such as shared-use paths, paved shoulders, and facilities for walking and jogging.

Table 1-1 and Figure 1-2 summarize key feedback received in the preliminary round of public outreach.

A second public workshop was held on August 6, 2019. Attendees were presented with preliminary drafts of the bicycle and pedestrian network plans, which were developed using feedback from the first round of outreach, and asked to provide feedback on the draft recommendations. The comments from the second workshop were incorporated into the draft recommendations identified in this report.

TABLE 1-1. PREFERRED IMPROVEMENTS

Category	Improvement	Total	% of Category
Walking	Shared-Use Paths	14	41
	Walking/Jogging Trails	11	32
	Crosswalks	4	12
	Sidewalks	1	3
	Crossing Islands	1	3
	Pedestrian Signals	1	3
	Lighting & Street Trees	1	3
	Advisory Shoulders	1	3
Bicycling	Paved Shoulders	10	50
	Bike Lanes	4	20
	Separated Bike Lanes	2	10
	Shared Lanes	1	5
	Buffered Bike Lanes	1	5
	Sidepaths	1	5
	Bike Sharing	1	5
	Bike Parking	1	5
Programs	Safety Education	7	54
	Festivals & Open Streets	4	31
	Enforcement	2	15
	Marketing	0	0

1.3 Goals and Objectives

Based on input received at the first public workshop – as well as guidance from the technical advisory committee – the following goals and objectives were identified to guide the development of the bicycle and pedestrian network.

Goal 1

Increase access to bicycle and pedestrian facilities for all residents

Objective 1.1 Improve bicycle and pedestrian conditions in areas of highest demand for walking and bicycling

Objective 1.2 Develop neighborhood bicycle and pedestrian routes that provide alternatives to state highways

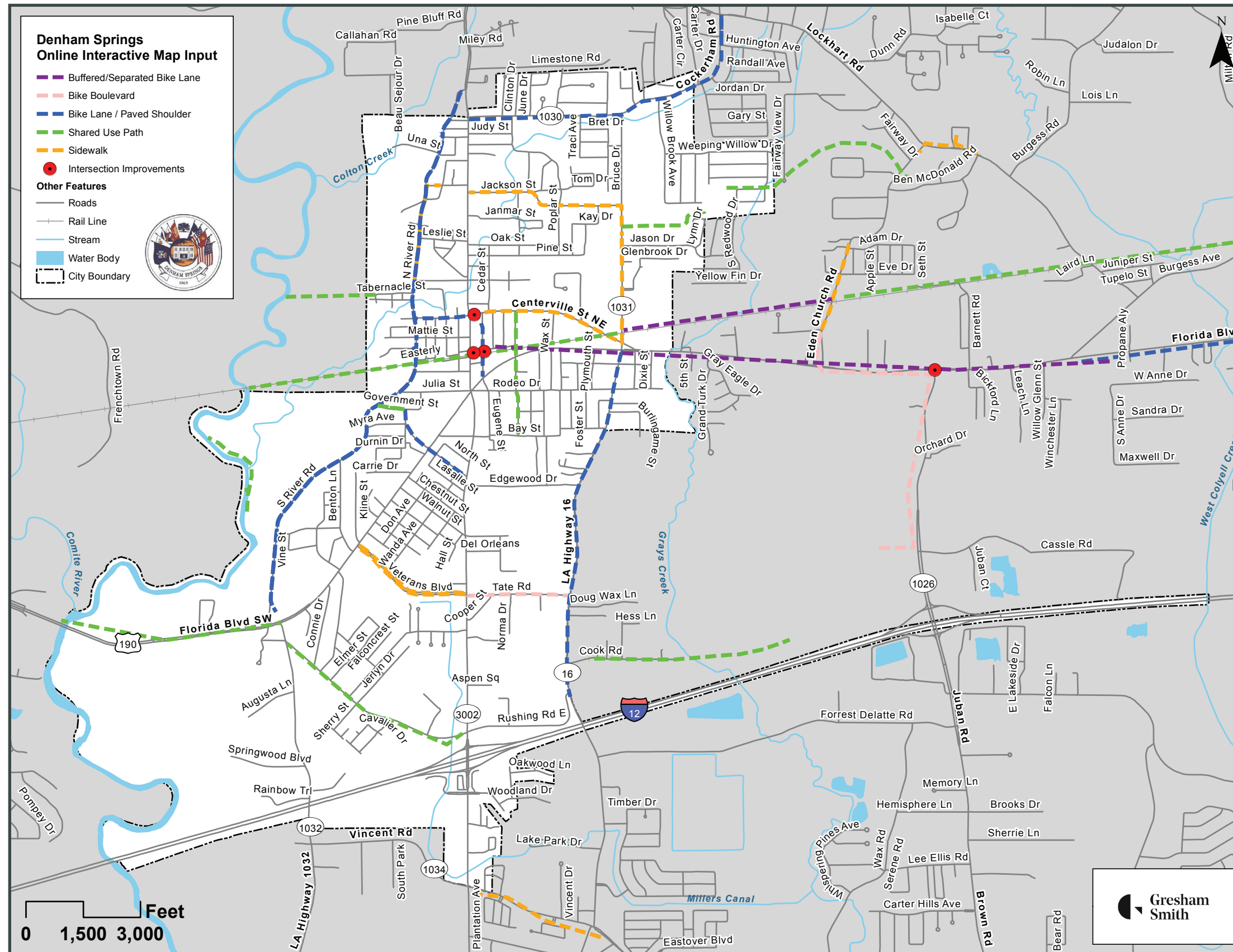
Goal 2

Improve safety for bicyclists and pedestrians

Objective 2.1 Prioritize improvements and programs with the greatest potential to reduce bicycle and pedestrian crashes, injuries, and fatalities

Objective 2.2 Collaborate with state and local law enforcement officials on improving safety enforcement and bicycle and pedestrian crash reporting

FIGURE 1-2. PUBLIC INPUT (INTERACTIVE MAP)



Objective 2.3 Improve health outcomes in Denham Springs through the deployment of high-quality, accessible bicycle and pedestrian facilities

Objective 2.4 Build upon the existing partnership between the City of Denham Springs and the Capital Region Safety Coalition

Goal 3

Promote economic development and livability through the expansion of bicycle and pedestrian infrastructure and the deployment of policies and programs that encourage active transportation

Objective 3.1 Target bicycle and pedestrian improvements in major commercial centers and corridors, including tourism areas

Objective 3.2 Ensure bicycle and pedestrian options are available between residential areas, employment centers and schools

Objective 3.3 Adopt model bicycle and pedestrian design standards and ordinances for local streets and local development practices

Objective 3.4 Expand and improve bicycle and pedestrian networks to and from natural and scenic areas

Objective 3.5 Identify and evaluate existing utility corridors, easements, and green infrastructure improvements for new or improved bicycle and pedestrian facilities

Goal 4

Improve or expand programs that promote education and awareness for bicyclists, pedestrians, and motorists

Objective 4.1 Develop educational materials and public information campaigns on safe walking, biking, and driving

Objective 4.2 Support community bicycle and pedestrian programs and events, and develop bicycle and pedestrian maps and web-based information resources

Objective 4.3 Draft and implement a Complete Streets policy

Goal 5

Ensure that new facilities complement other existing and planned transportation improvements

Objective 5.1 Improve connections between existing and planned bicycle and pedestrian facilities and local trails, including those in neighboring jurisdictions

Goal 6

Evaluate the impact of both infrastructure and non-infrastructure projects, programs, and strategies

Objective 6.1 Conduct bicycle and pedestrian counts at key attractions and activity centers

Objective 6.2 Engage the public and key stakeholders to gather insight on project and program effectiveness

Objective 6.3 Establish long-term goal(s) for bicycle and pedestrian culture in the city as recommendations are implemented

1.4 Existing Conditions Analysis

An existing conditions analysis, focused on key issues and opportunities related to walking and bicycling, was conducted to complement the feedback received from the public and stakeholders. Topics of interest included existing plans, policies, and studies; demographic, land use, and environmental conditions; and transportation system conditions. Key findings from the analysis are included below. The entire technical memorandum is included as a standalone appendix.

Existing Plans, Policies, and Studies

- The Community Recovery Strategic Plan identified public support for a bicycle and pedestrian plan that increases safety for users by making connections between residential and commercial areas and developing safe crossings, particularly on the two major thoroughfares in the city, Florida Boulevard and Range Avenue.
- Commercial growth will continue on developable land in existing commercial centers, with additional intense commercial development planned immediately east of the city.
- Four nonmotorized transportation projects were identified by the public and stakeholders as part of the MOVE2042 Long Range Transportation Plan:
 - Range Avenue at Cockerham Road to I-12;
 - Pete's Highway at Hatchell Lane to Cockerham Road;
 - River Road at Range Avenue to Florida Boulevard; and
 - Florida Boulevard to Juban Road.

Five programmed projects are identified in the Transportation Improvements Program for Denham Springs. These will be examined against plan recommendations with respect to project implementation.

The Louisiana Department of Transportation and Development (LaDOTD) has placed an increased emphasis on nonmotorized facilities on state-owned highways.

The Long-Range Bicycle Map- Statewide, a tool developed by LaDOTD, identifies user potential and facility type recommendations on all state-owned highways.

Demographic, Land Use, and Environmental Conditions

- Livingston Parish has experienced substantial population growth in recent years and is projected for strong growth in the future. Much of this growth will occur outside of Denham Springs but will likely place additional stress on the city's transportation network.
- Low-income and minority populations have grown in Denham Springs since 2000, with notable concentrations of each within certain geographic areas of the city.
- Elderly and disabled populations have largely decreased as a share of total population in recent years.
- The number of households with no vehicles present has nearly doubled since 2000. These households' locations track closely with concentrations of low-income residents.
- In 2015, approximately one-third of adults in Livingston Parish were obese and reported no leisure time physical activity. While these percentages track closely with the Louisiana statewide average, they exceed the national average.

- Commercial land uses, identified as key destinations in the Community Recovery Plan, are largely concentrated along Florida Boulevard and Range Avenue, in addition to the newer commercial development south of I-12.
- Wetland features associated with the Amite River will need to be considered as recommendations are developed.

Transportation System Conditions

- Major thoroughfares in the city carry substantial amounts of traffic. These volumes, in addition to posted speed in excess of 40 miles per hour, create inherently unsafe conditions for nonmotorized users, particularly in areas with an absence of facilities.
- Bicycle and pedestrian crashes between 2013 and 2017 were largely located at or near intersections on these high-volume, high-speed roads, indicating a need for improved crossings to enhance actual and perceived safety for nonmotorized users.
- Motorist behavior was identified as the primary contributing factor for all bicycle and pedestrian crashes between 2013 and 2017.
- No dedicated bicycle facilities and few sidewalks currently exist in Denham Springs. Sidewalks are dispersed throughout the city; no contiguous citywide pedestrian network is currently available for users.
- No bicycle facilities are currently planned for the city formally, though LaDOTD has identified potential facility types for roads within its jurisdiction.
- Sidewalks are currently the only existing bicycle or pedestrian facilities within Denham Springs, largely located along residential streets.
- According to the Strava data, existing bicycle use within the city is largely random and likely attributable to a few users.

1.5 Bicycle and Pedestrian Demand Analysis

To better understand the existing potential of walking and bicycling in Denham Springs, a bicycle and pedestrian demand analysis was conducted as part of the existing conditions analysis. The analysis was location-based, focusing on where residents live, work, play, shop, and learn. These locations, regardless of the presence or absence of bicycle and pedestrian facilities, are natural origins and destinations for existing users, or those who would consider walking or bicycling if safe, comfortable, and accessible facilities were present. The specific inputs for the analysis included:

- Population density;
- Employment density;
- Existing parks and recreational facilities;
- Retail, arts, recreation, accommodations, and food services employment; and
- Existing schools.

As shown in Figure 1-3, demand is highest near major commercial centers, including development along Range Avenue and south of I-12, near school campuses, and in the relatively dense residential development in the northern part of the city. This pattern of demand suggests that strong north-south connections are needed along or parallel to Range Avenue to connect key origins and destinations.



1.6 Planning Approach

Bicycle and pedestrian planning has traditionally focused more on the needs of existing users, such as recreational cyclists and bicycle commuters, and often resulted in higher-stress facilities along major transportation corridors that may have included few, if any, dedicated or separated facilities. As such, while these facilities increased user satisfaction among a small group of existing, dedicated users, they did little to attract new users willing to increase their use of bicycle and pedestrian modes, but hesitant to do so out of safety and comfort concerns.

In recent years, the practice of bicycle and pedestrian facilities has evolved to emphasize facilities that are safe and accessible for users of all ages and abilities. This shift in focus places a higher emphasis on providing a combination of routes on state highways, county roads, and local streets consisting of a wider variety of facility types.

Consistent with national best practices, guidance from the technical advisory committee, and input from the general public, the Denham Springs Bicycle and Pedestrian Master Plan recommends a variety of projects, policies, programs, and strategies to make Denham Springs a safe and comfortable place to walk and bike. Table 1-2 provides a general description of the bikeway types recommended in the plan.

The master plan's design guidelines (Section 3.0) describe in greater detail the preferred dimensions of different bicycle and pedestrian facilities. Recommended modifications to local development policies and regulations that promote a more friendly environment for walking and bicycling are discussed in Section 4.0, including a discussion of adopting a Complete Streets ordinance, which was identified as a multimodal transportation goal in *Denham Strong*. Non-infrastructure programs that promote walking and bicycling awareness, identified as a key goal in public input, are discussed in Section 5.0. Finally, identifying projects for implementation and the funds necessary to underwrite the cost will be critical to the early and ongoing success of implementation efforts. Section 6.0 includes a preliminary capital improvement plan and potential funding sources the city, in cooperation with LaDOTD, CRPC, and neighboring municipalities, may pursue going forward.

FIGURE 1-3. EXISTING BICYCLE AND PEDESTRIAN DEMAND

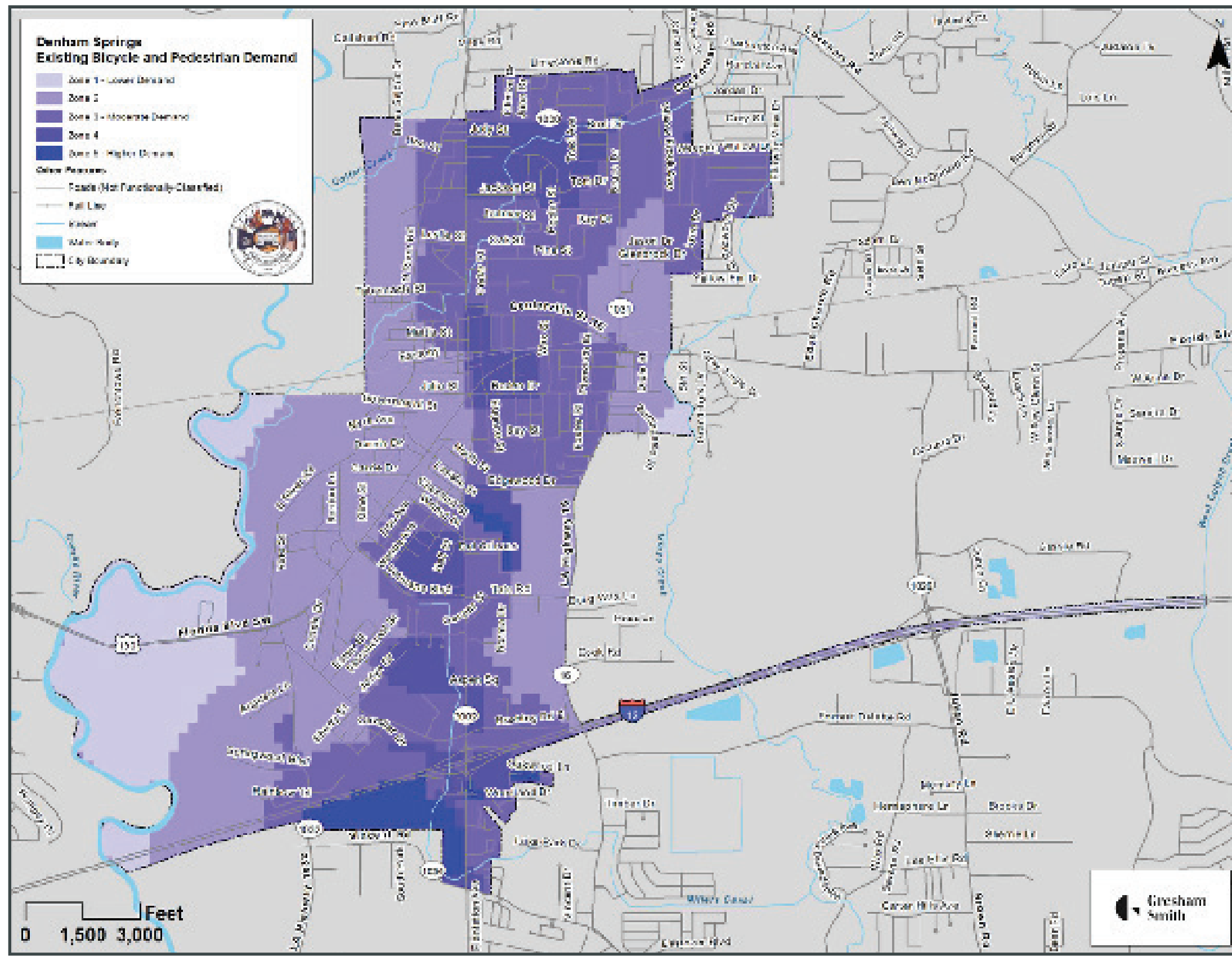


TABLE 1-2 RECOMMENDED BICYCLE FACILITY TYPES

Paved Shoulders	Paved shoulders are typical of highways and roads in rural areas, and provide important safety benefits to minimize run-off-the-road crashes, especially on higher speed (greater than 40 mph) roads. While paved shoulders are not dedicated bikeways, for bicyclists, paved shoulders provide important operating space. Adequate width (4' minimum) and bike friendly rumble strips are important design considerations.
Bike Lanes	Bike lanes provide dedicated operating space for bicyclists, and with paved shoulders, have traditionally served as the foundation for bike networks for more experienced bicyclists. While bike lanes remain a good option for urban streets with moderate traffic volumes and speeds, creating more lateral distance between bicyclists and motor vehicles either with buffers or physically separated facilities is important for people of all ages and abilities.
Bike Boulevards	Bike boulevards are lower volume, lower speed local streets that offer a safe and comfortable option for bicycling compared to major streets. Relatively low cost improvements such as shared lane pavement markings (sharrows), signage and mini-traffic circles reinforce the role of bike boulevards as safe and comfortable places to bicycle and discourage motor vehicle through traffic in neighborhoods.
Buffered Bike Lanes	Buffered bike lanes add a striped buffer space between the bicycle lane and the motor vehicle traffic lane, and where applicable, between an adjacent parking lane. Used on higher volume, higher speed streets, the buffered space effectively establishes the minimum 3 foot passing space required in many states, and additionally, provides room for bicyclists to pass each other and avoid obstacles in bike lanes including the opening of parked car doors.
Separated Bike Lanes	Separated bike lanes add a vertical element, such as plastic posts, bollards, medians or on-street parking, that physically separates bicyclists from motor vehicle traffic. Combining vertical and horizontal separation clearly delineates the designated space for bicyclists and ensures a relatively safe and comfortable facility on higher volume, higher speed streets, including multilane streets and streets with higher truck volumes.
Shared Use Paths/ Sidepaths	Unlike the various bike lane types, shared use paths and sidepaths are designed for use by both pedestrians and bicyclists. Sidepaths are located within the street or road right-of-way, while shared use paths are located within an independent right-of-way. Shared use paths/sidepaths have become increasingly popular with the growing demand for walking and bicycling, and can provide important connections for longer distance trips.

2.0 NETWORK RECOMMENDATIONS

The recommended bicycle and pedestrian networks for the City of Denham Springs were informed by the issues and opportunities identified in *Denham Strong*, public input collected over two rounds of public workshops, and the analysis of existing conditions and future needs. While all issues and opportunities were referenced during the development of the recommendations, four primary items underscored the overall approach to the development of the recommended networks:

1. Range Avenue (north-south) and Florida Boulevard (east-west) divide the city into four quadrants and act as natural barriers for movement among the quadrants;
2. Residents want connections between the neighborhoods in which they live to activity centers, such as commercial/retail destinations, parks, schools, and public services;
3. Bicycle and pedestrian facilities on lower-speed, lower-volume neighborhood streets can provide alternatives to travel on or along higher-speed, higher-volume roads; and
4. Bicycle facilities that provide some separation from traffic and a higher level of user comfort are preferred.

FIGURE 2-1. VISIONING: MLK DRIVE AND EUGENE STREET



2.1 Bicycle Recommendations

The Denham Springs bicycle network plan (Figure 2-2) combines a system of perimeter shared-use paths/sidepaths with a set of on-street bike lanes to provide a range of options for bicycling throughout the city. A third tier of bicycle facilities – bike boulevards – are deployed on low-speed, low-volume neighborhood streets to connect the shared-use paths/sidepaths to both the on-street bicycle facilities and key community destinations. Connections to Range Avenue and Florida Boulevard are made at intersections that are signalized or for which intersection improvements are recommended (these are discussed in the next section). The network will provide a high level of bicycle mobility for users of all ages and abilities, ensuring bicycle access to key commercial/retail and public activity centers. At build-out, approximately 85 percent of the city, as well as nearly all residents and visitors, will be within one-quarter mile of a bicycle facility.

Proposed shared-use paths/sidepaths, bike lanes, and buffered/separated bike lanes in the city include:

- LA-16 (Hatchell Lane/Petes Highway) – shared-use path/sidepath;
- River Road – shared-use path/sidepath;
- Cockerham Road – bike lane;
- Centerville Street – bike lane;
- Range Avenue/North Hummell Street/Bay Street – buffered/separated bike lane;
- Range Avenue (southbound through downtown) – bike lane;
- Florida Boulevard - buffered/separated bike lane;
- Veterans Boulevard – bike lane;
- Rushing Road – bike lane;
- 4H Club Road – bike lane;
- Rushing Road – bike lane; and
- Bass Pro Boulevard – shared-use path/sidepath.

Additionally, shared-use path/sidepath connections are recommended between Denham Springs and unincorporated Livingston Parish to the immediate east. *Envision Livingston* identifies this area as a key growth zone going forward. Local stakeholders confirmed that planned connections are needed as plans and proposals for this zone are pending or in development. These connections include:

- Easement along Grays Creek and immediately south of Denham Springs Country Club;
- Easement along Canadian National rail line;
- Florida Boulevard;
- Cook Road; and
- Juban Road.

Table 2-1 provides a key for facility types listed in Tables 2-2 and 2-3.

Table 2-2 lists all the proposed bicycle improvements in the bicycle network plan. The bicycle recommendations within the City of Denham Springs total 31 miles with an estimated cost of \$11 million. The bicycle connections to the east of

FIGURE 2-2. DENHAM SPRINGS BICYCLE NETWORK

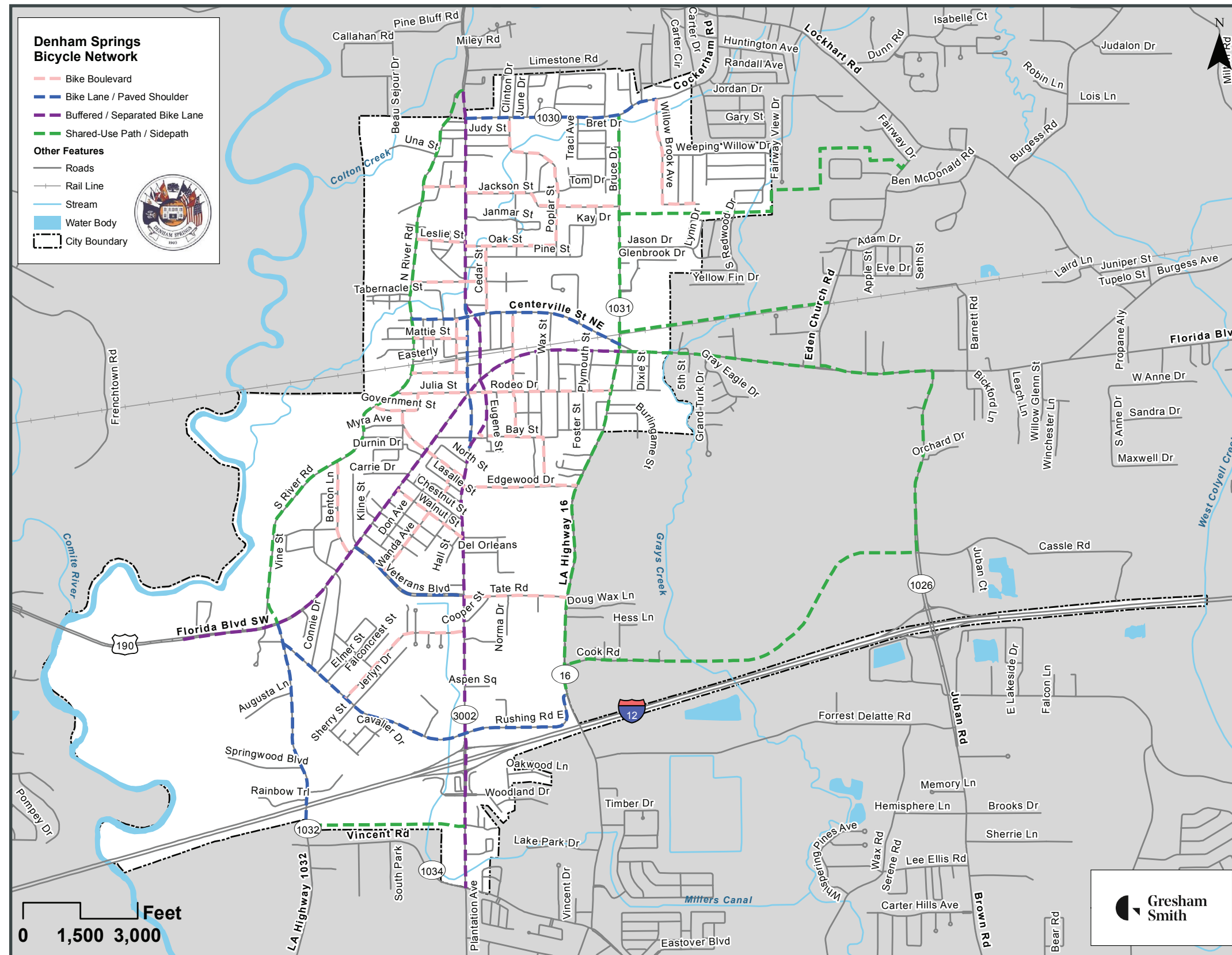


TABLE 2-1. BICYCLE AND PEDESTRIAN FACILITY TYPES

Facility Type Name	Abbreviation
Bicycle Boulevard	BB
Bicycle Lane/Paved Shoulder	BL/SP
Buffered/Separated Bicycle Lane	BBL/SBL
Shared-Use Path	SUP

TABLE 2-2. BICYCLE FACILITIES

ID	Road	From	To	Linear Feet	Facility Type*	Unit Cost	Projected Construction Cost
B-1	Cockerham Rd	N Range Ave	Willow Brook Ave	5,109	BL/PS	\$5	\$25,545
B-2	N River Rd	N Range Ave	Centerville St NW	6,310	SUP	\$230	\$1,451,300
B-3	N Range Ave	N River Rd	Stubb St	5,576	BL/PS	\$5	\$27,880
B-4	Willow Brook Dr	Cockerham Rd	Willow Woods Park	3,723	BBL/SBL	\$10	\$37,230
B-5	Robbie St/Poplar St	Cockerham Rd	Jackson St/ Maple St	3,203	BB	\$45	\$144,135
B-6	Jackson St/Maple St	N Range Ave	Hatchell Ln	4,213	BB	\$45	\$189,585
B-7	Hatchell Ln	Cockerham Rd	Maple St	2,400	SUP	\$230	\$552,000
B-8	Oak St/Poplar St	N Range Ave	Jackson St/ Maple St	3,402	BB	\$45	\$153,090
B-9	Carrell St	N River Rd	N Range Ave	1,103	BB	\$45	\$49,635
B-10	(New SUP)	Hatchell Ln	Fairway Dr	9,654	SUP	\$230	\$2,220,420
B-11	Leslie St	N River Rd	N Range Ave	1,277	BB	\$45	\$57,465
B-12	Hatchell Ln	Maple St	Florida Ave	3,800	SUP	\$230	\$874,000
B-13	Cedar St	Oak St	Centerville St NW	1,702	BB	\$45	\$76,590
B-14	N College Dr	N River Rd	Cedar St	1,948	BB	\$45	\$87,660
B-15	Centerville St NW	N River Rd	Hatchell Ln	5,677	BL/PS	\$5	\$28,385
B-16	(New SUP)	Hatchell Ln	Eden Church Rd	5,539	SUP	\$230	\$1,273,970
B-17	S River Rd	Centerville Rd NW	Florida Ave	9,694	SUP	\$230	\$2,229,620
B-18	S Range Ave	Stubb St	S Hummell St	3,810	BL/PS	\$5	\$19,050
B-19	S Hummell St	Stubb St	S Range Ave	4,065	BBL/SBL	\$10	\$40,650
B-20	N Summers St	Centerville Rd NW	Rodeo Dr	2,075	BB	\$45	\$93,375
B-21	Mattie St	N River Rd	S Range Ave	1,401	BB	\$45	\$63,045
B-22	Benton St	Centerville Rd NW	Sullivan St	1,405	BB	\$45	\$63,225
B-23	Sullivan St	N River Rd	S Range Ave	1,463	BB	\$45	\$65,835
B-24	Florida Ave	Riverview Dr	S Range Ave	10,436	BBL/SBL	\$10	\$104,360

TABLE 2-2. BICYCLE FACILITIES (CONTD.)

ID	Road	From	To	Linear Feet	Facility Type*	Unit Cost	Projected Construction Cost
B-25	Florida Ave	S Range Ave	Hatchell Ln	4,294	BBL/SBL	\$10	\$42,940
B-26	Florida Blvd	Hatchell Ln	Juban Rd	8,258	SUP	\$230	\$1,899,340
B-27	Juban Rd	Florida Blvd	Cassie Rd	4,833	SUP	\$230	\$1,111,590
B-28	Julia St	S River Rd	S Range Ave	1,880	BB	\$45	\$84,600
B-29	Rodeo Dr	S Range Ave	Petes Hwy	3,716	BB	\$45	\$167,220
B-30	Petes Hwy	Florida Ave	Rushing Rd E	9,223	SUP	\$230	\$2,121,290
B-31	Government Dr/ Lamm St	S River Rd	Julia St	1,560	BB	\$45	\$70,200
B-32	Summers St	Rodeo Dr	Bay St	1,192	BB	\$45	\$53,640
B-33	S Range Ave	S Hummell St	Rushing Rd E	7,484	BBL/SBL	\$10	\$74,840
B-34	Capitol St	Government Dr	Florida Ave	1,295	BB	\$45	\$58,275
B-35	Capitol St	Florida Ave	S Range Ave	1,224	BB	\$45	\$55,080
B-36	Bay St	S Hummell St	East St	1,704	BB	\$45	\$76,680
B-37	East St	Bay St	Edgewood Dr	1,266	BB	\$45	\$56,970
B-38	Edgewood Dr	S Range Ave	Petes Hwy	2,989	BB	\$45	\$134,505
B-39	Walnut St	Florida Ave	S Range Ave	2,133	BB	\$45	\$95,985
B-40	Wanda Ave/ Richland St	Capitol St	Veterans Blvd	3,340	BB	\$45	\$150,300
B-41	Benton Ln	S River Rd	Florida Ave	2,516	BB	\$45	\$113,220
B-42	Veterans Blvd	Florida Ave	S Range Ave	3,334	BL/PS	\$5	\$16,670
B-43	Tate Rd	S Range Ave	Petes Hwy	2,707	BB	\$45	\$121,815
B-44	Carolyn Ave	Rushing Rd W	S Range Ave	3,851	BB	\$45	\$173,295
B-45	Cook Rd/Cassie Rd	Petes Hwy	Juban Rd	10,531	SUP	\$230	\$2,422,130
B-46	4H Club Rd	Florida Ave	Bass Pro Blvd	5,373	BL/PS	\$5	\$26,865
B-47	Rushing Rd	4H Club Rd	S Range Ave	5,602	BL/PS	\$5	\$28,010

2.2 Pedestrian Recommendations

Existing sidewalks in the City of Denham Springs provide some connectivity within the city but are limited to unconnected segments along major streets (e.g. North Range Avenue) or in residential neighborhoods. The recommended improvements (Figure 2-3) target key gaps in the existing sidewalk network with an emphasis on providing north-south and east-west connections on both major thoroughfares and neighborhood streets. Combined with the recommended shared-use paths/sidepaths, the network will provide pedestrian access to schools, parks, and activity centers, including all public schools in the city, Freshwater Park, and Livingston Square. The pedestrian network plan also includes 24 improvements at key intersections to improve bicycle and pedestrian safety. Table 2-3 lists all the sidewalk recommendations, which total approximately 13 miles at an estimated cost of \$5.3 million. The intersection improvement recommendations are included in Table 2-4.

While unit costs by facility type are provided for the bicycle and pedestrian recommendations, specific intersection treatments, and their associated costs, will likely vary depending on the intersection location, roadway characteristics (e.g. traffic volume, posted speed, number of lanes), and the existing intersection treatments.

FIGURE 2-3. DENHAM SPRINGS PEDESTRIAN NETWORK

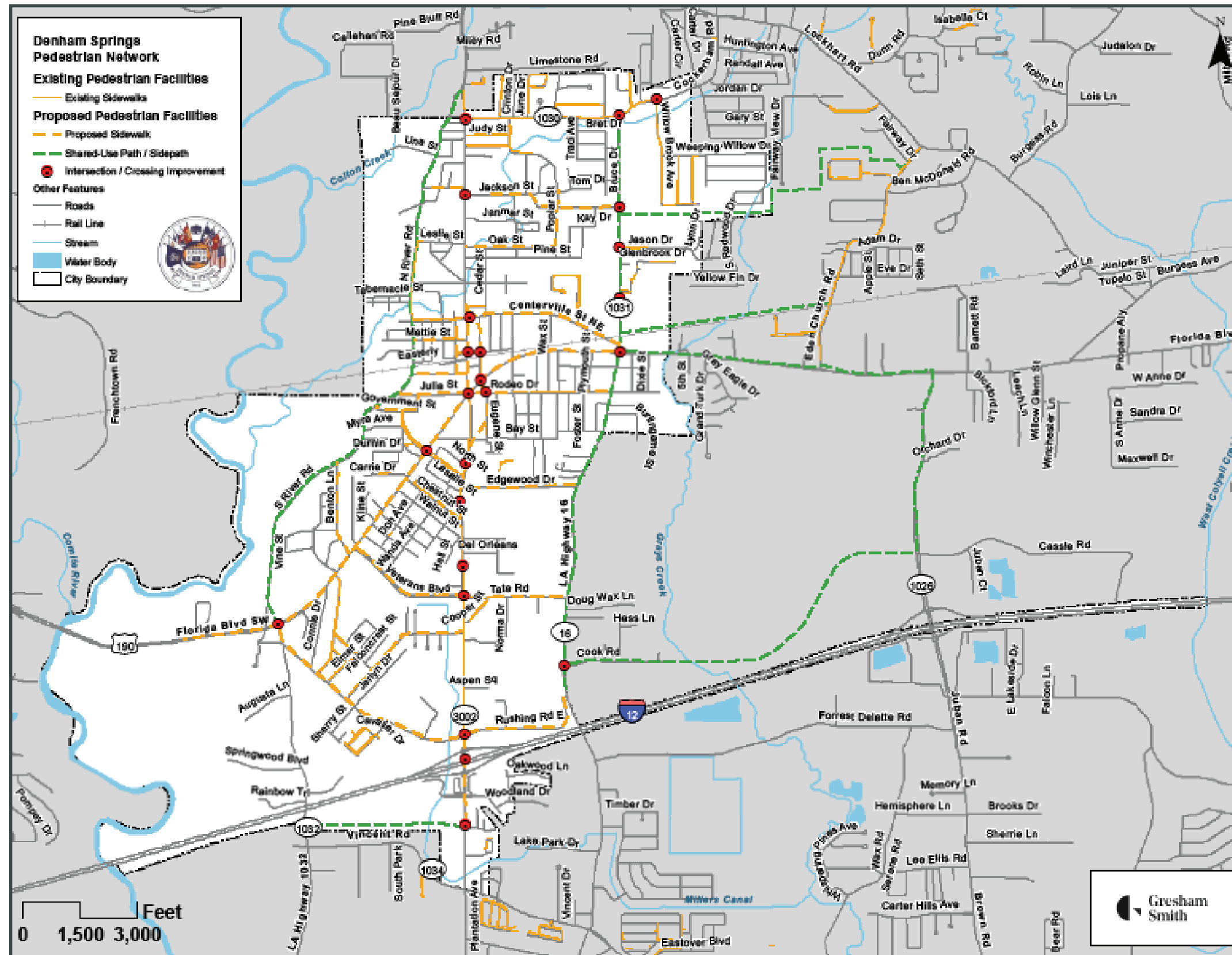


TABLE 2-3. PEDESTRIAN FACILITIES

ID	Road	From	To	Linear Feet	Facility Type*	Unit Cost (per linear foot)	Projected Construction Cost
P-1	Robbie St	Cockerham Rd	Judy St	419	SW	\$75	\$31,425
P-2	Carrol St	N River Rd	N Range Ave	1,065	SW	\$75	\$79,875
P-3	Jackson St	E of N Range Ave	Poplar St	1,871	SW	\$75	\$140,325
P-4	Maple St	Poplar St	Hatchell Ln	1,671	SW	\$75	\$125,325
P-5	Poplar St	Tom Dr	Oak St	1,445	SW	\$75	\$108,375
P-6	Oak St	N Range Ave	Poplar St	2,370	SW	\$75	\$177,750
P-7	Centerville St NW	N River Rd	Hummell St	1,581	SW	\$75	\$118,575
P-8	Centerville St NW	Hummell St	Hatchell Ln	4,055	SW	\$75	\$304,125
P-9	Hummell St	Stubb St	E Railroad Ave	1,408	SW	\$75	\$105,600
P-10	N Range Ave	Stubb St	Julia St	2,352	SW	\$75	\$176,400
P-11	Mattie St	N River Rd	S Range Ave	1,120	SW	\$75	\$84,000
P-12	Benton St	Centerville St NW	Sullivan St	1,388	SW	\$75	\$104,100
P-13	E Railroad Ave	Benton St	S Range Ave	304	SW	\$75	\$22,800
P-14	S Hummell St	Florida Ave	S Range Ave	1,877	SW	\$75	\$140,775
P-15	Florida Ave	S Range Ave	Hatchell Ln	4,316	SW	\$75	\$323,700
P-16	Sullivan St	N River Rd	S Range Ave	1,436	SW	\$75	\$107,700
P-17	Julie St	S River Rd	S Range Ave	1,863	SW	\$75	\$139,725
P-18	Rodeo Dr	S Range Ave	Summers St	1,167	SW	\$75	\$87,525
P-19	Rodeo Dr	Coronet St	Petes Hwy	929	SW	\$75	\$69,675
P-20	Government St/ Lamm St	S River Rd	Julia St	1,542	SW	\$75	\$115,650
P-21	Florida Ave	Veterans Blvd	S Range Ave	5,001	SW	\$75	\$375,075
P-22	Edgewood Dr	S Range Ave	Petes Hwy	2,989	SW	\$75	\$224,175
P-23	Benton Ln	S River Rd	Florida Ave	2,450	SW	\$75	\$183,750
P-24	Florida Ave	Riverview Dr	Veterans Blvd	5,413	SW	\$75	\$405,975
P-25	Chestnut St	Florida Ave	Service Dr	218	SW	\$75	\$16,350
P-26	Chestnut St	E of Wanda Ave	S Range Ave	654	SW	\$75	\$49,050
P-27	Veterans Blvd	Florida Ave	S Range Ave	3,334	SW	\$75	\$250,050
P-28	Tate Rd	S Range Ave	Petes Hwy	2,708	SW	\$75	\$203,100
P-29	Carolyn Ave	W of Brookfield Dr	S Range Ave	504	SW	\$75	\$37,800
P-30	4h Club Rd	Florida Ave	Rushing Rd W	1,812	SW	\$75	\$135,900
P-31	Rushing Rd W	4H Club Rd	S Range Ave	5,591	SW	\$75	\$419,325
P-32	Rushing Rd E	S Range Ave	Petes Hwy	3,505	SW	\$75	\$262,875
P-33	S Range Ave	Rushing Rd	Bass Pro Blvd	2,397	SW	\$75	\$179,775

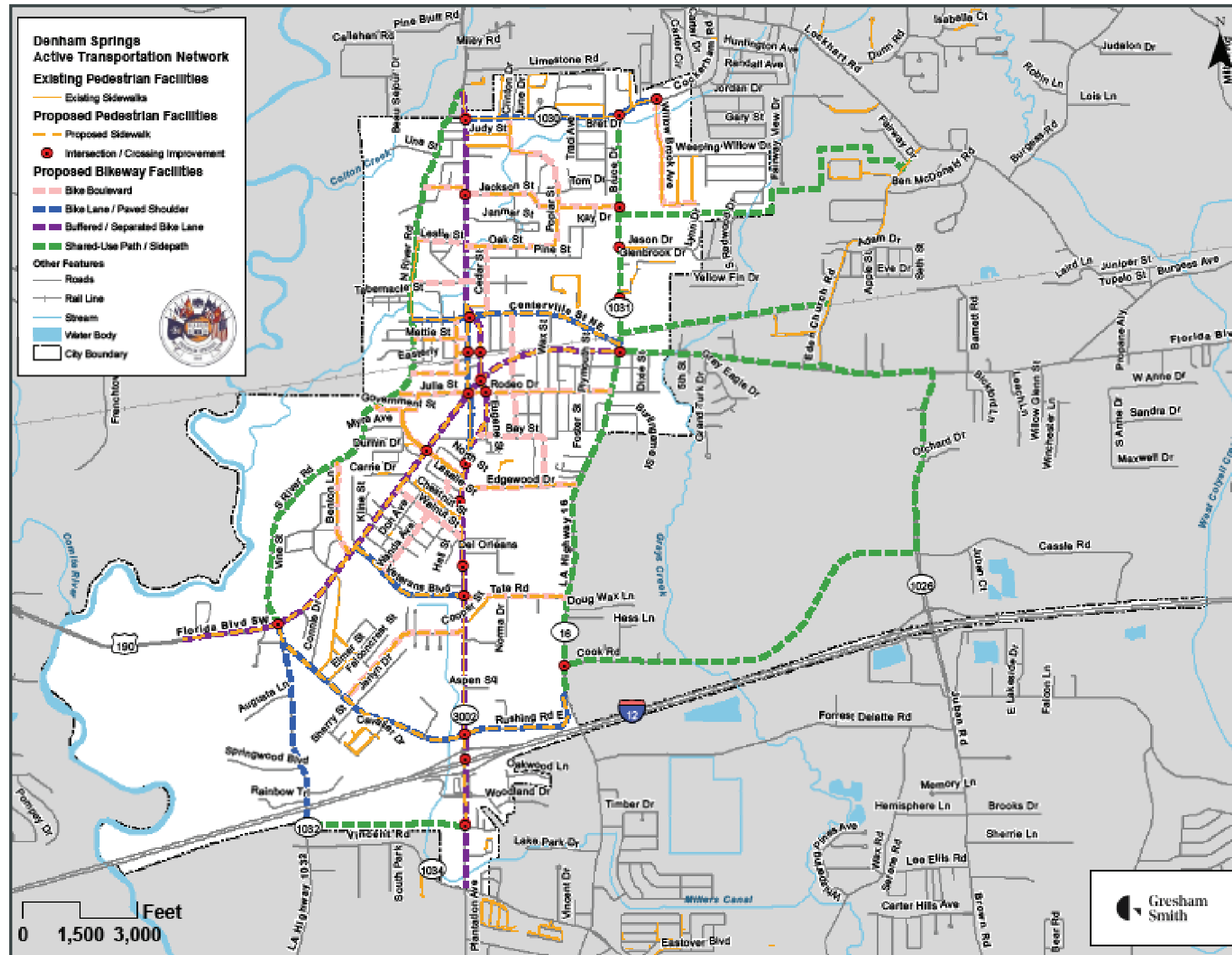
TABLE 2-4. INTERSECTION IMPROVEMENTS

ID	N/S Cross Street	E/W Cross Street
I-1	N Range Ave	Cockerham Rd
I-2	Patchell Ln	Cockerham Rd
I-3	Willow Brook Ave	Cockerham Rd
I-4	N Range Ave	Jackson St
I-5	Hatchell Ln	Maple St
I-6	Hatchell Ln	Jason Dr
I-7	Hatchell Ln	Meadowbrook Ln
I-8	N Range Ave / Hummell St	Centerville Rd
I-9	N Range Ave	E Railroad Ave
I-10	Hummel St	E Railroad Ave
I-11	Hatchell Ln	Florida Ave
I-12	Hummel St	Florida Ave
I-13	S Range Ave	Julia St
I-14	Hummel St	Julia St
I-15	Capital St	Florida Ave
I-17	S Range Ave	Hazelnut St
I-18	S Range Ave	(Southside ES)
I-19	S Range Ave	Veterans Blvd/Tate Rd
I-20	S River Rd/4H Club Rd	Florida Ave
I-21	Petes Hwy	Cook Rd
I-22	S Range Ave	Rushing Rd
I-23	S Range Ave	(I-12 Interchange)
I-24	S Range Ave	Bass Pro Blvd/Kathryn Dr

2.3 Recommended Bicycle and Pedestrian Network

Taken together, the bicycle, pedestrian, and intersection improvement recommendations, once fully implemented, will transform the active transportation environment in the City of Denham Springs. As shown in Figure 2-4, the network will provide citywide coverage for users of all ages and abilities, providing residents and visitors in Denham Springs meaningful transportation choices to access the places they live, work, play, and learn.

FIGURE 2-4. DENHAM SPRINGS ACTIVE TRANSPORTATION NETWORK



3.0 BICYCLE AND PEDESTRIAN GUIDELINES

The Denham Springs Bicycle and Pedestrian Master Plan recommends an active transportation network that connects people to places they want to go. An important aspect of the plan's success going forward is to ensure that the facilities are consistently safe and comfortable for users. To this end, design guidelines have been developed for Denham Springs to help ensure that bicycle and pedestrian improvements meet national best practices and to ultimately support the implementation of the recommended network plans.

The design guidelines (Figures 3-1 through 3-4), based largely on National Association of City Transportation Officials (NACTO) standards, cover the following facility types and, with the network plans, serve as the blueprint for improving walking and bicycling in Denham Springs:

- Bike lanes;
- Buffered bike lanes;
- Separated bike lanes;
- Advisory bike lanes;
- Signalized intersections;
- Shared-use paths;
- Sidepaths; and
- Sidewalks.

It should be noted that, while advisory bike lanes are not specifically recommended in the bicycle network plan, they do illustrate many of the same strategies that can be employed in bike boulevards. The principal difference between



FIGURE 3-1. DESIGN GUIDELINES: SHARED-USE PATHS AND SIDEPATHS

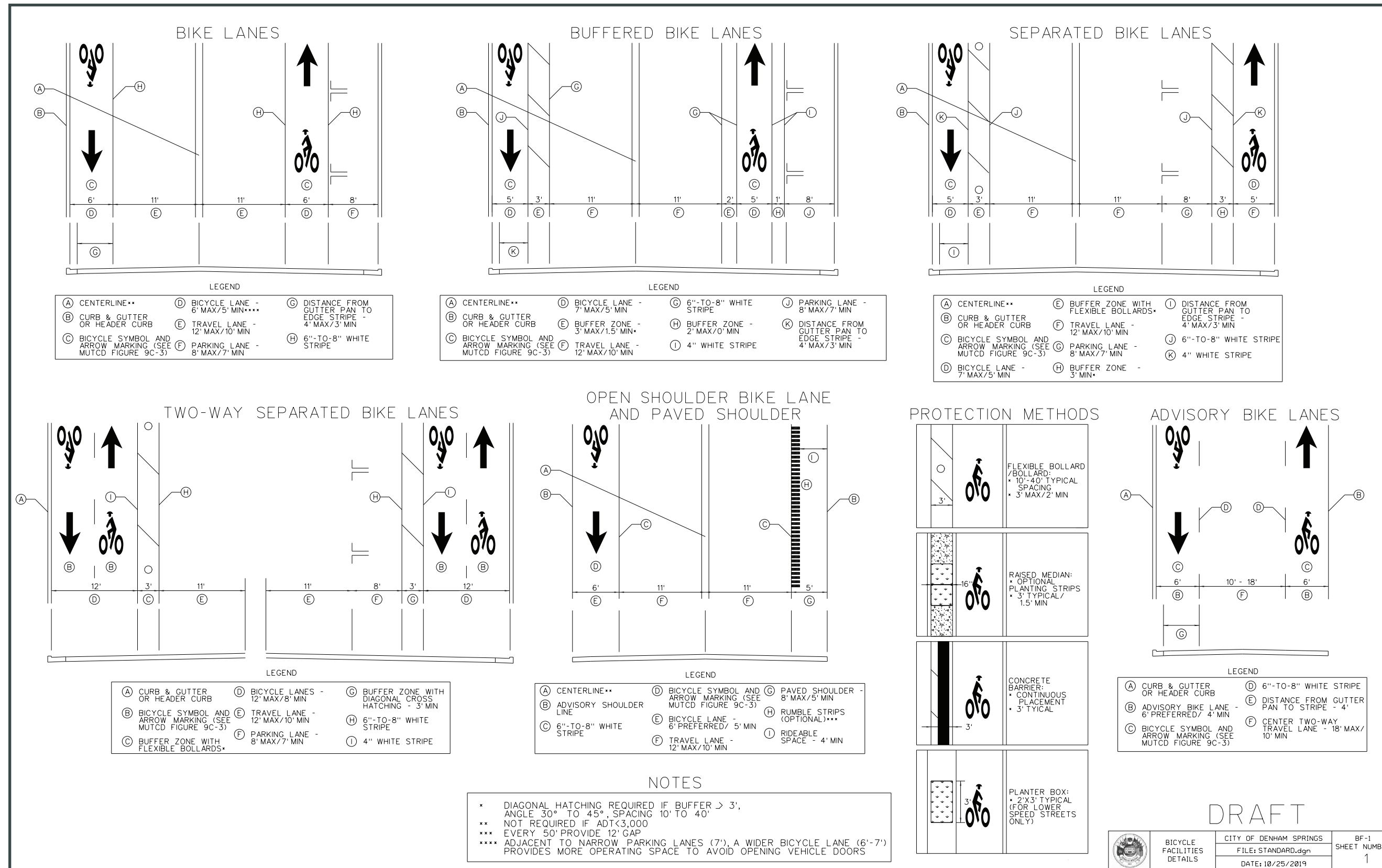


FIGURE 3-2. DESIGN GUIDELINES: INTERSECTIONS

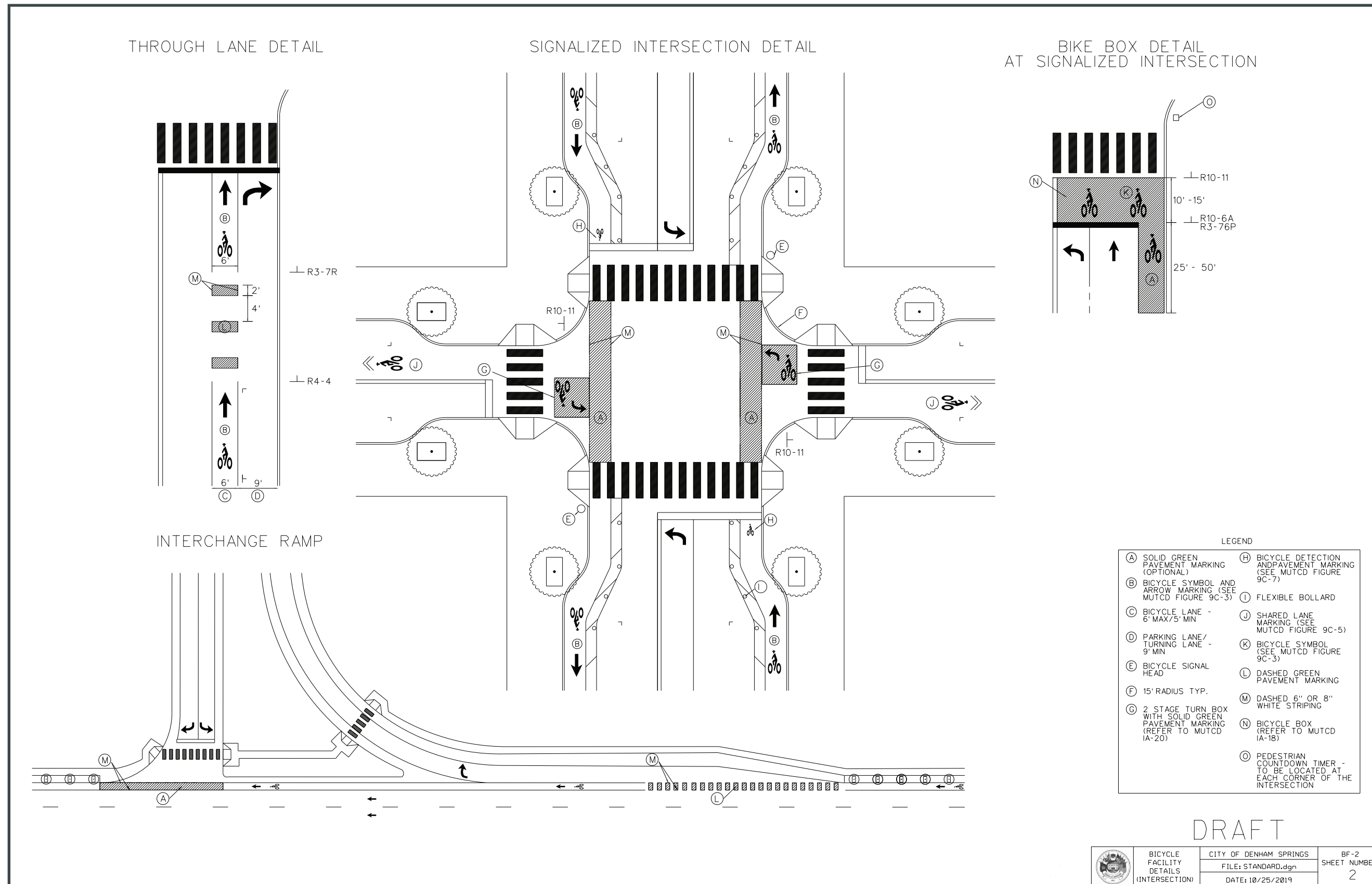
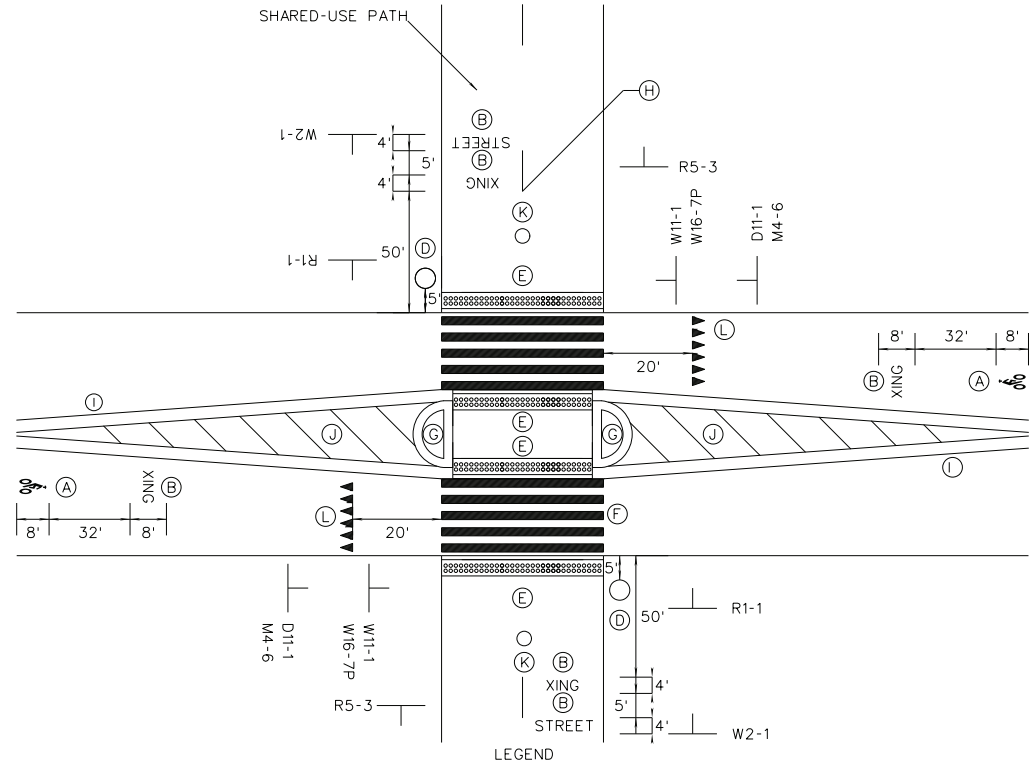
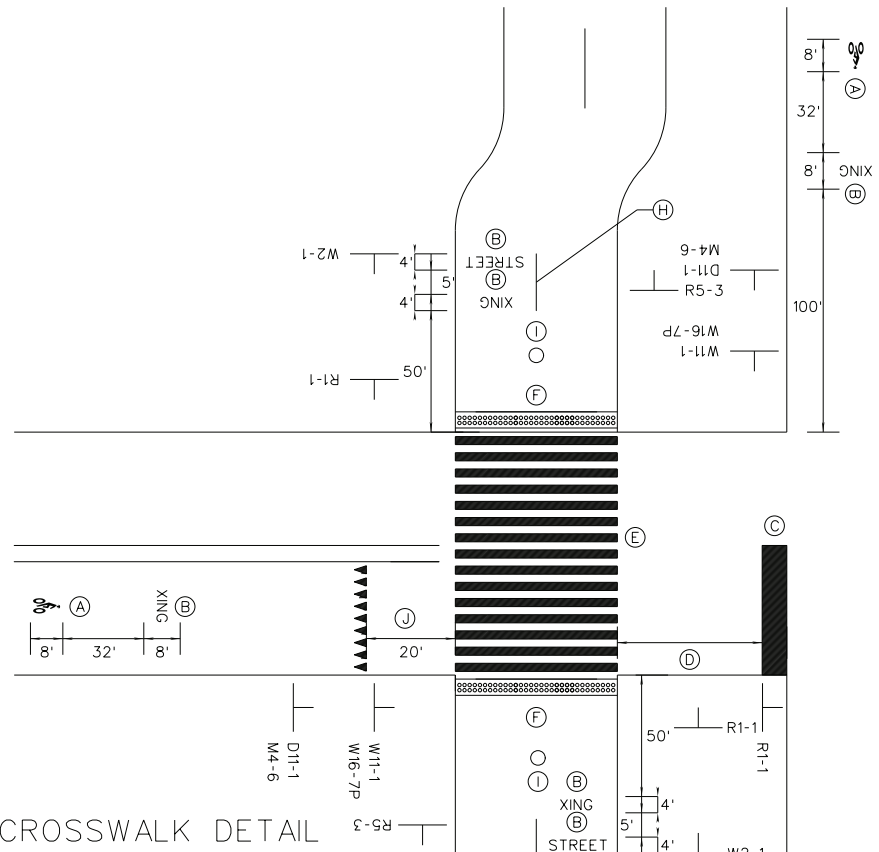


FIGURE 3-3. DESIGN GUIDELINES: BICYCLES

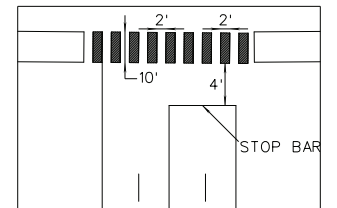
**SHARED-USE PATHWAY
MID-BLOCK CROSSING**



SIDEPATH CROSSING AT INTERSECTION



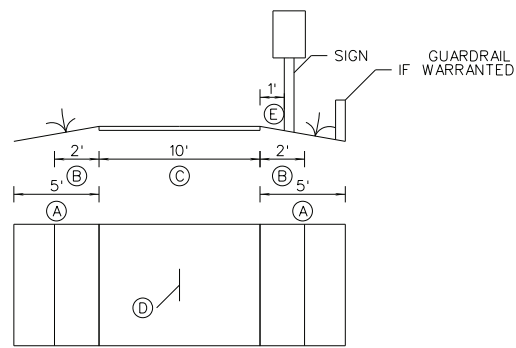
CROSSWALK DETAIL



- LEGEND**
- (A) BICYCLE SYMBOL (SEE MUTCD - FIG. 9C-3)
 - (B) WORD LEGENDS (SEE MUTCD - FIG. 9C-3)
 - (C) STOP BAR - 24" LEGEND WHITE
 - (D) PEDESTRIAN HYBRID BEACON IF WARRANTED
 - (E) TACTILE WARNING SURFACE
 - (F) CROSSWALK - 24" LEGEND WHITE (SEE DETAIL)
 - (G) RAISED CURB
 - (H) 6" SKIP YELLOW
 - (I) DOUBLE CONTINUOUS YELLOW STRIPE - 6"
 - (J) DIAGONAL HATCHING - 5' - 10' SPACING AT ANGLE OF 30° TO 45°
 - (K) REMOVABLE BOLLARDS
 - (L) YIELD BAR - 20' FROM CROSSWALK

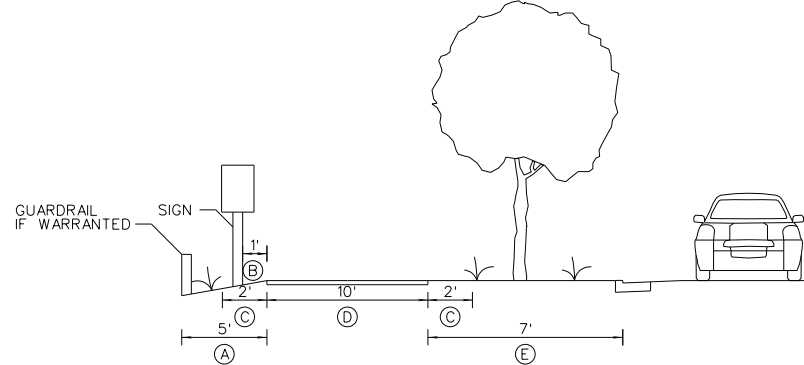
- LEGEND**
- (A) BICYCLE SYMBOL (SEE MUTCD - FIG. 9C-3)
 - (B) WORD LEGENDS (SEE MUTCD - FIG. 9C-3)
 - (C) STOP BAR - 24" LEGEND WHITE
 - (D) CROSSING TO STREET 8' MIN PREFERRED
 - (E) CROSSWALK - 24" LEGEND WHITE (SEE DETAIL)
 - (F) TACTILE WARNING SURFACE
 - (G) 4" SKIP YELLOW
 - (H) REMOVABLE BOLLARDS
 - (I) YIELD BAR - 20' FROM CROSSWALK

SHARED-USE PATHWAY

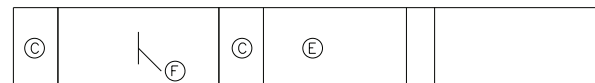


- LEGEND**
- (A) RECOVERY AREA - 5' TYP/3' MIN
 - (B) UNPAVED SHOULDER - 2', MAX SLOPE 4%
 - (C) PATH WIDTH - 14' MAX/10' MIN
 - (D) 4" SKIP YELLOW STRIPE
 - (E) LATERAL CLEARANCE - 1' MIN

SIDEPATH



- LEGEND**
- (A) RECOVERY AREA - 5' TYP/3' MIN
 - (B) LATERAL CLEARANCE - 1' MIN
 - (C) UNPAVED SHOULDER - 2', MAX SLOPE 4%
 - (D) PATH WIDTH - 14' MAX/8' MIN
 - (E) SEPARATION FROM TRAVEL LANE - SEE SD-1 FOR VERGE WIDTH
 - (F) 6" SKIP YELLOW STRIPE

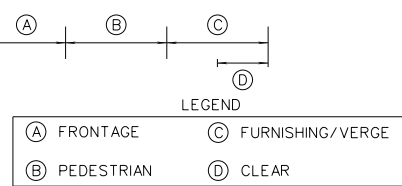
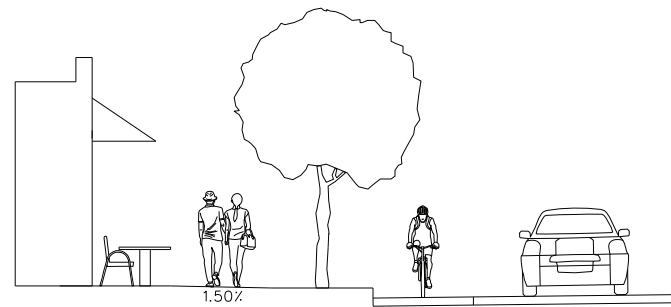


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	SHARED-USE PATHWAY DETAILS	CITY OF DENHAM SPRINGS	SU-1
		FILE: STANDARD.dgn	SHEET NUMBER
		DATE: 10/25/2019	3

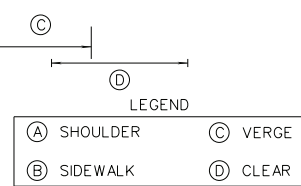
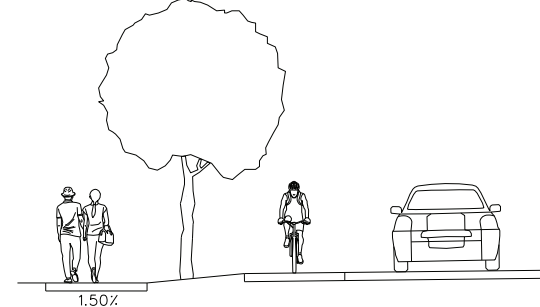
FIGURE 3-4. DESIGN GUIDELINES: SIDEWALKS

SIDEWALK ZONES - CURBED



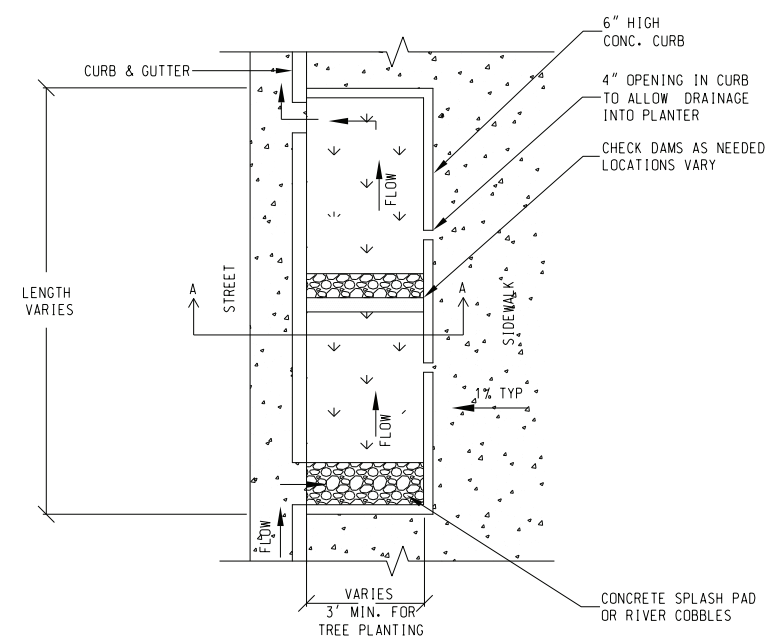
SIDEWALK ZONE CURBED		RURAL		SUBURBAN		URBAN		
		MIN.	TYP.	MIN.	TYP.	MIN.	TYP.	
ARTERIAL	A	FRONTAGE	1	1	1	1	4	
	B	PEDESTRIAN	5	8	5	7	10	
	C	FURNISHING	5	8	4	6	4	6
	D	CLEAR	5	8	1	2	1	2
COLLECTOR	A	FRONTAGE	1	1	1	1	4	
	B	PEDESTRIAN	5	6	5	6	8	
	C	FURNISHING	3	5	3	5	4	5
	D	CLEAR	2	4	1	2	1	2
LOCAL	A	FRONTAGE	0	1	0	1	3	
	B	PEDESTRIAN	5	6	5	6	8	
	C	FURNISHING	3	4	3	5	4	5
	D	CLEAR	1	3	1	1	1	2

SIDEWALK ZONES - NON-CURBED

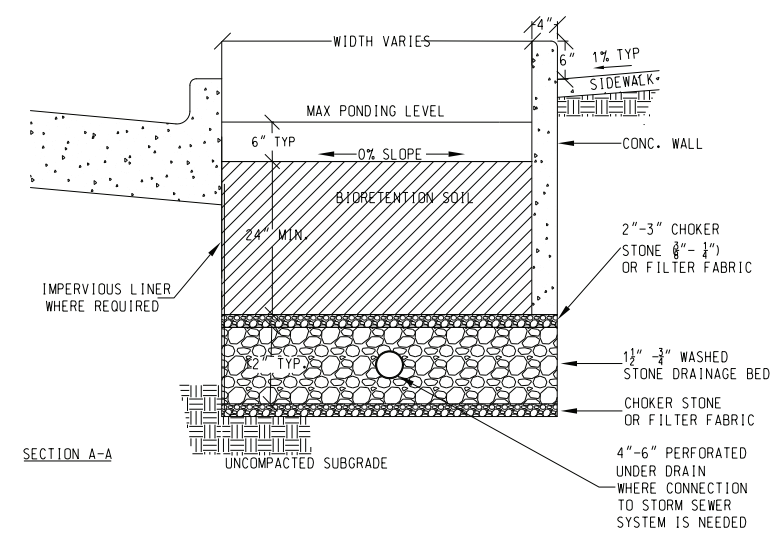


SIDEWALK ZONE UNCURBED		RURAL		SUBURBAN		
		MIN.	TYP.	MIN.	TYP.	
ARTERIAL	A	SHOULDER	1	2	1	2
	B	SIDEWALK	5	8	5	8
	C	VERGE	6	10	5	8
	D	CLEAR	7	10	5	8
COLLECTOR	A	SHOULDER	1	2	1	2
	B	SIDEWALK	5	7	5	7
	C	VERGE	5	8	4	6
	D	CLEAR	4	7	4	6
LOCAL	A	SHOULDER	0	1	0	1
	B	SIDEWALK	5	6	5	6
	C	VERGE	3	5	3	5
	D	CLEAR	2	4	2	4

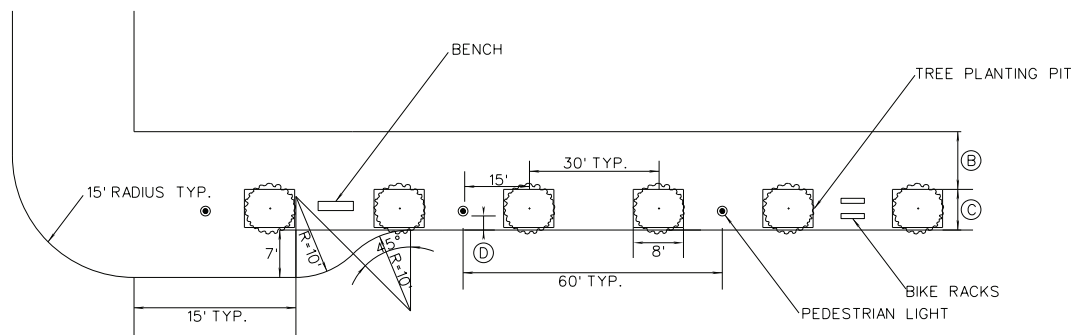
INFILTRATION BASIN - PLAN



INFILTRATION BASIN - SECTION



SIDEWALK PLAN



DRAFT

	SIDEWALK DETAILS	CITY OF DENHAM SPRINGS	SD-1
		FILE: STANDARD.dgn	SHEET NUMBER
		DATE: 10/25/2019	4

4.0 LOCAL DEVELOPMENT POLICIES AND REGULATIONS

The capital improvement recommendations and associated design guidelines ensure that future bicycle and pedestrian infrastructure in Denham Springs will be part of a larger coherent network of state-of-the-practice facilities. Three primary tools can be deployed by the City of Denham Springs to generally promote a more walkable and bikeable community going forward – specifically, a Complete Streets ordinance, zoning ordinances, and subdivision regulations. These strategies represent a cost-effective approach to implementation, as they encourage smaller changes to the built environment that, over time, both improve user safety and comfort and integrate active transportation in the city’s local culture.

Denham Strong identified the establishment of a Complete Streets ordinance as a necessary, complementary step to the Denham Springs Bicycle and Pedestrian Master Plan. Complete Streets policies have been adopted by many communities throughout the country and represent an effective strategy to ensure the needs of bicyclists and pedestrians are considered by all public agencies with jurisdiction within the local transportation right-of-way.

While there is no universal definition of a Complete Street, Smart Growth America suggests that Complete Streets may include some or all the following: sidewalks, bicycle facilities, frequent and safe crossing opportunities, median islands, accessible pedestrian signals, curb extensions, narrower travel lanes, and roundabouts, among other potential treatments.

A Complete Streets ordinance would require that the needs of all users, including motorists, bicyclists, and pedestrians, be accommodated on all future transportation system maintenance and improvement projects, with few exceptions. The most successful policies tend to include the following:

- Applying the Complete Streets policy in all phases of transportation project development, including planning, programming, design, construction, and maintenance;

- Updating all department, agency, and commission policies and standards for consistency with the Complete Streets policy; and
- Measuring outcomes, including design (e.g. percentage of planned sidewalks or bikeways constructed), and administrative (e.g. the number of exceptions granted and why) performance measures.

A model Complete Streets ordinance for Denham Springs is included as Appendix A.

Additionally, modifications to the existing zoning ordinance and subdivision regulations can result in further implementation of plan recommendations in addition to a general improvement of the environment for pedestrians and bicyclists. These modifications may include, but are not limited to, the following:

- Require pedestrian facilities or designated bikeways, such as sidewalks, crosswalks, bike lanes, or shared-use paths, during new construction or redevelopment;
- Require sidewalks or bicycle accommodations by roadway type, with a greater buffer or separation for higher-volume, higher-speed roads;
- Require dedication, reservation, or development of shared-use paths in new developments where a shared-use path is currently planned;
- Adopt traffic calming programs, policies, and standards; and
- Develop an access management plan or policy.

5.0 NON-INFRASTRUCTURE PROGRAMS

The League of American Bicyclists identify five “E’s” that are consistent in making great places for bicycling and walking: 1) engineering, 2) education, 3) enforcement, 4) encouragement, and 5) evaluation. Addressing the first “E,” capital bicycle and pedestrian facility improvements provide safe, designated spaces for people to walk and bike. However, these – in addition to the design guidelines – only provide physical space for users. In order to promote active transportation as both safe and viable to the public, a set of non-infrastructure programs are recommended to complement the facility improvements, addressing the remaining four “E’s.” Taken together these programs can strengthen the city’s active transportation culture for existing users and provide reassurance to potential users who may be hesitant to walk or bike.

The program recommendations in this section rely heavily on partnerships, both within the public sector and across the private and non-profit sectors, including businesses, community organizations, and civic groups. Since many non-infrastructure programs typically depend on in-kind staff and resources, establishing strong relationships with interested partners is critical to the initial and ongoing success of each recommendation. Table 5-1 describes programs that could be deployed in the short-term, concurrently with the implementation of network recommendations, along with potential partner(s) and funding source(s).

The key to the success of initial non-infrastructure programs is to regularly schedule events or outreach to facilitate the ongoing engagement of partners and the public. Single, one-off events can generate interest, but should be part of a larger, ongoing outreach and engagement strategy to begin changing local cultural attitudes to walking and bicycling. In addition to the short-term recommendations, longer-term strategies include:

TABLE 5-1. PRIORITY SHORT-TERM NON-INFRASTRUCTURE PROGRAMS

Category	Program	Responsible Party/Partner(s)	Funding Sources
Education	Bike rodeos; safety classes for children	City; Police Department; School District; Community Organizations	Grants; Parks & Recreation Budget
	Safety classes for adults	City; Police Department; Community Organizations	Grants; Parks & Recreation Budget
	Pop-up demonstrations to test out potential infrastructure projects and generate community interest	City; Community Organizations	City; Capital Region Planning Commission
	Bicycle/pedestrian safety awareness campaign for motorists	City; Capital Region Planning Commission	Grants
Encouragement	Pedestrian and bicycle maps and website	City; Capital Region Planning Commission	City; Capital Region Planning Commission
	Open streets events	City; Community Organizations	City; Sponsorships
Enforcement	Adopt a progressive ticketing program aimed at drivers and bicyclists	City; Police Department	City

Education

- Provide bike maintenance classes for children and adults
- Offer Safe Routes to Schools programming, such as International Walk to School Day
- Develop informational brochure or poster on bicycling rules and responsibilities

Encouragement

- Host launch parties for new bicycle and pedestrian facilities
- Hold “Open Street” events
- Promote active transportation through recreational events (e.g. Five Dollar 5k)
- Start local chapter of state and national organizations that promote active transportation (e.g. Bike Walk Louisiana)
- Organize regular walking and biking groups
- Incorporate bicycle- and pedestrian-friendly services at local events (e.g. bicycle valet)

Enforcement

- Provide education and ongoing training to law enforcement personnel on bicycle and pedestrian rights and responsibilities
- Install speed feedback signs at key locations
- Use the Bicycle and Pedestrian Master Plan for future project and development review

Evaluation

In addition to the previous non-infrastructure “E’s,” which can help strengthen the city’s active transportation culture and attract new users as infrastructure projects are implemented, other non-infrastructure programs can help the city evaluate the impact of both infrastructure and non-infrastructure projects, programs, and strategies. These are inherently longer-term programs, as project implementation and other non-infrastructure programs must be given some time to be effective prior to evaluation. The following strategies can help Denham Springs evaluate its active transportation progress:

- Conduct bicycle and pedestrian counts at key attractions and activity centers;
- Evaluate traffic infractions, speeds, and crash data at bicycle and pedestrian safety hotspots;
- Conduct surveys of parents, students, and/or the general public to gather insight on project and program effectiveness; and
- Establish long-term goal(s) for community transformation (e.g. pursue Bicycle Friendly Community designation through The League of American Bicyclists).

6.0 IMPLEMENTATION AND FUNDING STRATEGIES

6.1 Project Prioritization

The Denham Springs Bicycle and Pedestrian Master Plan provides the overall framework for improving bicycle and pedestrian user safety and comfort in the city. The lists of improvements outlined in Section 2.0 identify specific segments of roadway or intersections where improvements are needed and recommend a specific facility treatment consistent with national best practices and local conditions. However, some projects can provide greater or more immediate benefits than others. As such, a prioritization framework was developed to provide a draft project implementation schedule.

Criteria were identified to help prioritize streets, roads, and intersections with facility recommendations in the master plan. As shown in Table 6-1, the criteria are closely tied to the master plan’s goals and objectives and include three primary categories: 1) safety, 2) demand, and 3) equity. While other considerations, such as coordination with LaDOTD improvements, requirements of grant funding, or a change in political leadership may alter the city’s specific strategy to plan implementation, the implementation schedules provided in Tables 6-2 and 6-3 provide a preliminary recommendation of project priorities for short-term, mid-term, and long-term consideration. Intersection improvements identified in Section 2.0 can be strategically coordinated with bikeway and sidewalk implementation, or implemented separately in coordination with CRPC and LaDOTD. Maps of the scheduled improvements are shown in Figures 6-1 and 6-2.

TABLE 6-1. PROJECT PRIORITIZATION CRITERIA

Category	Criterion
Safety	ADT - Is the project adjacent to a high traffic volume roadway?
	Crash - How many bicycle and pedestrian crashes have occurred (2013 - 2017) within the project alignment?
	*Gap - Does the project close a gap in or otherwise directly connect to an existing facility?
Demand	Schools - Does the project provide access to a school?
	Parks - Does the project improve accessibility to parks?
	Population Density - Is the project located in a Census Block Group with a high population density?
	Commercial/Retail - Does the project provide access to land zoned for or determined to consist of a commercial/retail or office use?
Equity	Low-Income - Is the project located in a Census Block Group with a high percentage of low-income residents?

*Criterion only applied to sidewalk recommendations, no existing bikeway facilities.

FIGURE 6-1. PEDESTRIAN SCHEDULE

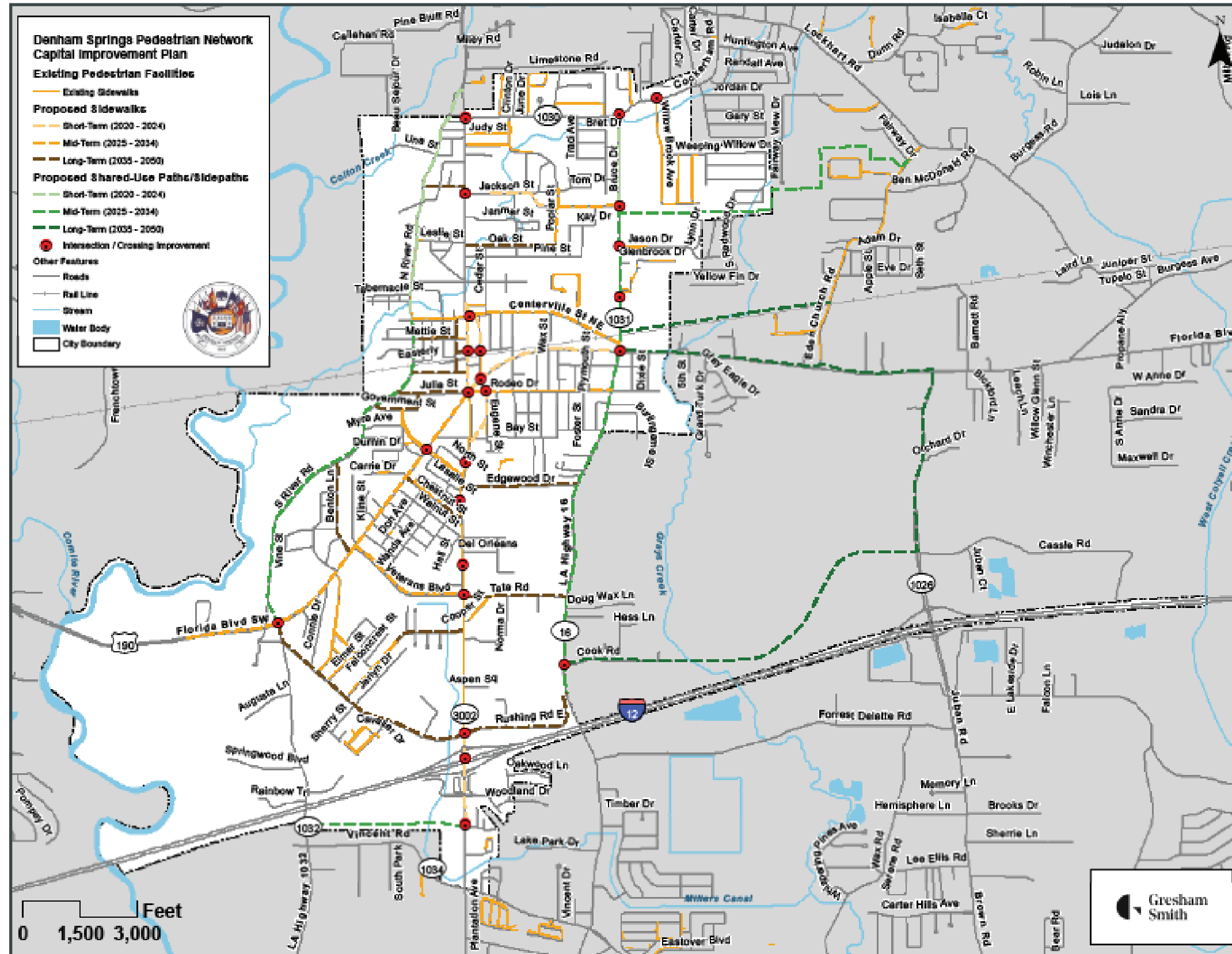


TABLE 6-2. PEDESTRIAN SCHEDULE

CAPITAL IMPROVEMENT PLAN - PEDESTRIAN NETWORK

Road	From	To	Facility Type	Projected Construction Cost
Short-Term (2020-2024)				
Florida Ave	S Range Ave	Hatchell Ln	SW	\$139,725
Jackson St	End of N Range Ave	Poplar St	SW	\$108,375
S Hummell St	Florida Ave	S Range Ave	SW	\$107,700
S Range Ave	Stubb St	Rodeo Dr	SW	\$104,100
S Hummell St	Stubb St	E Railroad Ave	SW	\$84,000
S Range Ave	Rushing Rd	Bass Pro Blvd	SW	\$179,775
Total Short-Term Project Cost				\$723,675

Road	From	To	Facility Type	Projected Construction Cost
Mid-Term (2025-2034)				
Florida Ave	Veterans Blvd	S Range Ave	SW	\$183,750
Rodeo Dr	S Range Ave	Summers St	SW	\$115,650
Florida Ave	Riverview Dr	Veterans Blvd	SW	\$49,050
Rodeo Dr	Coronet St	Petes Hwy	SW	\$375,075
Robbie St	Cockerham Rd	Judy St	SW	\$140,325
Centerville St NW	N River Rd	Hummell St	SW	\$ 105,600
Poplar St	Tom Dr	Oak St	SW	\$118,575
Centerville St NW	Hummell St	Hatchell Ln	SW	\$176,400
Veterans Blvd	Florida Ave	S Range Ave	SW	\$37,800
Maple St	Poplar St	Hatchell Ln	SW	\$177,750
Total Mid-Term Project Cost				\$1,479,975

CAPITAL IMPROVEMENT PLAN - PEDESTRIAN NETWORK (CONTD.)

Road	From	To	Facility Type	Projected Construction Cost
Long-Term (2035-2050)				
Mattie St	N River Rd	S Range Ave	SW	\$22,800
Benton St	Centerville St NW	Sullivan St	SW	\$140,775
E Railroad Ave	Benton St	S Range Ave	SW	\$323,700
Julie St	S River Rd	S Range Ave	SW	\$69,675
Chestnut St	E of Wanda Ave	S Range Ave	SW	\$203,100
Tate Rd	S Range Ave	Petes Hwy	SW	\$135,900
Sullivan St	N River Rd	S Range Ave	SW	\$87,525
Benton Ln	S River Rd	Florida Ave	SW	\$16,350
Oak St	N Range Ave	Poplar St	SW	\$304,125
Rushing Rd W	4H Club Rd	S Range Ave	SW	\$179,775
Carrol St	N River Rd	N Range Ave	SW	\$125,325
Government St/ Lamm St	S River Rd	Julia St	SW	\$244,175
Chestnut St	Florida Ave	Service Dr	SW	\$250,050
Rushing Rd E	S Range Ave	Petes Hwy	SW	\$262,875
Edgewood Dr	S Range Ave	Petes Hwy	SW	\$405,975
Carolyn Ave	W of Brookfield Dr	S Range Ave	SW	\$419,325
4h Club Rd	Florida Ave	Rushing Rd W	SW	\$262,875
Total Long-Term Project Cost				\$3,434,325

FIGURE 6-2. BICYCLE SCHEDULE

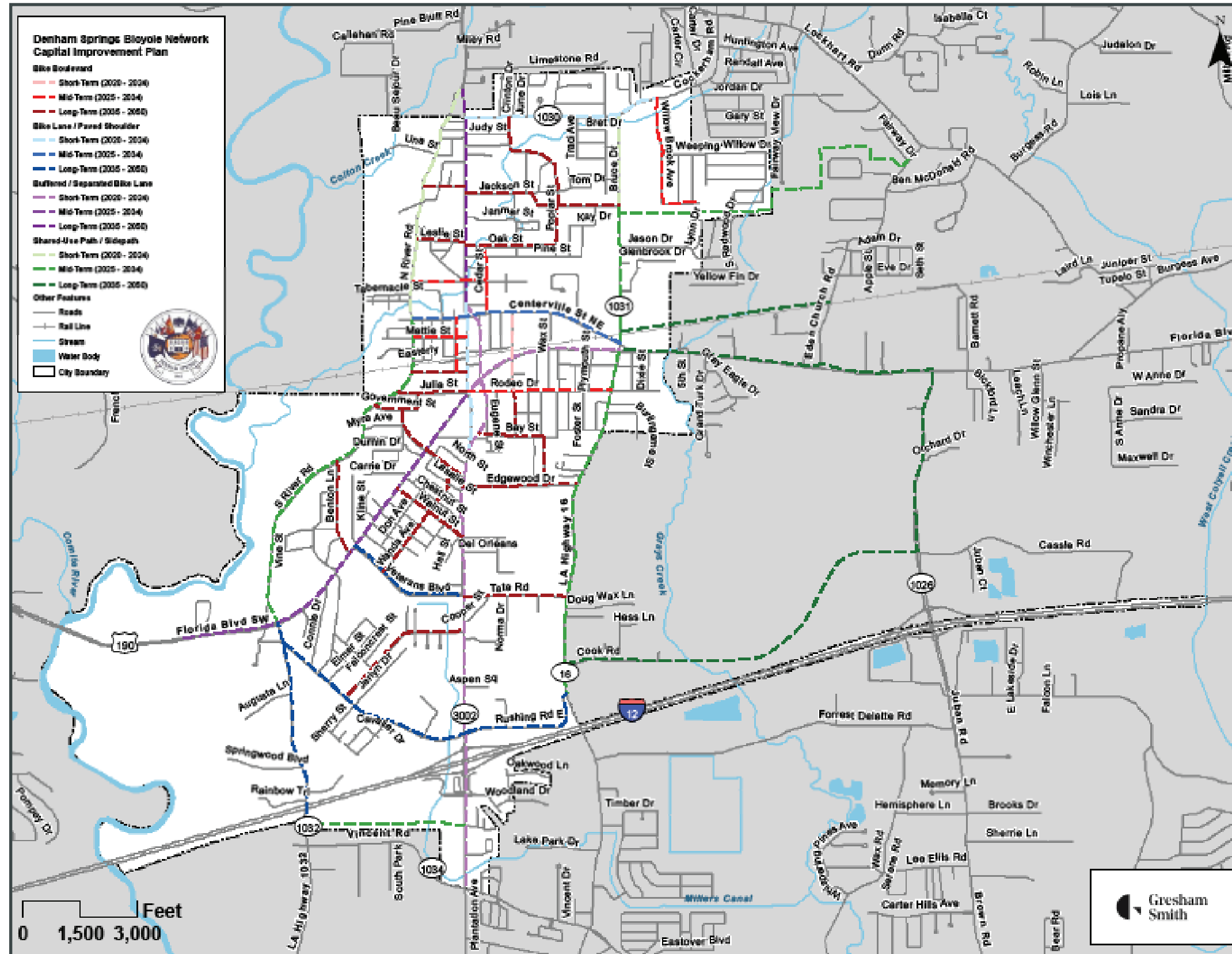


TABLE 6-3. BICYCLE SCHEDULE

CAPITAL IMPROVEMENT PLAN - BICYCLE NETWORK

Road	From	To	Facility Type	Projected Construction Cost
Short-Term (2020-2024)				
S Hummell St	Stubb St	S Range Ave	BBL/SBL	\$162,600
N Range Ave	N River Rd	Stubb St	BL/PS	\$195,160
S Range Ave	Stubb St	S Hummell St	BL/PS	\$133,350
Florida Ave	S Range Ave	Hatchell Ln	BBL/SBL	\$171,760
N River Rd	N Range Ave	Centerville St NW	SUP	\$946,500
S Range Ave	Rushing Rd W	Vincent Rd	BBL/SBL	\$162,200
Cockerham Rd	N Range Ave	Willow Brook Ave	BL/PS	\$178,815
Hatchell Ln	Cockerham Rd	Maple St	SUP	\$360,000
N Summers St	Centerville Rd NW	Rodeo Dr	BB	\$31,125
S Range Ave	S Hummell St	Rushing Rd E	BBL/SBL	\$299,360
Total Short-Term Project Cost				\$2,640,870

Road	From	To	Facility Type	Projected Construction Cost
Mid-Term (2025-2034)				
Centerville St NW	N River Rd	Hatchell Ln	BL/PS	\$198,695
Willow Brook Dr	Cockerham Rd	Willow Woods Park	BBL/SBL	\$148,920
(New SUP)	Hatchell Ln	Fairway Dr	SUP	\$1,448,100
Hatchell Ln	Maple St	Florida Ave	SUP	\$570,000
Cedar St	Oak St	Centerville St NW	BB	\$25,530
N College Dr	N River Rd	Cedar St	BB	\$29,220
S River Rd	Centerville Rd NW	Florida Ave	SUP	\$1,454,100
Mattie St	N River Rd	S Range Ave	BB	\$21,015
Benton St	Centerville Rd NW	Sullivan St	BB	\$21,075
Bass Pro Blvd	4H Club Rd	S Range Ave	SUP	\$625,350
Florida Ave	Riverview Dr	S Range Ave	BBL/SBL	\$417,440
Rodeo Dr	S Range Ave	Petes Hwy	BB	\$55,740
Petes Hwy	Florida Ave	Rushing Rd E	SUP	\$1,383,450
Total Mid-Term Project Cost				\$6,398,635

CAPITAL IMPROVEMENT PLAN - BICYCLE NETWORK (CONTD.)

Road	From	To	Facility Type	Projected Construction Cost
Long-Term (2035-2050)				
Summers St	Rodeo Dr	Bay St	BB	\$17,880
Jackson St/Maple St	N Range Ave	Hatchell Ln	BB	\$63,195
Leslie St	N River Rd	N Range Ave	BB	\$19,155
Florida Blvd	Hatchell Ln	Juban Rd	SUP	\$1,238,700
Julia St	S River Rd	S Range Ave	BB	\$28,200
Bay St	S Hummell St	East St	BB	\$25,560
Capitol St	Government Dr	Florida Ave	BB	\$19,425
Edgewood Dr	S Range Ave	Petes Hwy	BB	\$44,835
Oak St/Poplar St	N Range Ave	Jackson St/Maple St	BB	\$51,030
4H Club Rd	Florida Ave	Bass Pro Blvd	BL/PS	\$188,055
Robbie St/Poplar St	Cockerham Rd	Jackson St/Maple St	BB	\$48,045
(New SUP)	Hatchell Ln	Eden Church Rd	SUP	\$830,850
Sullivan St	N River Rd	S Range Ave	BB	\$21,945
Government Dr/ Lamm St	S River Rd	Julia St	BB	\$23,400
East St	Bay St	Edgewood Dr	BB	\$18,990
Walnut St	Florida Ave	S Range Ave	BB	\$31,995
Wanda Ave/ Richland St	Capitol St	Veterans Blvd	BB	\$50,100
Benton Ln	S River Rd	Florida Ave	BB	\$37,740
Capitol St	Florida Ave	S Range Ave	BB	\$18,630
Veterans Blvd	Florida Ave	S Range Ave	BL/PS	\$116,690
Tate Rd	S Range Ave	Petes Hwy	BB	\$40,065
Carrell St	N River Rd	N Range Ave	BB	\$16,545
Rushing Rd	4H Club Rd	S Range Ave	BL/PS	\$196,070
Rushing Rd	S Range Ave	Petes Hwy	BL/PS	\$122,045
Juban Rd	Florida Blvd	Cassie Rd	SUP	\$724,950
Carolyn Ave	Rushing Rd W	S Range Ave	BB	\$57,765
Cook Rd/Cassie Rd	Petes Hwy	Juban Rd	SUP	\$1,579,650
Total Long-Term Project Cost				\$5,631,780

6.2 Funding Sources and Strategies

Traditionally, bicycle and pedestrian improvements are typically included as part of larger capital improvement projects, such as roadway resurfacing, widening, or new construction. However, increasingly some communities are opting to implement bicycle and pedestrian facilities as stand-alone improvements, particularly in or near high-priority locations such as schools. Implementation of the capital recommendations from the master plan will likely include a mix of both strategies. As such, this section presents a brief overview of potential funding sources for the city's consideration.

At the local level, there are several funding sources and strategies the city could pursue going forward. These include:

- Capital Improvement Budgets – Implement capital project recommendations through regularly scheduled capital projects, such as resurfacing, streetscape improvements, or new public or private development;
- Department Budgets – Departments such as Public Works or Parks and Recreation of Denham Springs (PARDS) can use their maintenance resources and staff to support programs and infrastructure maintenance;
- Dedication of Tax Revenue – Dedications of a portion of the local sales or property tax or a voter-approved tax increase;
- Fees – User fees provide an opportunity to generate revenue to fund infrastructure projects, such as sidewalk construction, and non-infrastructure programs, such as bicycle education classes;
- Grants – Competitive grants through public agencies or private/non-profit foundations can generate revenue for projects and programs; and
- Fundraising Campaigns – Fundraising through neighborhood groups, advocacy groups, or even crowd-funding can help generate additional resources for projects and programs.

Beyond the notable programs listed in Table 6-4, there are a wide range of federal, state, local, and private/non-profit funding sources used by jurisdictions throughout the country to implement bicycle and pedestrian projects and programs. The implementation of the plan recommendations will likely consist of a variety of funding sources and strategies, which can be pursued strategically as they become available.

While full implementation of all plan recommendations may seem challenging, the Denham Springs Bicycle and Pedestrian Master Plan represents a critical first step in achieving the citywide vision for walking and bicycling – and ultimately making the case for funding. As in most communities, there are competing needs and demands for resources. Bicycle and pedestrian facilities fundamentally tie the community together and offer safe, comfortable, and equitable mobility options to all residents. As such, these not only represent a commitment to community cohesion and equity, they also offer an excellent return on investment. With this master plan, along with other recovery efforts, Denham Springs is committing to emerge from the devastating flood of 2016 as a stronger, more resilient, and more equitable community.

TABLE 6-4. POTENTIAL FUNDING SOURCES

Funding Source	Eligible Activities	Grant Schedule	Contact Information/ Website
FEDERAL/ STATE			
Safe Routes to Public Places Program (STPPP), through the Highway Safety Improvement Program (HSIP)	The SRTPPP allows public agencies to compete for funding for SRTPPP projects for the purpose of facilitating the planning, development, and implementation of projects that will improve safety for pedestrians, bicyclists, and transit users of all ages and abilities. Eligible projects include improving pedestrian and bicycle facilities to schools, libraries, governmental buildings, hospitals, transit facilities, public parks, and other public places. All public roads, state and locally owned, are eligible under the SRTPPP.	The next competitive cycle will occur in 2020 at the earliest.	Laura Riggs Laura.Riggs@LA.GOV http://www.sp.dotd.la.gov/Inside_LaDOTD/Divisions/Multimodal/Highway_Safety/SRTPPP
Urban Systems Program	This category of funding encompasses many different types of projects. Some of the projects that have been completed by this program include reconstruction of existing routes, overlaying existing routes, adding capacity to existing routes, computerized signal systems, construction or reconstruction of bridges and construction of sidewalks and bike paths. The MPO has great flexibility in the use of its funds.	Projects included in both the MPO Transportation Improvement Program (TIP) and State Transportation Improvement Program (STIP) are eligible for funding, subject to certain conditions.	LaDOTD Road Design Section (225) 379-1303 http://www.sp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Road_Design/Pages/Urban_Systems.aspx
Local Road Safety Program (LRSP)	Low-cost proven safety countermeasures such as curve delineations, rumble strips, high friction surface treatments, pavement markings, signage, flashing beacons, intersection improvements, mini-roundabouts, and more. Projects that are prioritized in Local Road Safety Plans may also be funded.	Applications may be submitted year-round, with cutoff dates on December 31, March 31, June 30 and September 30.	Leo Marretta (225) 767-9122 leo.marretta@la.gov http://www.ltrc.lsu.edu/ltap/lrsp-project-applications.html
Section 402: State and Community Highway Safety Grants	Funding to create safety programs aimed at reducing crashes, deaths, injuries, and property damage. Can be used to fund bicycle and pedestrian projects as well as education and enforcement programs.	The next competitive cycle will occur in 2020 at the earliest.	Ken Trull (225) 925-6994 ken.trull@la.gov
Recreational Trails Program for Louisians (RTPL)	RTPL is administered by the Louisiana Office of State Parks, Division of Outdoor Recreation. RTPL provides funding for recreational trails in both urban and rural areas throughout the state. The program provides funds for all kinds of recreational trail uses, such as pedestrian uses (hiking, running, wheelchair use), bicycling, in-line skating, equestrian use, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles.	The next competitive cycle will occur in 2020 at the earliest.	Michael Domingue (225) 342-4435 mdomingue@crt.la.gov https://www.crt.state.la.us/louisiana-state-parks/grant-opportunities-for-outdoor-recreation/recreation-al-trails/

TABLE 6-4. POTENTIAL FUNDING SOURCES (CONTD.)

Funding Source	Eligible Activities	Grant Schedule	Contact Information/ Website
PRIVATE/NON-PROFIT			
Blue Cross and Blue Shield of Louisiana Foundation	Blue Cross and Blue Shield of Louisiana Foundation accepts grant applications that promote the wellness and well-being of Louisianans through health- or education-related causes. Multiple grant programs are available.	Letters of Intent are accepted quarterly.	Chloe Wiley (225) 298-7826 chloe.wiley@bcbsla.com http://bcbslafoundation.org/grant-programs/grants/
PeopleForBikes Community Grant Program	PeopleForBikes accepts grant applications from non-profit organizations with a focus on bicycling, active transportation, or community development, from city or county agencies or departments, and from state or federal agencies working locally. PeopleForBikes only funds projects in the United States. Requests must support a specific project or program, including bicycle facilities, amenities, and education initiatives.	The next competitive cycle will occur in 2020 at the earliest.	Zoe Kircoos (303) 449-4893 zoe@peopleforbikes.org https://peopleforbikes.org/grant-guidelines/
Baton Rouge Area Foundation	The foundation provides access to grants from a number of charitable partners. Awards in the past have been used for bicycle and pedestrian planning, programs, and amenities.	Varies depending on grant.	Lois Smyth (225) 387-6126 lsmyth@braf.org
American Walks Community Change Grants	Funded projects must demonstrate that they will show increased physical activity and active transportation in a specific community, work to engage people and organizations new to the efforts of walking and walkability, and demonstrate a culture of inclusive health. Projects will create healthy, active, and engaged communities that support walking as transportation, health, and recreation.	The next competitive cycle will occur in 2020 at the earliest.	Heidi Simon hsimon@americawalks.org https://americawalks.org/community-change-grants/

APPENDIX A: COMPLETE STREETS ORDINANCE

ORDINANCE NUMBER _____

AN ORDINANCE TO ADOPT A “COMPLETE STREETS”

POLICY IN DENHAM SPRINGS

WHEREAS, Denham Springs policy as stated in the Denham Springs Bicycle and Pedestrian Master Plan is to make city streets safe, comfortable and convenient for travel via walking, bicycling, motor vehicle and transit by adopting a Complete Streets policy; and

WHEREAS, increasing walking and bicycling offers the potential for greater accessibility and mobility, improved health, a more livable community, and a more efficient use of road space and resources; and

WHEREAS, the Complete Streets guiding principle is to design, operate and maintain streets to promote safe and convenient access and travel for all users, including residents who do not or cannot drive, such access to include sidewalks, bicycle lanes, shared-use paths and vehicle lanes; and

WHEREAS, other jurisdictions and agencies nationwide have adopted Complete Streets legislation including the U.S. Department of Transportation and communities in Louisiana; and

WHEREAS, Denham Springs will implement a Complete Streets policy by designing, operating and maintaining the transportation network to improve travel conditions for people walking, bicycling, using transit, and driving in a manner consistent with, and supportive of, the surrounding community; and

WHEREAS, Denham Springs recognizes the number of cost-effective improvements to existing roads that can increase access and safety, including crosswalks, bicycle lanes, signage, bulb-outs, on-street parking, street trees and changing the signalization of traffic lights; and

WHEREAS, Denham Springs will implement policies and procedures with the construction or reconstruction of transportation facilities to support the creation of Complete Streets including capital improvements and re-channelization projects, recognizing that all streets are different and in each case user needs must be balanced;

BE IT ORDAINED BY THE MAYOR AND THE CITY COUNCIL OF DENHAM SPRINGS, LOUISIANA, AS FOLLOWS:

Section 1.

Denham Springs will plan for, design and construct all new transportation improvement projects to provide appropriate accommodation for people of all abilities who walk, bicycle, use transit and/or drive, while promoting safe operation for all users, as provided for below.

Section 2. Definitions

The following words and phrases, whenever used in this ordinance, shall have the meanings defined in this section unless the context clearly requires otherwise:

1) “Bicycle Way or Bikeway” means any course or way intended specifically for the preferential use of bicyclists. Examples include bicycle lanes and shared-use paths.

2) “Complete Streets Infrastructure” means design features that contribute to a safe, convenient, or comfortable travel experience for users, including but not limited to features such as: sidewalks;

shared-use paths; bicycle lanes; automobile lanes; paved shoulders; accessible curb ramps; bulb-outs; crosswalks; refuge islands; pedestrian and traffic signals; and public transportation stops and facilities.

3) “Pedestrian Way or Walkway” means any course or way intended specifically for the preferential use of pedestrians. Examples include sidewalks and shared-use paths.

4) “Shared-Use Path” means a multi-use pathway for all non-motorized users including pedestrians and bicyclists.

5) “Street” means any right of way, public or private, including arterials, collectors, local roads, and roadways by any other designation, as well as bridges, tunnels and any other portions of the transportation network.

6) “Transportation Improvement Project” means the construction, reconstruction, retrofit, or alteration of any street, and includes the planning, design, approval, and implementation processes, except that

“Transportation Improvement Project” does not include routine maintenance such as cleaning, sweeping, mowing, spot repair or pavement resurfacing.

7) “Users” mean individuals that use streets, including people walking, bicycling, using transit, and/or driving, and people of all ages and abilities, including children, teenagers, families, older adults and individuals with disabilities.

Section 3. Requirements

The Denham Springs will implement the Complete Streets principles as follows:

- 1) Every transportation improvement project shall incorporate Complete Streets infrastructure including both bicycle and pedestrian ways sufficient to enable reasonably safe travel along and across the right-of-way for each category of users; unless one or more of these conditions exists and is documented:
 - a) People walking or bicycling are prohibited by law from using the roadway. In this instance, a greater effort may be necessary to accommodate people walking or bicycling elsewhere within the right-of-way or within the same transportation corridor.
 - b) The cost of establishing bikeways or walkways would be excessively disproportionate to the total cost of the transportation project. “Excessively disproportionate” is defined as exceeding twenty percent of the total cost.
 - c) Severe existing topographic, natural resource or right-of-way constraints exist that preclude construction of bicycle or pedestrian ways without incurring excessive costs.
 - d) Bicycle ways will not be required on local streets where the speed limit is 25 mph or less.
 - f) Pedestrian ways will not be required along local streets with fewer than three (3) dwelling units per acre or along rural roadways outside of urbanized areas, unless the respective roadway has been identified for pedestrian ways in the [City Bicycle and Pedestrian Master Plan] or another adopted plan.
 - g) The City Council issues a documented exception concluding that application of Complete Streets principles to a location is inappropriate because it would be contrary to public benefit and safety.
- 2) Pedestrian improvements and bikeways that have been identified as priorities in the Denham Springs Bicycle and Pedestrian Master Plan and any previous and subsequent planning documents shall be given particular consideration for implementation.
- 3) Bicycle ways shall be designed and constructed according to accepted design guidance, such as that included in the National Association of City Transportation Officials’ *Urban Bikeway Design Guide*, the Federal Highway Administration’s *Small Town and Rural Multimodal Networks* guide, the American Association of State Highway and Transportation Officials’ *Guide for the Development of Bicycle Facilities*, and the design guidelines included in the adopted [City Bicycle and Pedestrian Master Plan].
- 4) Sidewalks, shared-use paths, street crossings (including over and under passes), pedestrian signals, signs, street furniture, transit stops and other facilities, shall be designed, constructed, operated and maintained so that all pedestrians, including people with disabilities, can travel safely and independently.

- 5) As feasible, the City shall incorporate Complete Streets infrastructure into existing streets to improve the safety and convenience of users, and construct and enhance the transportation network for each category of users.
- 6) If the safety and convenience of users can be improved within the scope of pavement resurfacing, restriping or signalization operations on streets, such projects shall implement Complete Streets infrastructure where feasible.
- 7) The appropriate City departments shall review and develop proposed revisions to all appropriate zoning and subdivision codes, procedures, regulations, guidelines and design standards to integrate, accommodate and balance the needs of all users in all transportation improvement projects.

Section 4. Statutory Construction and Severability

- 1) This Ordinance shall be construed so as not to conflict with applicable federal or state laws, rules or regulations. Nothing in this Ordinance authorizes any City agency to impose any duties or obligations in conflict with limitations on municipal authority established by federal or state law at the time such agency action is taken.
- 2) In the event that a court or agency of competent jurisdiction holds that a federal or state law, rule, or regulation invalidates any clause, sentence, paragraph, or section of this Ordinance or the application thereof to any person or circumstances, it is the intent of the Ordinance that the court or agency sever such clause, sentence, paragraph, or section so that the remainder of this Ordinance remains in effect.
- 3) In undertaking the enforcement of this Ordinance, the Denham Springs is assuming only an undertaking to promote the general welfare. It is not assuming, nor is it imposing on its officers and employees, an obligation through which it might incur liability in monetary damages to any person who claims that a breach proximately caused injury.

Section 5.

That this Ordinance take effect and be in force thirty (30) days from and after passage as provided by law.