JAN 2019

ST. CHARLES PARISH
COMPREHENSIVE PEDESTRIAN & BICYCLE MASTER PLAN

FINAL REPORT
State Project No. H.012462

PREPARED FOR:

Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles, St. John, St. Tammany and Tangipahoa Parishes

PREPARED BY:

All South Consulting Engineers
652 Papworth Avenue
Metairie, Louisiana 70005

Dana Brown & Associates
1836 Valence Street
New Orleans, LA 70115

Barowka & Bonura Engineers & Consultants
209 Canal Street
Metairie, LA 70005

The contents of this report reflect the views of the author(s) who is (are) responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Regional Planning Commission, the State or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

23 U.S. Code § 409

Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

TABLE OF CONTENTS

ACKNOWLEDGMENTS

The St. Charles Parish Comprehensive Pedestrian & Bicycle Master Plan would not have been possible without the participation and support of many community representatives, public officials, and staff.

Parish President	Larry Cochran
Chief Administrative Officer	Billy Raymond
Executive Director of Procurement and Government Buildings	Darrin Duhe
Planning and Zoning Director	Michael Albert
Planning and Zoning Senior Planner	Marny Stein
Public Works Director	Clayton Faucheux
Public Works Engineer	Lee Zeringue
Parks and Recreation Director	Duane Foret
Grants Officer	Carla Chiasson
St. Charles Parish Public Schools Administrator of Safety, Security, and Emergency Preparedness	Kade Rogers
St. Charles Parish Public Schools Chief Plant Services & Security Officer	John P. Rome, Jr.
St. Charles Parish Sheriff's Office	Captain Pat Yoes
St. Charles Parish Council	
At Large, Division A	Councilwoman Wendy Benedetto
At Large, Division B	Councilman Paul J. Hogan, PE
District I	Councilman Terrell Wilson
District II	Councilwoman Mary K. Clulee
District III	Councilman Dick Gibbs
District IV	Councilman William "Billy" Woodruff
District V	Councilwoman Marilyn B. Bellock
District VI	Councilwoman Traci Fletcher
District VII	Councilwoman Julia Fisher-Perrier

The preparation of this report has been financed in part through grants from the Louisiana Department of Transportation and Development Highway Safety Department in accordance with State Project No. H.012462, funded by HSIPPEN federal funds.

This page intentionally left blank

This page intentionally left blank

0 EXECUTIVE SUMMARY

This page intentionally left blank

EXECUTIVE SUMMARY

Walking and bicycling for transportation and recreation is increasing in popularity across the nation. Several benefits accompany this trend, including increased health, decongestion of roadway traffic, and community economic benefits. Within St. Charles Parish, there is a strong demand to support these methods of transit by supplying infrastructure and safety measures. However, the parish's land development patterns, such as industrial campuses and railroad lines, have created barriers to implementation. The overall transportation network that exists today is designed to make vehicular traffic movement efficient without regard to non-motorized travelers. As a result, implementing expanded pedestrian and bicycle networks within the parish's existing roadway infrastructure must address safety concerns.

This plan used a comprehensive process that involved public participation, professional collaboration, and additional research. To obtain public input, the project team held workshops in three areas of the parish and administered a survey to identify the demands of residents and facility users. Industrial company representatives also voiced their security concerns about pathways that could be placed in close proximity to their sites. Additional meetings with parish officials also contributed to the plan.

Public, industry, and stakeholder engagement resulted in the emergence of three main goals for improving pedestrian and bicycle networks:

- Improving safety
- Increasing transportation options
- Spurring economic development

The project team conducted an existing conditions analysis of land development patterns, current design standards, obstacles to transportation, crash data, and existing facilities within the pedestrian and bicycle networks. The team performed a supplementary multi-modal analysis to recognize public benefits that would result from improved access management through additional transportation modes and connections among modes. Resulting network additions and improvements were developed and prioritized to match identified community needs and the project goals. The team's recommendations propose parish-wide treatments to existing routes, additional locations for pedestrian and bicycle routes, intersection safety improvements, and estimated construction and maintenance costs. In Section 5, priority improvement projects located in Table 19 were extracted from the comprehensive list in Table 20 to highlight projects that are expected to be the lowest in costs or generate the highest public benefits.

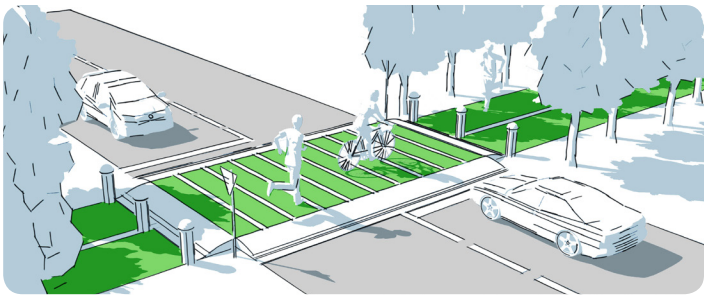


Figure 1 - Illustration of a Multi-Modal Transportation Intersection

The report also details potential constraints to implementation. Strategies to facilitate the implementation of proposed facilities and programs that support safer walking and bicycling are discussed, including potential funding sources, enforcement and education approaches, the need for updated standards and policy changes, and a plan for parish coordination and programming going forward. Implementation of proposed pedestrian and bicycle facilities requires a long-term approach, wherein available funding, other roadway projects, and private developments will inform the pace at which improvements are built. Capital expenditures, which are funds used to improve existing or implement new facilities, will be necessary to implement the projects and thereby meet the Parish's goals for pedestrian and bicycle transportation networks.

The St. Charles Parish Comprehensive Pedestrian & Bicycle Master Plan is a framework for the parish to become more multi-modal, walkable, bikeable, livable, healthier, and safer for its residents.

This page intentionally left blank

1 INTRODUCTION

This page intentionally left blank

1. INTRODUCTION

Figure 2 - Hale Boggs Memorial Bridge in Luling

Overview

The primary goal of the St. Charles Parish Comprehensive Pedestrian & Bicycle Master Plan is to develop a complete framework for pedestrian and bicyclist circulation at a parish-wide level that will improve safety and increase access and mobility opportunities. The plan establishes a hierarchy of facility types dependent on site-specific conditions that build upon the existing pedestrian and bicycle networks of St. Charles Parish.

The scope of this plan includes the establishment of goals and objectives for improved transportation, an inventory of existing conditions that impact pedestrian and bicycle infrastructure, an inventory of existing networks across the parish, a compilation of pedestrian and bicycle incident reports and locations, documented efforts of public and stakeholder engagement, recommendations based on criteria and facility types, and suggested strategies for implementation.

The approach used to develop the plan involved reviewing previously adopted Parish Council master plans with significant pedestrian and bicycle policy or elements, dividing the parish into three sub-areas for distributed analysis, and following a comprehensive planning process.

The St. Charles Parish Comprehensive Pedestrian & Bicycle Master Plan will serve as a reference and guide for future improvements to pedestrian and bicycle infrastructure in St. Charles Parish. The plan proposes new networks and improvements to existing networks within the parish, with emphasis on locations where accidents involving pedestrians or bicyclists have occurred. Data and maps contained within this study can be reviewed independently as a resource for additional projects. This plan serves as a starting point for understanding and addressing the needs of pedestrians and bicyclists in the parish and, as a result, realizing the benefits that the parish will receive from continuous use by these facility users.

Pedestrian & Bicycle Master Plans

A comprehensive master plan is created through collaboration among citizens, planners, and community leaders, and guides local governments and citizens in future development. A comprehensive pedestrian and bicycle master plan is a related, specialized plan that follows a similar process, while guiding the development of pedestrian and bicycle infrastructure and programs.

St. Charles Parish Comprehensive Pedestrian & Bicycle Master Plan

The purpose of the St. Charles Parish Comprehensive Pedestrian & Bicycle Master Plan , also referred to here as the Pedestrian & Bicycle Master Plan, is to improve safety of the existing transportation network for non-motorized users and maximize opportunities for circulation.

St. Charles Parish covers over 400 square miles of land, located on both banks of the Mississippi River. The parish's roadway system totals approximately 4,500 miles, yet less than two percent of road mileage include sidewalks (43 miles) or bicycle routes (31 miles). Current crash data suggests that one in five fatal vehicular crashes in St. Charles Parish result in the death of a pedestrian or bicyclist. These statistics alone reinforce not only the need for additional routes for non-motorists, but also improvements in quality and safety of the existing facilities. By expanding the networks of these facilities, additional transportation and recreational opportunities will be available to St. Charles Parish.

The expanded networks are envisioned as a comprehensive system of paths, trails, and shared-use routes. Increasing the presence of multi-modal transportation infrastructure in the parish will benefit all users and result in an improved awareness of roadway sharing for motorists.

The resulting pedestrian and bicycle master plan offers a tool that can strategically guide future capital investment and suggests policy, to improve and expand infrastructure for walking and bicycling along and across roadways where people desire to travel but cannot safely do so today.

Figure 3 - Location Map of St. Charles Parish

Study Area

This project encompasses the entirety of St. Charles Parish. St. Charles is bordered to the north by Lake Pontchartrain, to the east by Jefferson Parish, to the south by Lafourche Parish, and to the west by St. John the Baptist Parish. Within St. Charles Parish are the following areas: Ama, Bayou Gauche, Boutte, Des Allemands, Destrehan, Hahnville, Luling, Montz, Norco, Paradis, Killona, New Sarpy, Ormond, and St. Rose.

Given that a large portion of the parish consists of surface water and wetlands, which lack virtually any form of infrastructure, the project team restricted the study to areas where land is currently developed and habitable or where future development may occur. To facilitate the planning process, the parish was divided into East Bank, West Bank, and Bayou sub-areas, using logical geographical boundaries.

The East Bank sub-area encompasses the northern part of the Parish, which is on the eastern bank of the Mississippi River. Neighborhoods in the East Bank sub-area include St. Rose, Destrehan, Ormond, Norco, New Sarpy, and Montz.

The West Bank sub-area includes areas on the west bank of the Mississippi River that are north of LA 3127 and east of the I-310/US Highway 90 interchange. Neighborhoods in the West Bank sub-area include Ama, Luling, Boutte, Hahnville, and Killona.

The Bayou sub-area comprises the southernmost portion of St. Charles Parish. It contains communities along the US Highway 90 corridor and LA 306, and is bordered by Lafourche Parish to the south, Interstate 310/Highway 90 intersection and Boutte to the north and east Neighborhoods in the Bayou sub-area include Des Allemands, Paradis, and Bayou Gauche.

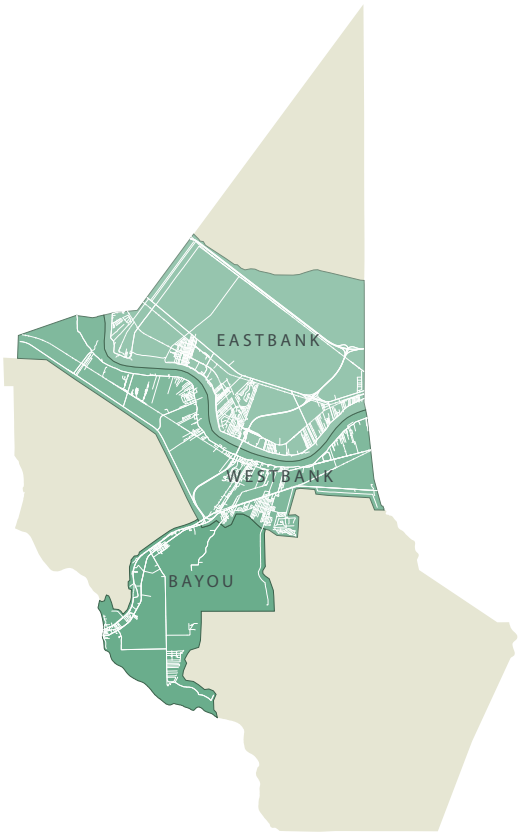


Figure 4 - Sub-Areas Map of St. Charles Parish

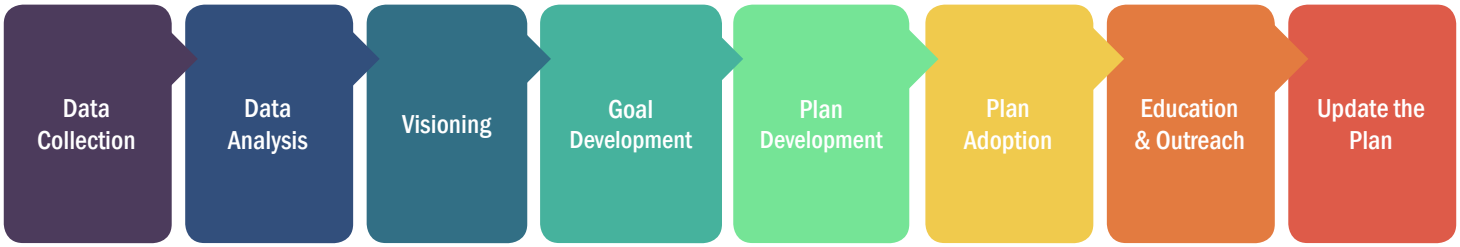


Figure 5 - Planning Process Flowchart

Planning Process

In order to ensure that the plan was developed in a timely manner and that its goals are valid, the project team followed an interactive design approach. This approach allowed for the plan to evolve naturally over the course of the study, while preventing potential oversight of key opportunities.

Prior to beginning any data collection or analysis, a Project Steering Committee (PSC) was established to assist in further guiding the study. The PSC and its members are discussed in greater detail in Section 4 (Engagement).

The project team began with a thorough analysis of the existing conditions of the parish, focusing on existing transportation routes and the location of traffic incidents that involve pedestrians or bicyclists. The project team also reviewed data on zoning, land use, topography, population density, and other factors affecting transportation.

The collected data were used in combination with field measurements, information gathered from stakeholders, and feedback from public workshops to generate maps and conduct an analytical study. These efforts produced comprehensive documentation of the parish's existing conditions, potential assets, opportunities, and constraints. The project team used this documentation to identify locations for proposed improvements and potential expansion of existing pedestrian and bicycle networks.

The project team reviewed, discussed, and revised these proposed improvements based on feedback from the PSC and the general public. Finally, the team identified potential strategies to assist the parish in implementing the plan's proposed improvements.

Previous Studies & Related Documents

This study references the following reports and uses them as planning precedents. These documents substantiate the need to improve upon existing multi-modal transportation infrastructure, and, due to their assessment of or similarity to the conditions of St. Charles Parish, offer a guideline to address challenges that the study area presents.

Louisiana Complete Streets Update 2017

Produced by the Louisiana Department of Transportation and Development (LADOTD), this update outlines state-specified goals for the inclusion of Complete Streets policies on state roadways. It encourages the implementation of policies and offers guidelines on the types of facilities that are appropriate for state roadways, and encourages (but does not require) Complete Streets implementation. Where applicable, LADOTD defers to the Complete Streets policy of the local municipality.

St. Charles Parish 2030 Comprehensive Plan

The St. Charles Parish 2030 Comprehensive Plan (Plan 2030) was adopted by the Parish on June 20, 2011. Elements addressed in the plan include: Economic Development, Land Use, Housing and Community Character, Infrastructure, Community Facilities, Parks and Recreation, Natural and Cultural Resources, and Transportation. This plan supports three general transportation goals stated in Plan 2030: to "provide a variety of transportation choices and options," "to increase connectivity between destinations," and to "apply a 'livable community' perspective when addressing transportation needs." (94). A specific action item from Plan 2030, TR3, lays out the basis for a comprehensive evaluation and

plan for non-motorized transport, with an aim to provide “pedestrian and bicycle mobility throughout the Parish, with expanded provision of sidewalks, paths, and trails and encouragement of bicycle and pedestrian-friendly streets and land use and development patterns” (99).

Paul Maillard Road Corridor Revitalization Plan

The Paul Maillard Road Corridor Revitalization Plan was completed in 2014 and adopted by the Parish in December 2015. It makes recommendations for land use and housing, economic development, infrastructure and public spaces, and transportation. The report sets forth seven transportation strategies for Paul Maillard directly related to the recommendations of the Pedestrian & Bicycle Master Plan. It aims to:

- Reconstruct LA 52 to include a Complete Streets cross-section
- Extend Complete Streets improvements beyond LA 52
- Improve accommodations for pedestrians and bicyclists to cross LA 52
- Create a network of recreational trails to interconnect neighborhoods, community facilities, and the LA 52 corridor
- Initiate a series of policy initiatives to support the Complete Streets approach (16)

St. Charles Parish Parks & Recreation Master Plan

The Parks and Recreation Master Plan was last updated in 2012. It provides guidance for the “development of an interconnected, parish-wide system of parks, recreational facilities and programs, and public open spaces” (1). It also identifies the need for comprehensive networks that will create connections between properties maintained by the Parks and Recreation Department. Survey analysis from this report shows overwhelming residential support for expansion and improvement to the existing pedestrian and bicycle transportation system.

Conclusion

Walking and bicycling for transportation and recreation have become increasingly popular in recent years. As a result, there is a growing demand by pedestrians and bicyclists for additional resources. This plan defines specific treatments for roadways, intersections, and additional facilities to create a well-connected overall network that people can use for walking and bicycling for recreation or transportation. This plan is the result of a multidisciplinary effort by the project team. The plan not only complies with and supports the objectives of previous planning work in St. Charles Parish but expands upon those plans by applying recommendations and strategies and fulfilling previously identified needs. The plan should inform and guide Parish officials, private/public land developers, and LADOTD in the implementation of transportation improvement projects and programs.

This page intentionally left blank

2 PEDESTRIAN AND BICYCLE MASTER PLAN VISION AND GOALS

This page intentionally left blank

2. PLAN VISION AND GOALS

Vision Statement

The vision of the St. Charles Parish Comprehensive Pedestrian & Bicycle Master Plan is to make walking and biking feasible and safe for all residents, through targeted improvements to infrastructure, programming, and enforcement.

Pedestrian & Bicycle Master Plan Goals

The project team developed the goals for the Pedestrian & Bicycle Master Plan in collaboration with the Project Steering Committee, stakeholders, and the general public. They are intended to support the vision for pedestrian and bicycle transportation in St. Charles Parish.

- Goal One: Improve safety
- Goal Two: Increase transportation options
- Goal Three: Spur economic development

The goals identified within the Pedestrian & Bicycle Master Plan align with those of the LADOTD Complete Streets Policy (2010), the St. Charles Parish 2030 Comprehensive Plan, the St. Charles Parish Parks and Recreation Master Plan (2012), and the Paul Maillard Road Corridor Revitalization Plan (2014). The project goals and their related objectives are presented on the following pages. Proposed improvements to the transportation network that can realize these goals are provided in Section 5 (Proposed Improvements), and implementation strategies and recommended policy changes to encourage their establishment are provided in Section 6 (Implementation).

GOAL 1 | IMPROVE SAFETY

The primary goal of the Pedestrian & Bicycle Master Plan is to achieve greater safety for non-motorized users of the transportation network through strategic, consistent, and coordinated facility improvements, programming that includes ongoing education of all ages, and enforcement. Through effective planning and design of pedestrian and bicycling facilities, the Parish seeks to reduce crashes, injuries, and fatalities by creating safe walking and bicycling environments.

The project team reviewed crash data and collaborated with residents and industries to identify the most dangerous locations for non-motorized travel. The team then compared crash locations and existing facilities to determine significant nodes and neglected road segments that its recommendations should include.

The transportation network in St. Charles Parish lacks safe and practical routes for people to walk and bike. Facility design plays an important role in creating a safe environment, but a large responsibility also falls on motorists, pedestrians, and bicyclists to act in a lawful and safe manner. The parish needs additional education to inform and prepare residents about safe behavior for all road users and enforcement to follow-up when rules are not being adhered to.

Figure 6 - Safety Signals

Goal One Objectives

- Create strategic, consistent, and connected pedestrian and bicycle networks
- Improve intersections to provide a safe environment for pedestrians and bicyclists
- Involve residents to enhance awareness of travel laws and appropriate behavior by all roadway users
- Educate drivers, pedestrians, and bicyclists how to use the network together safely
- Improve crash data reporting and mapping to inform preventive/proactive safety strategies

Figure 7 - Rapid Flash Beacon

GOAL 2 | INCREASE TRANSPORTATION OPTIONS

The roadway network in St. Charles Parish is designed primarily for automobiles, and walking and bicycling are not yet viable means of transportation due to a lack of safe and interconnected networks and an absence of end-of-trip facilities.

Connections between neighborhoods and major destinations can be enhanced through coordinated land use and transportation planning. A shift towards a multi-modal transportation system that plans for and supports various transportation modes, not solely vehicular, can increase transportation options for residents. This shift from prioritizing high speeds, wide lanes, and other circumstances that are singularly advantageous for vehicular travel will require the Parish to not only revisit its standards but also to demand abidance and enforcement by those responsible for decision making on non-parish-owned roads. Recommended policy changes are listed in Section 6 (Implementation).

Investments in walking and biking infrastructure are crucial for making transportation more equitable by making transportation accessible and affordable transportation for all residents, particularly for those who do not own a car or are physically impaired. The Americans with Disabilities Act (ADA) of 1990 applies to public and private transportation and lays out policies that require transportation systems to be accessible for all users regardless of physical disabilities. Guaranteeing the presence of ADA accessible facilities will provide physically-impaired users with an environment that offers confidence of safety during travel and recreation.

Goal Two Objectives

- Expand community-oriented pedestrian facilities
- Expand and connect local and regional networks of bicycle facilities
- Improve transportation equity, including ADA accessibility
- Provide and expand existing pedestrian and bicycle access to public facilities
- Provide performance monitoring to ensure continuous support of multi-modal facilities
- Provide neighborhood access to parks, schools, and shopping
- Provide end-of-trip facilities at trailheads and destinations
- St. Charles Parish must establish data-driven performance measures and targets for implemented projects. These measures and targets will allow the Parish to monitor the effect of its transportation investments and improve the transportation decision-making process.

Figure 8 - Neighborhood Sidewalks

Figure 9 - High-Visibility Crosswalk

GOAL 3 | SPUR ECONOMIC DEVELOPMENT

Bicycle and pedestrian corridors have proven to provide economic development benefits in areas with highly concentrated traffic. Coffee shops, bakeries, bike shops, and cafes often open along major pedestrian and bicycle corridors. Increased investment in pedestrian and bicycle projects can serve as catalysts for new development and revitalize commercial areas or neighborhoods. This approach would optimize the potential for a return on the parish's investment in non-motorized facility improvements.

Facilities for pedestrians and bicyclists also generate economic returns by improving health and safety, environmental conditions, raising property values, and enticing visitors to the parish. Through investments to infrastructure, St. Charles Parish can maximize its economic competitiveness with neighboring parishes by creating more attractive communities and by offering regional connections for use by the tourism industry. Major local precedents for these types of implementation are the Tammany Trace Bike Trail in St. Tammany Parish and the Lafitte Greenway in Orleans Parish.

Figure 10 - Bicycle Corridor

Goal Three Objectives

- Use transportation investments to support economic development
- Increase quality-of-life through walkable and bikeable communities
- Optimize returns on investments of bicycle and pedestrian facility improvements
- Increase active transportation investment to meet long-term needs
- Become a regional destination for bicycling
- Improve livability of communities
- Attract younger generations

Figure 11 - Pedestrian Corridor

Complete Streets Ordinance

In addition to the Pedestrian & Bicycle Master Plan, this project also involved development of a draft Complete Streets ordinance for St. Charles Parish. The ordinance was a collaborative effort by the project team with the St. Charles Parish Departments of Public Works and Planning and Zoning and is intended for consideration and adoption by the Parish Council. As a result, this plan incorporates Complete Streets principles and should continue to be guided by these principles, in addition to the ordinance, if adopted.

The ordinance will facilitate ensuring that the proposed Pedestrian & Bicycle Master Plan improvements will be implemented in an accurate and timely fashion and that street projects, whether they be public or private projects, address pedestrian and bicyclist needs as set forth in the plan. Implementation can be made possible by providing parish officials with the legal means for requiring the development of policies and programs that account for the interest of all forms of transportation, not just vehicular.

In 2010, the State of Louisiana adopted a Complete Streets Policy, which is intended to guide projects under the purview of LADOTD. Adoption of a Complete Streets policy in St. Charles Parish, through ordinance, would outline fundamental direction to guide transportation projects and land use development decision-making that impact the transportation system. Local policy can guide the retrofit and reconstruction of locally-owned roads, future maintenance, address the interaction with state-owned roads, and influence projects within the public domain. While LADOTD has its own Complete Streets policy, the department considers the policy of local municipalities when one is in place. Since many roadways in St. Charles Parish are state-owned roads, the state's policy, combined with a newly adopted parish Complete Streets policy, can be a valuable tool in meeting the vision of the Pedestrian & Bicycle Master Plan.

What is Complete Streets?

A Complete Streets policy is based on four principles, as offered by the National Complete Streets Coalition:

- Create a balanced transportation system that serves users of all abilities and all modes of transportation
- Provide and improve means for safe access to destinations
- Create pedestrian- and bicycle-friendly environments
- Provide true alternatives to driving

A Complete Streets policy encourages integrated planning of roadways to provide for users of all ages and abilities, including pedestrians and bicyclists, as well as motor vehicles. Parishes and cities that adopt a Complete Streets policy encourage, and in some cases require, designers and engineers to adopt a more holistic approach to right-of-way design by improving transportation, drainage, and utility infrastructure with all users in mind.

A copy of the draft St. Charles Parish Complete Streets Ordinance is located in Appendix D.

Conclusion

Goals and their objectives intend to improve the experiences of pedestrians and cyclists. The project team developed goal objectives to guide improvements to safety, transportation options, and the economy. The plan's goals are in alliance with the State's Complete Streets Ordinance and include components of Complete Streets designs to promote the recommendation of a Parish ordinance.

This page intentionally left blank

3 EXISTING CONDITIONS

This page intentionally left blank

3. EXISTING CONDITIONS

This section further describes St. Charles Parish development patterns and its existing pedestrian and bicycle facilities. It incorporates an assessment of various characteristics relevant to bicycle planning, including crash data and potential walking and biking destinations.

Land Use Development

Land in St. Charles Parish was originally surveyed in arpents, which are French units of land and area comparable to the English acre. A North American arpent has a linear measurement of 192 feet and areal measurement of 0.85 acres. The arpent system was used to divide land located along the Mississippi River by measuring 40 lineal arpents inland from the river, allowing landowners to have valuable riverfront access. Today, the arpent system is reflected in road patterns and neighborhood layouts along the Mississippi River.

Development patterns in rural parishes along the Mississippi River can be traced to their original land uses during the 18th century. Starting with the first German settlers, agriculture was the prominent industry in St. Charles Parish. Indigo, rice, corn, cotton, vegetables, and later sugar cane were grown here. Produce was mainly transported via the Mississippi River. Logging, which also relied on access to the river for transportation, was also a major economic driver. At that time, virtually all residents lived along the Mississippi River.

Railroads began operating in the parish in the mid-1800s. Spur, or secondary, lines were built directly between the main rail line and local industrial sites. Plantation and business owners took advantage of this industrial infrastructure arrival for the trading of products and materials.

In the early 1900s, plantations and communities along the Mississippi River began to be replaced by industrial complexes, which continued to use the river for transporting goods. Industry employees lived in villages near the refineries, creating populated areas such as Norco, which is named after the New Orleans Refinery Company.

Prior to the 1900s, roadways were mostly constructed of compacted soil and were often impassable during poor conditions. In 1915, the Old Spanish Trail Project attempted to connect California to Florida with paved roads. Paving in Louisiana, including St. Charles Parish, was not completed until 1919. Employee villages, subdivisions, and developed areas that were established throughout the early- to mid-20th century had open swale drainage along the roadways, much of which still exists.

Once the State of Louisiana began to commission highways, communities and subdivisions were built in areas that were no longer associated with the river or railroads. Ormond Boulevard now connected the community along the river to Highway 61, and new subdivisions were created, such as those built around the golf course at Cypress Lakes. Highway 90 and Highway 631 helped to expand the West Bank, connecting isolated communities such as Paradis, Bayou Gauche, and Des Allemands to those located along the Mississippi River, and allowed the development of additional subdivisions such as Mimosa, Lakewood, and Willowdale. The Mississippi River was crossed only by ferries or bridges located in other parishes until the Hale Boggs Memorial Bridge opened in 1983, connecting the parish on both sides of the river.

In recent decades, the population of St. Charles Parish has expanded due to commercial and industrial job growth along the Mississippi River, and (to a lesser extent) the discovery of oil in other parts of the parish.

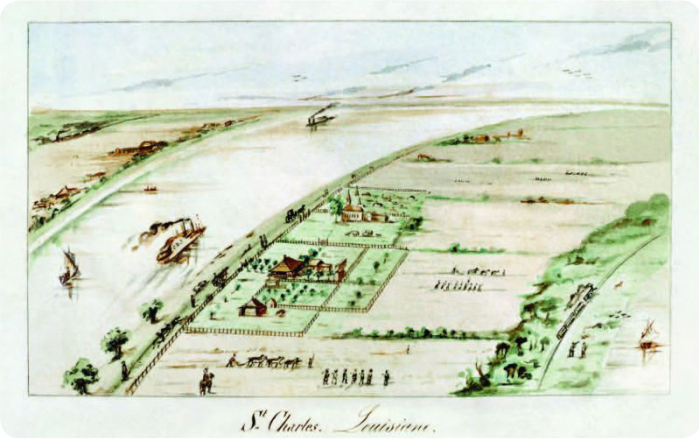


Figure 12 - 1859 Sketch of St. Charles Parish

Figure 13 - Entergy's Waterford 3 Campus on the West Bank, facing Upriver

Figure 14 - Shell Norco Neighborhood on the East Bank, facing Downriver

Destinations

Pedestrian and bicycle facilities are multi-functional, and while they are sometimes used solely for exercise or recreation, they may also be used as transportation to and from local destinations. Trip destinations such as neighborhoods, parks, schools, libraries, government and other institutional buildings, commercial areas, and industrial areas are key nodes within a transportation network. These nodes influence the use patterns and conductivity of a system and should be considered when identifying opportunities for improving the system. The Pedestrian & Bicycle Master Plan identifies connections that will benefit the public by increasing access to these nodes.

Destinations that are located in close proximity to busy service areas or establishments, like schools and shopping centers, will be the most likely to benefit from alternative, non-motorized infrastructure improvements such as short- and long-term bike parking and wayfinding signage offering destination, direction, and distance information.

Public and stakeholder feedback on destinations is discussed in Section 4 (Engagement) and is later considered in Section 5 (Proposed Improvements) in relation to prioritizing roadway treatments for improvements to the overall transportation network. Maps in Appendix B display destination locations in the East Bank, West Bank, and Bayou sub-areas.

Obstacles to Non-Motorized Transportation

As a result of historical land development patterns and planning, St. Charles Parish currently has a transportation system primarily designed to move motor vehicles through the largely rural parish at higher speeds. High speed, high-volume traffic within the system negatively impacts the safety and comfort of individuals walking and biking. While limited pedestrian and bicycle facilities are in place, most roadways in the parish discourage non-motorized movement. Vehicular and non-vehicular traffic operating speeds in the same corridors without appropriate treatments increases the frequency and severity of conflicts.

Industrial Land Uses

East Bank Sub-Area

The most prominent constraint for pedestrians and bicyclists within the East Bank sub-area is industrial complexes that cover large sections of land and which prohibit public access. These facilities create barriers within the roadway network. East Bank complexes such as the Shell Norco Plant separate neighborhoods and fragment the circulation system of the parish in numerous locations. Travelers must often access state highways such as River Road or Highway 61 to circumvent expansive industrial land uses.

West Bank Sub-Area

The West Bank sub-area suffers from the same challenge of industrial complexes segregating communities along the river. One example is Killona, which is isolated from the rest of the parish by the plants located in Taft and can only be accessed within the parish by LA Highways 18 or 3127.

Bayou Sub-Area

No high-impact industrial land uses were identified within the Bayou sub-area.

Railroads

Railroad development has also contributed to limiting non-motorized transportation. Five railways run through St. Charles Parish, with three on the East Bank and two on the West Bank. While this may support significant industrial productivity, roadway crossing locations are infrequent, hampering circulation between destinations and communities. In addition, they are not designed to comfortably accommodate people bicycling or people walking. Highway/railroad intersections present hazards to both but could be retrofitted for a smoother and safer crossing experience.

East Bank Sub-Area

The Canadian National (CN) Railway runs east-to-west following the Mississippi River and divides Norco. Here, only Goodhope Street and Apple Street provide roadways that cross over the tracks. This line also transects New Sarpy where Terrace Street, Harding Street, and Vans Lane have the only railroad crossings. Within St. Rose, Riverbend Drive, Almedia Road (LA Highway 50), and St. Rose Avenue (LA Highway 626) are the only roads with railroad crossings. Aside from a commercial area off US Highway 61, most of the St. Rose community is located between the CN tracks and the Mississippi River. In St. Rose, the lack of sites where railroad crossings can be placed as part of expanded pedestrian and bicycle paths creates issues for networking throughout the parish. The Kansas City Southern (KCS) track crossing at Ormond Boulevard, which includes a bike path, is one of the very few

Figure 15- Ormond Boulevard Crossing on the East Bank, facing River Road

crossings in the area that can be used by pedestrians and bicyclists.

The Amtrak rail line runs along Interstate 10 and Lake Pontchartrain. The line is predominately on a raised bridge over water and swamp. Since this line is isolated from public access, this plan does not consider its right-of-way for bicycle and pedestrian paths.

West Bank and Bayou Sub-Areas

On the West Bank, the Canadian National railroad runs parallel with the river and divides portions of Luling. Barton Ave (LA 3060), Davis Drive, Sugarhouse Road, Paul Maillard Road (LA 52), Gassen Street, and Ashton Plantation Boulevard provide the only crossings. This same line also divides a portion of Killona, with Adams Street and Killona Drive being the only roads with crossings through the corridor. Hahnville and Ama, except for the Fashion Plantation neighborhood, are located between this railroad line and the river. South Fashion Boulevard, accessible only by LA 3127, dead ends at the south side of the CN tracks. On the north side of the tracks, Duhe Drive, accessible by LA 18 (River Road), dead ends. The original road was bisected by the CN railroad and do not currently connect; roads end directly across from each other on opposite sides of the railroad corridor.

Also on the West Bank and into the Bayou sub-area, the Burlington Northern Santa Fe (BNSF) railroad line runs parallel to Highway 90. The only public roadways

providing track crossings are Ridge Road in Des Allemands, Pit Road in Paradis, Paul Maillard (LA 52) in Luling, and Barton Avenue (LA 3060) in Luling. Up the Bayou Road in Des Allemands crosses under the railroad tracks. The BNSF line presents obstacles for pedestrian and bicyclists traveling between the Mississippi River Trail and neighborhoods south of Highway 90, such as Mimosa and Willowdale. Only two roadways give the communities of Luling and Boutte access over the tracks, further exacerbating the lack of connectivity.

Roadways

Most roads that are owned and maintained by the parish are located within residential neighborhoods and do not have sidewalks. The lack of sidewalks in subdivisions developed prior to the 1994 Ordinance creates barriers to walking and discourages parents from allowing children to walk to school or to community activity centers such as libraries and parks. Further, rapid and discontinuous subdivision development over the last several decades has further isolated neighborhoods from each other and from non-vehicular connections to destinations. A lack of local road network connectivity forces users to travel on state routes to move between neighborhoods and to connect to destinations both within and outside of St. Charles Parish.

All major highways in St. Charles Parish are owned and maintained by the state. These highways range from the multi-lane interstate system to two-lane minor collector roads. Many of the proposed facilities in this plan utilize portions of rights-of-way owned by the state, as these are typically wider than local roads and are the prominent connectors throughout the parish. Improved discussion, coordination, and cooperation between the Parish and State is imperative to jointly consider zoning, driveway permitting, speed, and appropriate facilities to create safer routes for all residents.

State highways are the backbone of the Parish's transportation network, yet they currently present many obstacles to walking and biking. Routes like US 90 are high speed, lack sidewalks and appropriate bicycle facilities, and are unfriendly to people who need to cross the street on foot or by bike. In addition, there are few controls to minimize the width of commercial driveways or prohibit businesses using state right-of-way as an extension of parking areas. Wide and frequent commercial driveways in addition to illegal parking on the right-of-way increases exposure, reduces functional right-of-way for potential walking and biking facilities, and adds to unsafe conditions for non-motorized users in state-owned corridors.

For roads and highways that are not under the jurisdiction of St. Charles Parish, this document can be used to guide state roadway improvements using the Pedestrian & Bicycle Master Plan goals set forth herein. Many of the proposed improvements are within the River Road, US Highway 61, and LA Highway 90 rights-of-way.

East Bank Sub-Area

On the East Bank of St. Charles Parish, Interstate 10 bisects from St. John the Baptist Parish to Jefferson Parish. Interstate 310 runs south from Interstate 10 and crosses the Mississippi River via the Hale Boggs Memorial Bridge. US Highway 61 nearly parallels Interstate 10. LA Highway 48, also known as River Road, follows the levee of the Mississippi River, connecting the parishes of Jefferson and St. John the Baptist. LA Highways 628, 48, 627, 626, and 50 all connect US Highway 61 to River Road.

West Bank Sub-Area

On the West Bank of St. Charles Parish, Interstate 310 runs from Hale Boggs Memorial Bridge and terminates at US Highway 90. Within this sub-area, US Highway 90 runs from Interstate 310 to Jefferson Parish. LA Highway 18, also known as River Road, follows the levee of the Mississippi River, connecting the parishes of Jefferson and St. John the Baptist. LA Highways 52 and 3060 connect US Highway 90 to LA Highway 18. LA Highway 3127 runs from Interstate 310 to St. John the Baptist Parish and is connected to River Road by LA Highways 3141, 3142, and 3160.

Bayou Sub-Area

Within the Bayou area of St. Charles Parish, US Highway 90 runs south from Interstate 310 to Bayou Des Allemands (Lafourche Parish boundary) to the south. LA Highway 631, also known as Old Spanish Trail, parallels most of US Highway 90 and crosses Bayou Des Allemands into Lafourche Parish. LA Highways 632 and 306, the only means to access the Bayou Gauche area, run south from US Highway 90. LA Highway 632 also connects a portion of the Sunshine Village area to Highway 306, and 632 connects US Highway 90 to LA Highway 631. LA Highway 633 is the only roadway to connect the Magnolia Ridge area to the rest of the parish, as it directly ties to US 90. LA Highway 635 connects Old Spanish Trail to US Highway 90.

Drainage

Drainage in St. Charles is collected along road rights-of-way, either by subsurface drainage or open swale and canal drainage. Open swale drainage, a more cost-effective alternative to subsurface drainage, is most common throughout the parish. However, open drainage located next to a roadway complicates improving or adding infrastructure and restricts the ability to expand the roadway section, barring significant costs. Expanding the roadway's width, adding a sidewalk, or adding a bike path within the right-of-way usually requires converting the swale to subsurface drainage to allow the new facility to be placed on top.

Water Bodies

The Mississippi River bisects the parish and is currently an impassible obstacle for pedestrians and bicyclists. The only means to cross the river within St. Charles Parish is the Hale Boggs Memorial Bridge, which is part of the U.S. Interstate Highway System. Under federal law, pedestrians and bicyclists are not allowed to use the Interstate, forcing non-motorized travelers to detour to neighboring parishes to cross the river, eithera approximately 15 miles east via the Huey P. Long Bridge in Jefferson Parish or 25 miles east via the Canal Street Ferry in Orleans Parish. Other barriers to connectivity include the Bonnet Carré Spillway, which separates the community of Montz from the rest of St. Charles Parish. The only access points from which a person can travel to and from Montz within the parish is Highway 61 or River Road/ Spillway Road. Levees have long been constructed and maintained to protect developed land from river flooding. The U.S. Army Corps of Engineers (USACE) monitors levees along the Mississippi River and Bonnet Carré Spillway. The USACE allows vehicles to use the limestone roadway on top of the east levee along the Spillway, known as Lower Guide Levee Road. This roadway extends from US Highway 61 to Lake Pontchartrain, where Wetland Watchers Park is located.

Pedestrian & Bicyclist Incidents

Crash data is collected by the State of Louisiana for all vehicular incidents and made available to the Regional Planning Commission. In accordance with LADOTD's "Destination Zero Deaths" policy vision, which aims to reduce non-motorized fatalities by 50% by 2030, this plan identifies key problem areas and suggests predictive and systemic solutions.

Crash data includes various levels of impact severity. Severities range in the following order from most to least damaging:

- Fatal: Resulted in death
- Severe: Incapacitating injury
- Moderate: Non-incapacitating injury
- Complaint: Possible injury
- No injury

The project team obtained data on pedestrian and bicycle injuries and fatalities for analysis and used this data to geolocate crashes and identify common "hot spots" where conflict between vehicles and non-motorists occurred between 2013 and 2016, the most

recent years for which data was available as the study began. These locations were consequently prioritized for safety improvements, presented in Section 5. Crash data is presented in the following tables and on the pedestrian and bicycle incident maps.

Crash Data Findings

Vehicular crashes that involved a pedestrian in St. Charles Parish are listed by location, category of injury by severity, and year in Table 1.

Vehicular crashes that involved a bicycle in St. Charles Parish are listed by location, category of injury by severity, and year in Table 2.

LOCATION	SEVERITY	YEAR
Magnolia Ridge Road near Highway 90	Fatal	2016
Ruth Street	Fatal	2016
Saint Rose Avenue near Iris Lane	Fatal	2014
Highway 90 near S Kenner Avenue near Jefferson Parish line	Fatal	2013
Old Spanish Trail near Pit Road near I 310 overpass	Fatal	2013
Airline Highway near Evangeline Road	Severe	2016
Airline Highway near Evangeline Road*	Severe	2016
Beaupre Drive near Cottage Drive	Severe	2015
Paul Maillard Road near Luling Avenue	Severe	2015
Highway 90 near Kadak Lane	Severe	2015
Keller Street near River Road	Severe	2014
Old Spanish Trail near JB Green Road	Severe	2013
Old Spanish Trail near JB Green Road*	Severe	2013
Old Spanish Trail near Ellis Lane	Severe	2013
Evangeline Lane near Plantation Road	Moderate	2016
Heather Drive near St. John Street	Moderate	2016
Spruce Street near Magnolia Avenue	Moderate	2016
Paul Maillard Road near N. Oak Court	Moderate	2016
Airline Highway near Evangeline Road	Moderate	2016
Airline Highway near Evangeline Road*	Moderate	2016
Ormond Meadows Drive	Moderate	2015
Highway 90 near Magnolia Avenue	Moderate	2015
Old Spanish Trail near Sellers Lane	Moderate	2015
Saint Charles Street near 6th Street	Moderate	2014
River Road near River Bend Drive	Moderate	2014
Old Spanish Trail near Savoie Lane	Moderate	2014
Willowdale Boulevard near E Heather Drive	Moderate	2013
Highway 90 near Co. Two	Moderate	2013
Panther Run near Longview Drive	Moderate	2013
Paul Fredrick Street near Hackberry Street	Complaint	2016
I 310 near LA 3127	Complaint	2016
Barrios Lane near Old Spanish Trail	Complaint	2015
Highway 3127 near Highway 3141	Complaint	2015
Coronado Drive near Dollar Tree/Game Stop near Highway 90	Complaint	2015
Tinny Street near S Kinler Street	Complaint	2015

LOCATION	SEVERITY	YEAR
E Club Drive near Redbud Lane	Complaint	2014
Old Spanish Trail near James Lane	Complaint	2014
Old Spanish Trail near James Lane*	Complaint	2014
Old Spanish Trail near James Lane*	Complaint	2014
Paul Maillard Road near Dollar General parking lot near David Ct	Complaint	2014
River Road (LA 48) under I 310 Overpass	Complaint	2014
Schexnaydre Lane near Thomas Coby Drive	Complaint	2014
Highway 90 near River Ridge Drive	Complaint	2014
W Magnolia Avenue near William Street	Complaint	2014
Highway 90 near Tiger Drive	Complaint	2014
Union Street near River Road	Complaint	2014
Hackberry Street near My Sons Lane	Complaint	2013
I 310	Complaint	2013
Highway 90 near Sellers Canal	Complaint	2013
Old Spanish Trail near J.B. Green Road	Complaint	2013
I 10 near I 55	No Injury	2016
I 10/Bonnet Carre Spillway	No Injury	2015
I 10/Bonnet Carre Spillway*	No Injury	2015
I 10/Bonnet Carre Spillway*	No Injury	2015
Evelyn Drive near Nola Street	No Injury	2015
Evelyn Drive near Nola Street*	No Injury	2015
Good Children Street near Bailey Street	No Injury	2015
Airline Highway near Swepi Road	No Injury	2014
River Road near Riverview Drive	No Injury	2013
Paul Maillard Road near Vial Lane	No Injury	2013
Post Street near Short Street	No Injury	2013
Highway 90 near Magnolia Ridge Road/Paul Maillard Road	No Injury	2013
Magnolia Ridge Road near Williams Street	No Injury	2013

*Indicates injuries to additional person in a single event

Table 1. St. Charles Parish Pedestrian Incidents with Injury Severities 2013-2016

LOCATION	SEVERITY	YEAR
Highway 90 near Lakewood Drive	Fatal	2013
Estate Drive near Hackberry Street	Moderate	2016
Ormond Boulevard near Villere Drive	Moderate	2016
River Road near Oak Street	Moderate	2016
Ormond Boulevard near Eric Lawrence Drive	Moderate	2015
Boutte Estate Drive near Tinny Street	Moderate	2014
Killona Drive near Adams Street	Moderate	2014
Ormond Boulevard near Eric Lawrence Drive	Complaint	2015
Highway 90 near Myrtle Street	Complaint	2014
Airline Highway near I 310	Complaint	2014
Highway 90 near Roys Lane	Complaint	2014
Lakewood Drive near Flowerwood Court	Complaint	2014
Lakewood Drive near Heather Drive	Complaint	2013
Highway 90 near Paul Maillard Road	Complaint	2013
Paul Maillard Road near Canal Street	Complaint	2013
Hackberry Street near Paul Maillard Road	Complaint	2013
Highway 90 near Monsanto Avenue	No Injury	2014
Airline Highway near Almedia Road	No Injury	2013

Table 2. St. Charles Parish Bicycle Incidents with Injury Severities 2013-2016

This document and the information contained herein is prepared solely for the purpose of identifying, evaluating and planning safety improvements on public roads which may be implemented utilizing federal and highway funds; and is therefore exempt from discovery or admission into evidence pursuant to 23 U.S. Code § 409.

Crash Data Findings

In St. Charles Parish between 2013 and 2016, there were 81 non-motorized crashes of all severity levels (all injury categories, including fatal incidents) reported to police 63 crashes involved pedestrians and 18 involved cyclists. (Table 3.) These crashes resulted in 6 fatalities. Thus, 7.4% of all non-motorized crashes led to a death. (Table 4.) Of the 6 non-motorized fatalities, 5 were pedestrians and 1 was a cyclist. (Table 5.)

Year	St. Charles Parish Non-Motorized All Severity Impacts	St. Charles Parish Bicycle All Severity Impacts	St. Charles Parish Pedestrian All Severity Impacts
2016	16	3	13
2015	18	2	16
2014	24	7	17
2013	23	6	17
Total	**81**	**18**	**63**

* All severity impacts include all injury categories and fatal crashes.

Table 3. St. Charles Parish All Severity Impacts by Bicycle and Pedestrian 2013-2016

Year	St. Charles Parish Non-Motorized All Severity Impacts*	St. Charles Parish Non-Motorized Fatalities	Percent Non-Motorized Fatalities of Non-Motorized All Severity Impacts*
2016	16	2	12.5%
2015	18	0	0.0%
2014	24	1	4.2%
2013	23	3	13.0%
Total	**81**	**6**	**7.4%**

* All severity impacts include all injury categories and fatal crashes.

Table 4. St. Charles Parish Percent Non-Motorized Fatalities of Non-Motorized All Severity Impacts 2013-2016

Year	St. Charles Parish Non-Motorized Fatalities	St. Charles Parish Bicycle Fatalities	St. Charles Parish Pedestrian Fatalities
2016	2	0	2
2015	0	0	0
2014	1	0	1
2013	3	1	2
	6	**1**	**5**

Table 5. St. Charles Parish Non-Motorized Fatalities by Bicycle and Pedestrian 2013-2016

There were 31 fatalities in St. Charles Parish between 2013 and 2016 including both non-motorized (6) and motorized fatalities. 19.4% of all crash fatalities in St. Charles Parish were therefore people walking or riding a bicycle. (Table 6.)

Year	St. Charles Parish Motorized and Non-Motorized Fatalities	St. Charles Parish Non-Motorized Fatalities	Percent Non-Motorized Fatalities of Motorized and Non-Motorized Fatalities
2016	8	2	25.0%
2015	7	0	0.0%
2014	6	1	16.7%
2013	10	3	30.0%
Total	**31**	**6**	**19.4%**

Table 6. St. Charles Parish Percent Non-Motorized Fatalities of Motorized and Non-Motorized Fatalities 2013-2016

There were nine severe injuries, all of which were pedestrian injuries. In other words, between 2013 and 2016, 80% of all non-motorized fatalities in St. Charles Parish were pedestrians and 100% of non-motorized severe injuries were incurred by pedestrians. Overwhelmingly, pedestrians are hit, killed, and suffer life-threatening injuries more frequently than people bicycling. (Table 7.)

Year	St. Charles Parish Non-Motorized Severe Injuries	St. Charles Parish Bicycle Severe Injuries	St. Charles Parish Pedestrian Severe Injuries
2016	2	0	2
2015	3	0	3
2014	1	0	1
2013	3	0	3
	9	**0**	**9**

Table 7. St. Charles Parish Non-Motorized Severe Injuries by Bicycle and Pedestrian 2013-2016

Tables 8-10 illustrate Louisiana statewide crash statistics.

Year	Louisiana Motorized and Non-Motorized Fatalities	Louisiana Non-Motorized Fatalities	Percent Non-Motorized Fatalities of All Fatalities
2016	757	149	19.68%
2015	752	145	19.28%
2014	740	119	16.08%
2013	703	111	15.79%
Total	**2,952**	**524**	**17.75%**

Table 8. Louisiana Percent Non-Motorized Fatalities of All Fatalities Statewide 2013-2016

Year	Louisiana Motorized and Non-Motorized Fatalities	Louisiana Bicycle Fatalities	Percent Bicycle Fatalities of All Fatalities
2016	757	21	2.77%
2015	752	33	4.39%
2014	740	12	1.62%
2013	703	13	1.85%
Total	**2,952**	**79**	**2.68%**

Table 9. Louisiana Percent Bicycle Fatalities of All Fatalities Statewide 2013-2016

Year	Louisiana Motorized and Non-Motorized Fatalities	Louisiana Pedestrian Fatalities	Percent Pedestrian Fatalities of All Fatalities
2016	757	128	16.91%
2015	752	112	14.89%
2014	740	107	14.46%
2013	703	98	13.94%
Total	**2,952**	**445**	**15.07%**

Table 10. Louisiana Percent Pedestrian Fatalities of All Fatalties Statewide 2013-2016

Each year Louisiana vehicle crashes result in over 700 fatalities. The number has steadily climbed from 703 in 2013 to 757 in 2016. A similar trend is reflected in the non-motorized deaths. There were 111 people killed walking or biking in 2013, rising to 149 in 2016. Non-motorized loss of life accounted for nearly 20% of all traffic deaths in 2016 in Louisiana. (Table 8.)

A further breakdown shows that of 79 people died while bicycling between 2013 and 2016, 2.68% of the 2,952 people killed on Louisiana roadways, (Table 9.) A staggering 445 people died while walking on or across Louisiana roadways or 15% of all vehicle related deaths. (Table 10.)

To make further comparisons using the previous tables, in Louisiana, pedestrian fatalities increased from 98 in 2013 to 128 in 2016. Meanwhile, in St. Charles Parish, pedestrian fatalities were inconsistent, jumping from two in both 2013 and 2016 to none in 2014 and one in 2015.

In Louisiana, bicycle fatalities showed episodic changes, increasing to 33 in 2015 and receding to 21 in 2016, yet the trend remained upward over the four-year period. In St. Charles Parish, the number of bicyclist fatalities was low overall, declining from one in 2013 to none between 2014 and 2016.

Rates of pedestrian and bicycle fatalities as a share of total crash fatalities varied over the 4-year study period. In 2013 in St. Charles Parish there were two pedestrian fatalities and one bicycle fatality. There were ten crash fatalities (motorized and non-motorized) in 2013, with the 3 non-motorized fatalities accounting for 30% of that total. This is the highest percentage of the four years that were reviewed. 2016 was the second most severe year for non-motorized fatalities, with non-motorized travelers accounting for two out of eight total crash fatalities (25%). In 2014 this percentage was 16.7%, when there was one pedestrian fatality out of six total crash fatalities.

Per the most recently available annual report of the National Highway Traffic Safety Administration (2016), the State of Louisiana has the 7th highest number of pedestrian fatalities per capita and 3rd highest number of bicyclist fatalities per capita, among all states including Puerto Rico and the District of Columbia. There is no significant downward trend in non-motorized fatalities relative to overall crash fatalities in St. Charles Parish, thus indicating that existing problems remain unsolved. Since St. Charles Parish deficiencies are greater than statewide deficiencies and statewide deficiencies rank so poorly nationwide, it is imperative to adequately respond by improving facilities and programs to enhance non-motorized safety in St. Charles Parish.

Incident Maps

The project team created incident maps to show the locations of vehicular crashes with non-motorists between 2013--2016. These maps highlight locations where pedestrian and bicycle incidents are concentrated. Key intersections of concern include Paul Maillard Road at US Highway 90 (four incidents), Paul Maillard Road at Tinny Street (two incidents) and Paul Maillard Road at David Court (three incidents). Other areas of concentrated pedestrian crashes exist along Old Spanish Trail, near the intersection with J.B. Green Road (one major incident), and between First Street near Hahnville High School and Paul Maillard Road (two incidents). While the incident map shows that locations for vehicular crashes with bicyclists are mostly dispersed, with no single road segment or intersection causing exceptional difficulty, 11% of total bicycle crashes occurred on Paul Maillard Road near the intersection of David Court where pedestrian crashes were also concentrated.

“Since St. Charles Parish deficiencies are greater than statewide deficiencies and statewide deficiencies rank so poorly nationwide, it is imperative to adequately respond by improving facilities and programs to enhance non-motorized safety in St. Charles Parish.”

Existing Pedestrian and Bicycle Facilities

The extent of existing pedestrian, bicycle, and shared-use facilities across the parish are shown on the existing facilities maps and listed in Tables 11-13. Pedestrian facilities refer to sidewalks, whereas bicycle facilities refer to bike lanes that are shared or independent from vehicular traffic. Shared-use facilities provide transportation for both pedestrians and bicyclists and are therefore shown on both the pedestrian and bicycle exisiting facilities maps.

Pedestrian Facilities

Table 11 shows mileages for pedestrian facilities within each sub-area and for the Parish as a whole. There are currently 22.86 miles of pedestrian facilities in the East Bank sub-area, 18.98 miles in the West Bank sub-area, and 1.34 miles in the Bayou sub-area.

EXISTING PEDESTRIAN FACILITIES	227,971 ft. (43.18 miles)
EAST BANK	**120,717 ft. (22.87 miles)**
Destrehan	39,769 ft. (7.53 miles)
Montz	14,022 ft. (2.66 miles)
Norco	16,244 ft. (1.85 miles)
New Sarpy	9,746 ft. (3.08 miles)
St. Rose	40,936 ft. (7.75 miles)
WEST BANK	**99,203 ft. (18.98 miles)**
Ama	5,781 ft. (1.09 miles)
Boutte	3,253 ft. (0.62 miles)
Hahnville	25,063 ft. (4.75 miles)
Killona	956 ft. (0.18 miles)
Luling	59,402 ft. (11.25 miles)
Taft	5,748 ft. (1.09 miles)
BAYOU	**7,051 ft. (1.33 miles)**
Bayou Gauche	6,034 ft. (1.14 miles)
Des Allemands	1,017 ft. (0.19 miles)

Table 11. Existing Pedestrian Facilities with Locations and Mileages by Sub-Area

Existing pedestrian facilities in St. Charles Parish are typically limited to major thoroughfares, recently-developed subdivisions, and the shared-use Mississippi River Trail (MRT). Although St. Charles Parish now requires the placement of sidewalks in subdivisions, this requirement was adopted after most residential areas were already developed, and sidewalks are often non-existent outside

residential areas. Within a subdivision, sidewalks allow for safe pedestrian travel internally, but they do not necessarily connect to an outside network. Additionally, there are no pedestrian countdown signals in the parish at existing signalized intersections, and high-visibility crosswalks are also not used.

Bicycle Facilities

Table 12 shows mileages for bicycle facilities within each sub-area and for the Parish as a whole. There are currently 3.97 miles of bicycle facilities in the East Bank sub-area, 1.05 miles in the West Bank sub-area, and no facilities in the Bayou sub-area.

EXISTING BICYCLE FACILITIES	20,962 ft. (3.97 miles)
EAST BANK	**15,432 ft. (2.92 miles)**
Ormond Boulevard Bike Lane	15,432 ft. (2.92 miles)
WEST BANK	**5,530 ft. (1.05 miles)**
Rathborne Park Bike Trail	5,530 ft. (1.05 miles)

Table 12. Existing Bicycle Facilities with Locations and Mileages by Sub-Area

There are very few facilities within the parish that are solely designated for bicycle use. Bicycle paths in the parish are predominately incorporated into the shared-use Mississippi River Trail and trails at the Bridge Parks. The only dedicated, non-shared use bicycle facilities in the parish are the on-street bike lanes on Ormond Boulevard in Destrehan and the bike trail at Rathborne Park in Luling. These bicycle paths operate independent of one another, creating a significant gap in the cycling network.

Shared-Use Facilities

Table 13 shows mileages for shared-use facilities within each sub-area and for the Parish as a whole. There are currently 12.98 miles of shared-use facilities in the East Bank sub-area, 11.16 miles in the West Bank sub-area, and no facilities in the Bayou sub-area.

Shared-use trails permit walking, bicycling, and in some cases other non-motorized uses. All shared-use facilities within St. Charles Parish are located along the Mississippi River. These include the Mississippi River Trail, the East Bank Bridge Park, and the West Bank Bridge Park.

EXISTING SHARED-USE FACILITIES	127,409 ft. (24.14 miles)
EAST BANK	**68,509 ft. (12.98 miles)**
Mississippi River Trail - East Bank	66,350 ft. (12.57 miles)
East Bank Bridge Park	2,159 ft. (0.41 miles)
WEST BANK	**58,900 ft. (11.16 miles)**
Mississippi River Trail - West Bank	56,318 ft. (10.67 miles)
West Bank Bridge Park	2,582 ft. (0.49 miles)

Table 13. Existing Shared-Use Facilities with Locations and Mileages by Sub-Area

The shared-use Mississippi River Trail is the safest route for pedestrians and bicyclists and is located atop levees on both sides of the river. Still, bicyclists must access the MRT by crossing River Road, which has a relatively high average speed of travel and is a problem area for crashes between vehicles and non-motorized travelers. The East Bank Mississippi River Trail runs from Jefferson Parish to the Bonnet Carré Spillway. As of this plan, a construction contract for extending the path to St. John the Baptist Parish has been awarded to a contractor, but construction activities have not started. Dedicated pedestrian and bicyclist access points exist at Apple Street in Norco; West Harding Street in New Sarpy; Ormond Boulevard, Ormond Plantation, and East Bank Bridge Park in Destrehan; and St. Rose Avenue and Club Drive in St. Rose. The West Bank Mississippi River Trail has a continuous asphalt path between Jefferson Parish in the east and Hahnville to the west. Although the Parish plans to continue the bike path farther to the west in the future, the unbuilt portion has yet to be designed. Dedicated pedestrian and bicyclist access points exist at Ellen Street and Saint Mark Street in Ama; Davis Drive in Boutte; West Bank Bridge Park in Luling; and Elm Street in Hahnville. Once fully constructed, the total estimated cost to maintain the entire Mississippi River Trail on both the West Bank and East Bank is $178,000 per mile, or $5.6 million. It is assumed that maintenance would be performed on the trail every 15 years, summing to an annual estimated maintenance cost of $374,000 per year, or $25,000 per mile.

The Mississippi River Trail allows safer travel for bicyclists along both banks of the river. Still, bicyclists must access the Mississippi River Trail by crossing River Road, which has relatively high speeds of vehicular travel and is a problem area for crashes

between vehicles and non-motorized travelers.

Additional shared-use trails exist at East Bank and West Bank Bridge Parks. The East Bank Bridge Park is located at the foot of the Hale Boggs Memorial Bridge in Destrehan. Its counterpart, the West Bank Bridge Park, sits on the opposite side of the bridge and river in Luling. The parks provide nearly the same distance of recreational trail with 0.41 miles in the East Bank and 0.49 miles in the West Bank. Both parks are accessible from their respective sides of the Mississippi River Trail by crossing River Road under the bridge overpass, however no signals or high-visibility infrastructure are placed at the crosswalks.

Reference maps showing the existing overall network, including pedestrian and bicycle facilities can be found in Appendix B. Shared-use trails are displayed on both network maps.

Current Design Standards

Currently, the only adopted design standard for pedestrian facilities in St. Charles Parish is the following language pertaining to the placement of sidewalks, from a 1994 ordinance:

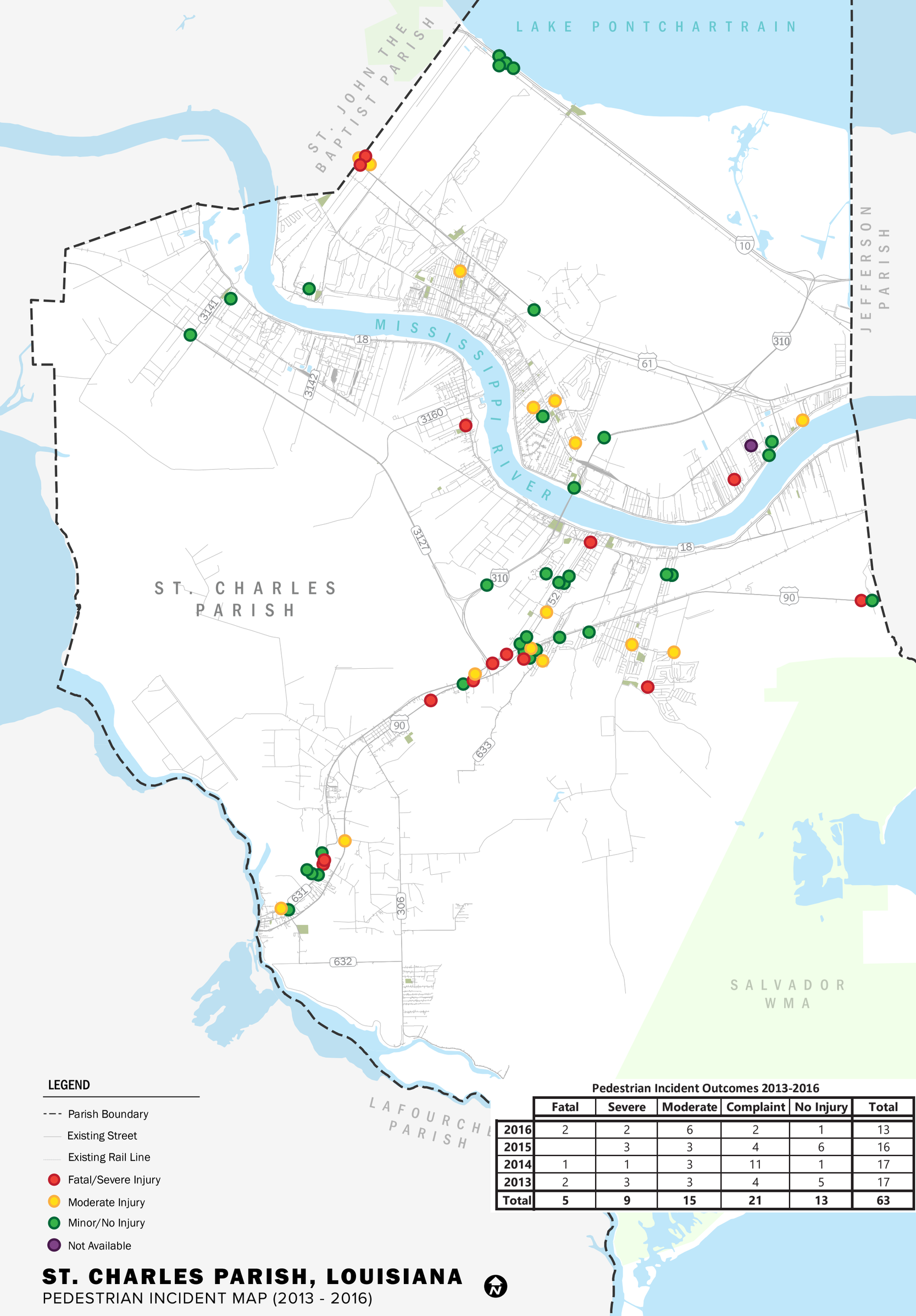
> Ord. No. 94-12-4
>
> Appendix C – St. Charles Parish Subdivision Regulations of 1981
>
> Section IV (Design Standards)
>
> Subsection E (Miscellaneous)
>
> 1. (Sidewalks.)
>
> Sidewalks shall be required along each side of all residential subdivision streets within the five-foot sidewalk servitude within the street rights-of-way. However, in open-swale drainage subdivisions, no sidewalks shall be required.
>
> Required sidewalks shall be installed concurrent with the initial development of each lot of record and shall be the responsibility of the owner-of-record at the time of that initial construction of permanent residential improvements.

There are no ordinances that create design standards specifically related to bicycle facilities.

In addition to the Parish Ordinances, publications by the American Association of State Highway and Transportation Officials (AASHTO), the Federal Highway Administration (FHWA), and Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG) serve as sources for minimum design standards for pedestrian and bicycle facilities. Officials should reference these publications to develop additional standards.

Conclusion

Evaluating existing conditions is the first step in a comprehensive, data-driven planning process to create safer, more accessible, and more comprehensive walking and biking connections within St. Charles Parish. Historical land use patterns and prior planning have resulted in a transportation system which does not adequately address the needs of individuals walking and biking. The facilities that exist today do not provide safe, comprehensive networks for non-motorized travelers. Creating a comprehensive non-motorized transportation network will require improvements to connectivity, intersection and crossing safety, and a shift in transportation planning culture that takes responsibility to provide safe places for non-motorized transportation users.



LEGEND

- Parish Boundary
- Existing Street
- Existing Rail Line
- Fatal/Severe Injury
- Moderate Injury
- Minor/No Injury
- Not Available

Pedestrian Incident Outcomes 2013-2016

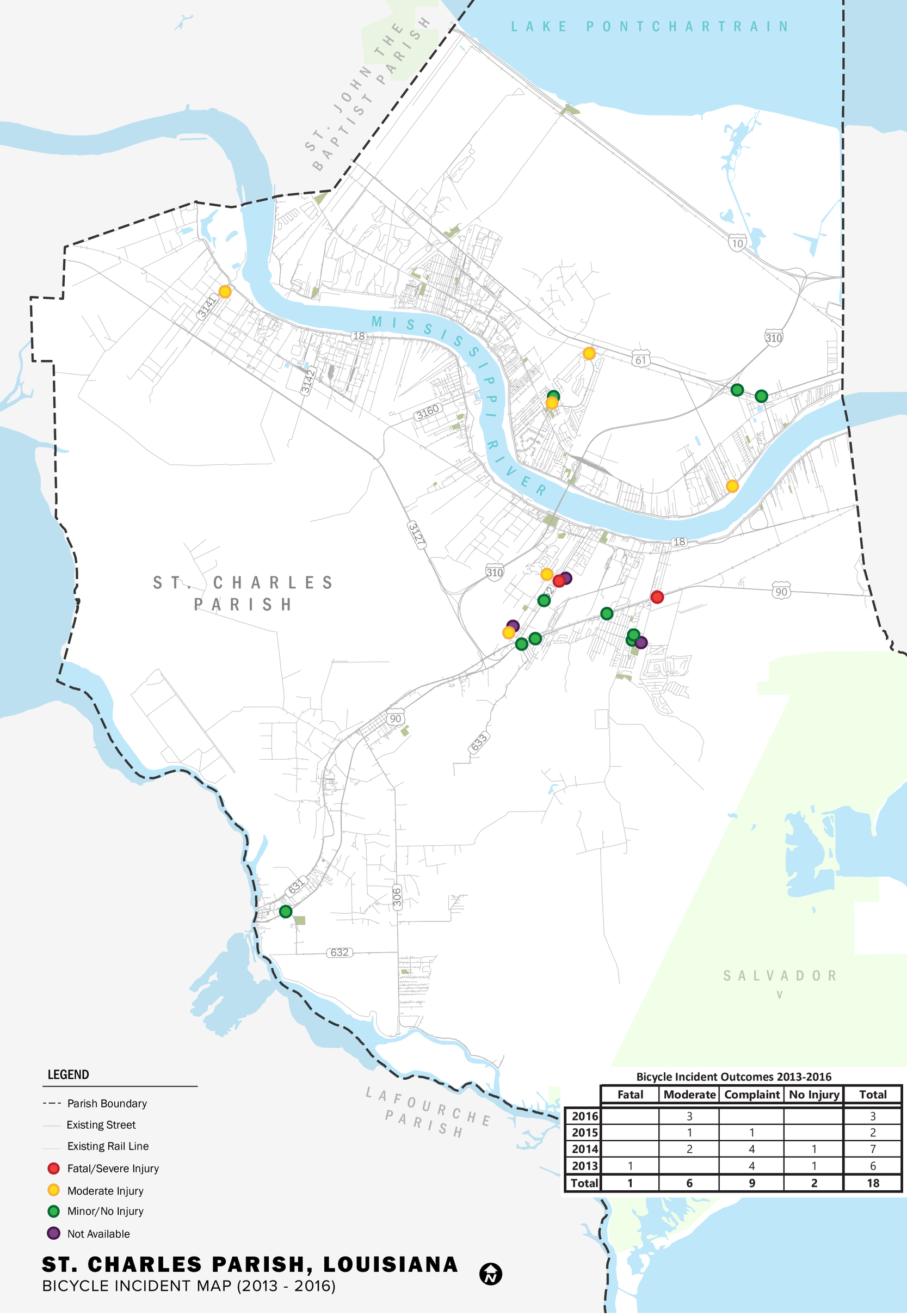
	Fatal	Severe	Moderate	Complaint	No Injury	Total
2016	2	2	6	2	1	13
2015		3	3	4	6	16
2014	1	1	3	11	1	17
2013	2	3	3	4	5	17
Total	**5**	**9**	**15**	**21**	**13**	**63**

ST. CHARLES PARISH, LOUISIANA

PEDESTRIAN INCIDENT MAP (2013 - 2016)

Figure 17 - Pedestrian Incident Map

Note: Points marked as not available are due to missing information in the police report for the extent of injury sustained by the pedestrian.



Bicycle Incident Outcomes 2013-2016

	Fatal	Moderate	Complaint	No Injury	Total
2016		3			3
2015		1	1		2
2014		2	4	1	7
2013	1		4	1	6
Total	**1**	**6**	**9**	**2**	**18**

Figure 18 - Bicycle Incident Map

Note: Points marked as not available are due to missing information in the police report for the extent of injury sustained by the bicyclist.

This page intentionally left blank

4 ENGAGEMENT

This page intentionally left blank

4. ENGAGEMENT

The planning process was guided by a Project Steering Committee (PSC), comprised of representatives from the New Orleans Regional Planning Commission (RPC) and the St. Charles Parish government, including the Parish Council, Department of Parks and Recreation, and the Planning and Zoning Department. Throughout the study, the project team met regularly with the PSC to provide updates and facilitate discussions. At these meetings, the PSC supplied valuable input and feedback that informed the direction of the project.

The project team engaged with St. Charles Parish residents by administering an online survey and conducting public workshops. These outreach efforts allowed the project team to collect feedback directly from users, and provided a venue for citizens to express their opinions, desires, and experiences regarding the existing networks.

Project Steering Committee

The Project Steering Committee manages the project and reviews reports, maps, and proposed plans. It is comprised of the following members:

New Orleans Regional Planning Commission

Executive Director - Walter Brooks
Executive Director - Jeffrey Roesel
Principal Planner - Karen Parsons, AICP
Pedestrian and Bicycle Program Manager - Dan Jatres

Parish Officials and Staff

Parish President - Larry Cochran
Chief Administrative Officer - Billy Raymond
Executive Director of Procurement and Government Buildings - Darrin Duhe
Planning and Zoning Director - Michael Albert
Planning and Zoning Senior Planner - Marny Stein
Public Works Director - Clayton Faucheux
Public Works Engineer - Lee Zeringue
St. Charles Parish Public Schools, Chief Plant Services and Security Officer - John P. Rome, Jr.
Parks and Recreation Director - Duane Foret
Grants Officer - Carla Chiasson
St. Charles Parish Public Schools, Administrator of Safety, Security, and Emergency Preparedness - Kade Rogers
St. Charles Parish Sheriff's Office - Captain Pat Yoes

Four meetings were scheduled by the PSC to review engagement efforts and plan development:

February 7, 2017

Review of the project scope and identify gaps in the current walking and bicycling infrastructure.

April 12, 2017

Review of the results from data collection and analysis. Provide input concerning policy and program recommendations and to raise awareness and increase pedestrian and bicycle safety.

December 14, 2017

Review of the information collected from public engagement and surveys. Review and comment on the proposed pedestrian and bicycle networks.

November 20, 2018

Review and comment on the St. Charles Parish Comprehensive Pedestrian & Bicycle Master Plan.

Public & Stakeholder Engagement

The public engagement process included a community survey and three public workshops. The process highlighted safety concerns and preferred locations for pedestrian and bicycle routes, facilities, and safety improvements.

Community Survey

In collaboration with the PSC, the project team developed and distributed a survey to facilitate public input and to supplement public workshop results. The community survey was available online at URL www.walkbikescp.com and via public libraries throughout St. Charles Parish. The complete survey is provided in Appendix C.

% RESPONDENTS	AREA OF PARISH
58%	Luling
15%	Destrehan
5%	Hahnville
4%	Boutte
4%	St. Rose
3%	Ama
3%	Montz
3%	Norco
2%	Bayou Gauche
2%	Des Allemands
1%	Paradis

Table 14. Residence Locations of Survey Respondents

101 responses were recorded. Table 14 that follows shows the breakdown of where survey respondents reside:

The general perception is that the parish lacks sufficient pedestrian and bicycling facilities, making it neither pedestrian- nor bicycle-friendly.

- 92% say the parish does NOT have enough sidewalks
- 91% say the parish does NOT have enough bicycle facilities
- 76% think the parish is NOT pedestrian-friendly
- 69% think the parish is NOT bicycle-friendly

Survey respondents identified the following safety concerns regarding walking and bicycling:

- 24% Road or sidewalk conditions
- 14% Aggressive driving
- 14% Distractions from electronic devices
- 13% Drivers not following laws, signals, and rules
- 11% Lack of law enforcement (vehicles surpassing the posted speed limits, vehicles not following the 3-foot passing rule, vehicles parked on sidewalks, etc.)
- 7% Bicyclists not following laws, signals, and rules
- 6% Lack of non-motorized enforcements (no hand signals, riding the wrong way, no front or back lights, etc.)
- 6% Pedestrians not following laws, signals, and rules
- 5% Other

Survey respondents identified the following as the least safe places for walking and bicycling in St. Charles Parish:

- Paul Maillard Road
- Barton Avenue
- Highway 90
- Lakewood Drive

Survey respondents identified the following as the safest places for walking and bicycling in St. Charles Parish:

- Residential streets
- Mississippi River Trail
- Rathborne Park
- Bridge Parks

Pedestrian

When asked how frequently they walk, the majority of respondents stated that they walk at least once per week.

- 42% 1-4 days per week
- 21% 5-7 days per week
- 19% 1-3 days per week
- 8% less than one day per month
- 10% never

Roughly half of the respondents drive their vehicle to a location from which they walk. The most popular reasons for walking are for exercise and fitness (57%) and recreation (29%). The top reasons for choosing not to walk for a trip include lack of enough sidewalks (17%), weather and heat (11%), and difficulty crossing roadways (11%).

Survey respondents say that they would be willing to walk more often if there were the following improvements to infrastructure:

- more sidewalks (26%)
- more marked crosswalks (15%)
- more connectivity (pathways decreasing the distance to desired destinations) (14%)

Bicycle

When asked how frequently they bicycle, the majority of respondents stated that they bicycle at least once per week.

- 42% bicycle 1-4 days per week
- 25% bicycle 1-3 days per month
- 13% bicycle 5-7 days per week
- 11% bicycle less than 1 day per month
- 9% never bicycle

61% of respondents drive a vehicle to a location from which they bicycle.

The top reasons for riding a bicycle include exercise and fitness (46%) and recreation (39%). The top reasons for not riding a bicycle include fear of traffic and road safety (26%) and lack of on-street or off-street bicycling facilities (22%).

Survey respondents say that they would be willing to bike more often if there were the following improvements to infrastructure:

- striped bikeways (20%),
- low-stress bicycling routes (18%)
- connected and safer routes to desired destinations (16%)

The top reasons which lead survey participants to feel nervous or upset about riding their bicycles include: distracted driving, drivers texting or talking on cell phones (31%); drivers failing to provide a safe distance when passing bicyclists (26%); and drivers failing to slow down when the road is narrow (24%).

Safety

Of the people who participated in the survey, 25% answered that they have been in an accident or near-accident while riding their bicycle in St. Charles Parish. The main causes for these accidents include vehicles not following laws or traffic signals (32%), vehicles passing too close (32%), and road conditions (21%). Community members provided suggestions to improve pedestrian and bicycle safety, including:

- creating additional facilities for walking and bicycling
- educating the public on bicycle safety and laws
- enforcing existing state laws

Community Workshops

The project team led workshops to inform and engage community members. The first set of workshops, called Visioning, focused on identifying assets and challenges to walking and cycling across the parish. These conditions resulted in community members determining which roadways and locations were most desirable for pedestrian and bicycle infrastructure improvements. Workshop attendees marked their comments on maps that the project team integrated into its overall assessment. (These maps are located in Appendix B.) Residents identified numerous hazardous locations and intersections that need improvement to increase safety. Overall, the community shared their perception of unsafe routes and their suggestions for new facilities.

Figure 19 - Workshop Attendees Marking Maps during Destrehan Workshop on June 14, 2017

In addition to the Visioning workshop with public attendees, the project team met with industries to understand potential impacts to their campuses. Industry stakeholders reviewed the proposed routes developed in the public workshops. These representatives also marked their comments on maps that led to adjustments of the routes.

The final set of workshops, called Future Scenarios, further involved the public by sharing the input that the project team had gathered and discussing the project's goals. Future Scenarios also provided residents the opportunity to review the proposed routes. Reactions to the routes, including suggestions of alternative routes for improved efficiency, developed the final network improvements.

Conclusion

Engagement with the stakeholders, public, and industries gave the project team a better understanding of pedestrian and bicycle facility needs and how the community feels the networks can be best expanded. The public engagement process also ensured that those who are most likely to use the networks had an opportunity to impact development of the plan, and generated feedback that influenced the recommended pedestrian and bicycle networks.

5 PROPOSED IMPROVEMENTS

This page intentionally left blank

5. PROPOSED IMPROVEMENTS

Figure 20 - Illustration of East Bank Bridge Park Intersection improvements

This section provides recommendations for pedestrian and bicycle routes, facilities, and facility locations. The proposed improvements directly address the plan's goals of improving safety, increasing transportation options, and spurring economic development throughout the parish.

Cost

All costs given for proposed treatments are rough estimates strictly for budgeting construction and maintenance costs. Professional services such as engineering and surveying are not included, as these costs are dependent on the final scope of work for each recommendation. Most unit costs were derived from 2017 LADOTD Letting Information, with additional sources used for items not included in the LADOTD information.

Prioritization

Tables 16-18, located at the end of this section, list all proposed projects for each sub-area by priority. Treatment recommendations are prioritized based on the segment's expected contribution to improved safety, improved connectivity, and economic benefits. Prioritization should guide the phased implementation of projects. Low priority projects should be installed after projects with a higher priority have been completed. This approach will aid in the intentional growth of the overall network while managing expenditures or creating the highest public benefit.

Ownership

Implementation strategies for facility improvements will vary based on road ownership. Table 15 shows the mileage totals by transportation mode and road ownership.

MODE	MILES
Non-Parish	
Pedestrian	13.12
Bicycle	34.57
Shared-Use	34.03
Parish	
Pedestrian	15.77
Bicycle	30.44
Shared-Use	10.03
Private	
Pedestrian	0.27
Bicycle	0.64
Shared-Use	5.95
Mileage Totals for All Owners	
Total Pedestrian	29.16
Total Bicycle	65.65
Total Shared-Use	50.01
Overall Total	**144.82**

Table 15. Facility Types and Mileages of Proposed Improvements by Road Ownership with Mode Totals

Priority Projects

Based on collected data, public engagement, and a modal analysis of the resulting maps, the project team recommends that the projects located in Table 19, located at the end of this section, be given the highest priority. These projects have been identified as having the lowest estimated cost or highest public benefit in consideration of volume use, connectivity, and safety improvements. The table lists the street name, path limits, path length, estimated construction cost, and reason for priority status for these selected treatments. The table lists one or more of the following attributes as reasons for high-priority status:

- "High-Volume Usage" indicates that a large number of pedestrians and bicyclists are expected to use a proposed facility. Most high-volume usage locations are adjacent to high-traffic areas that require additional infrastructure to integrate the multiple modes of transportation.
- "Connectivity" indicates that a proposed facility improves links to a larger pedestrian and bicycle network and improves the completeness of the system.
- "Safety" indicates that a proposed facility is located where previous crashes have occurred, and which are likely to require additional safety measures.
- "Cost" indicates that a proposed facility is estimated to cost less than $15 per linear foot of path.

Detailed information for all proposed projects, including existing condition, recommended treatment, purpose for implementation, estimated implementation cost, and estimated annual maintenance cost are located in Table 20 at the end of this section.

Priority Projects Summary

This report recommends 145 approximate miles of non-motorized facilities, including 29.16 miles of pedestrian facilities, 65.65 miles of bicycle facilities, and 50.01 miles of shared-use facilities. Improvements are also recommended for 23 intersections.

Criteria for Consideration

The FHWA has compiled criteria for selecting context-appropriate pedestrian and bicycle facilities. These selection criteria include:

Network

Treatments should contribute to a larger network or networks of interconnected pedestrian and/or bicycle facilities that allow safe, convenient travel for people of all ages. The most successful networks are comprised of various facility types that establish a hierarchy that ranges in usage volume, travel speed, width, and numerous other factors.

Land Use

Developed areas in St. Charles Parish, such as commercial districts, have a higher density of attractions, destinations, and people, and may require a greater density and variety of walking and biking facilities. Conversely, rural, low-density areas may require fewer dedicated walking and biking facilities for transportation.

Available Right-of-Way

Available right-of-way width is often limited in St. Charles Parish. This often limits the type of pedestrian and bicycle facilities that can be applied. In some cases, right-of-way acquisition may be required for the implementation of the most appropriate facility type.

Speed & Volume

The greater speed and volume of motor vehicle traffic, the greater the amount of separation is desired for comfortable walking and bicycling facilities. Where streets have low volumes and low speeds, the need for separation is less critical and the mixing of modes may be more appropriate. The speed and volume chart summarizes how speed and volume affect possible facility options.

The criteria for each facility type are displayed as icons (shown below). When the icons are colored, the representing conditions apply to that facility type. The top row presents the land use as rural, residential, or urban. The middle row shows the type of network including local, collector, and highway roadways. The bottom row shows the extent of available space in the right-of-way. Speed and volume charts are also included for sidewalks, marked shared lanes, and bicycle lanes. These charts compare the motor vehicle speed to the motor vehicle volume, showing both the potential and preferred amounts.

Figure 22 - Criteria Icon Example

Facility Types

The project team considers the following facility types suitable for implementation based on its analysis of St. Charles Parish. Note: Any changes to signals, roadways, and crossings must be evaluated and approved by a traffic engineer.

Pedestrian and Bicycle Facilities

Paved paths listed in this report are dependent on multiple factors, including but not limited to roadway right-of-way, roadway posted speed, and vehicular volume. Types of paths for pedestrians and/or bicyclists are as follows:

Sidewalk

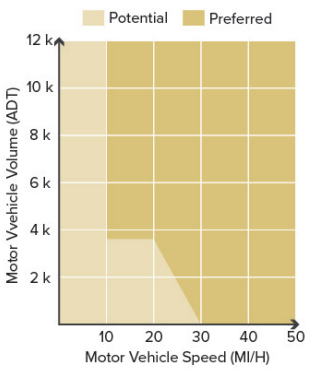
Sidewalks provide dedicated space that is intended for use by pedestrians and wheelchair users. This space is meant to be safe, comfortable, and accessible to all. Sidewalks are physically separated from the roadway by a curb or unpaved buffer space. Sidewalks are not intended for use by bicycles as they do not provide ample width for this form of transportation, which requires an absolute minimum of eight feet.

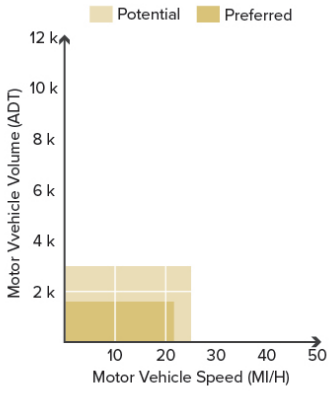
Figure 21 - Sidewalk

Marked Shared Lane

Marked shared lanes are low-volume, low-speed roadways designed to offer priority to bicyclists operating within a roadway that is shared with motor vehicle traffic. Marked shared lanes include Sharrows and bicycle symbols in the roadway. Marked shared lanes are not intended for pedestrian use.

Figure 22 - Marked Shared Lane





Bike Lane

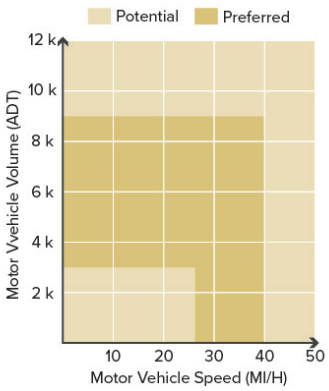
Bike lanes designate an exclusive space for bicyclists using pavement markings and signs. A bike lane is located within the roadway and striped to separate it from vehicular travel lanes. A bike lane is located directly adjacent to motor vehicle travel lanes and follows the same direction as motorized traffic.

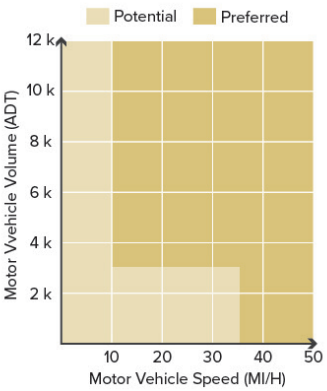
Separated Bike Lane

A separated bike lane is a facility for exclusive use by bicyclists that is located within or directly adjacent to the roadway and is physically separated from motor vehicle traffic by an installed vertical element.

Figure 23 - Bike Lane

Figure 24 - Separated Bike Lane





Shared-Use Trail, Independent

A shared-use trail provides a travel area that is separate from motorized traffic. It is intended for use by bicyclists, pedestrians, wheelchair users, joggers, skaters, and other users. Shared-use paths can provide a low-stress experience for a variety of users who use networks for transportation or recreation.

Figure 25 - Shared-Use Trail, Independent

Shared-Use Trail, Roadway Right-of-Way

A shared-use trail within a roadway right-of-way is a shared-use trail located adjacent and parallel to a roadway. Shared-use trails offer a comfortable experience for non-motorized users of all ages and abilities, in contrast to on-roadway facilities in heavy-traffic environments. These types of trails allow for reduced roadway crossing distances and maintain rural community character.

Figure 26 -Shared-Use Trail, Roadway Right-of-Way

Trailhead

A trailhead is a place of beginning or a significant node along a linear facility. Trailheads can consist of several different elements, including, but not limited to: vehicular parking, bicycle parking, shaded shelter, restrooms, water, lockers, shower facilities, wayfinding information (maps), etc.

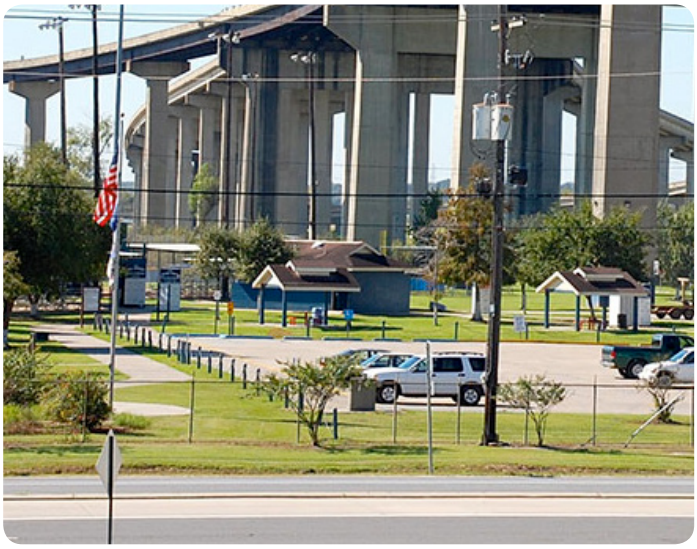


Figure 27 - Trailhead

Intersection Improvements

The appropriate facility type to apply at an intersection varies based on intended speed, level of visibility, and the facility that is being intersected. Intersection treatments deemed to be suitable for implementation include:

Railroad Crossings

St. Charles Parish contains several railroad lines that create barriers separating residents from their destinations. Railroad crossing improvements include those made to both roadway pavement and infrastructure additions, such as crossing arms and concrete or rubber flangeway fillers, that accommodate pedestrian and bicyclist safety.

Figure 28 - Railroad Crossing

Vehicular Barrier

Vehicular barriers indicate that a pathway or trail is only intended for pedestrian or bicycle use and prevent vehicular access. Barriers can exist in the form of bollards, gates, or other devices.

Figure 29 - Vehicular Barrier

Levee Access Path (Switchback Ramps)

Levee access paths include ramps and paths that connect levee-top trails to the surrounding community. To keep the levee top easily accessible, access paths are often placed in a switchback pattern to make travel more gradual during elevation change between the roadway and levee top.

Figure 30 - Levee Access Path

Crossing Marking (Unsignalized)

High-visibility crossing markings alert motorists of locations where they should expect to encounter pedestrians and to identify a designated crossing location for pedestrians and cyclists.

Figure 31 - High-Visibility Crossing Marking

Active Warning Beacon

Active warning beacons are user-activated amber flashing lights that alert drivers to pedestrian and bicyclist crossing. Beacons will need to be installed according to permit regulations and maintained by the local agency that has jurisdiction over the right-of-way.

Figure 32 - Active Warning Beacon

Hybrid Beacon & Crossing

A hybrid beacon, also known as a High-Intensity Activated Crosswalk (HAWK) or Pedestrian Hybrid Beacon (PHB), is a user-actuated crossing signal. When the signal is not actuated, vehicular traffic does not stop; when a pedestrian or bicyclist activates the hybrid beacon, traffic is directed to stop to allow for a safe crossing.

Figure 33 - Hybrid Beacon at Crossing

Crossing Marking & On-Demand Signal (At Existing Signals)

High-visibility crossing markings, in combination with on-demand signals at existing crossings, allow for safe pedestrian and bicycle crossings. Signals alert pedestrians and bicyclists when it is safe to cross.

Figure 34 - Crossing Marking with On-Demand Signal

New Signal, Crossing Marking & On-Demand Signal

Some areas may require the installation of new traffic signals, high-visibility crossing markings, and on-demand signals.

Figure 35 - Applying Paint to New Crosswalk

Constraints to Implementation

Industrial Land Uses

At the industry mapping workshop, some industrial stakeholders expressed concern about surveillance of their campuses from levee trails. One stakeholder was opposed to a path crossing or nearing its campus due to concerns about pedestrians and bicyclists compromising industry safety.

Railroads

The project team performed research to determine whether the railroads owned right-of-way in fee simple or had servitude rights provided by St. Charles Parish. This plan assumes that railroad companies own the rights-of-way where the tracks are located due to the number of ordinances passed by the Parish reflecting those agreements.

Railroad companies generally own 50 to 100% of the right-of-way where tracks are located. Any adjustments within a railroad right-of-way would require an agreement between the parish and the railroad owning the right-of-way.

Experience suggests that railroad companies are unlikely to enter into an agreement with municipalities for additional crossings due to liability concerns. Therefore, this plan recommends using roadways that currently include crossings and improving upon these existing crossing points, while limiting locations for trails within railroad rights-of-way where feasible.

The majority of railroad crossing recommendations in this report involve improvements to existing crossings, and none of the paths recommended in this report utilize a railroad right-of-way.

Limited Access Roads

The State of Louisiana prohibits non-motorized traffic from traveling on Interstates. Pedestrians and bicyclists are only permitted to travel on or beside a local or state roadway right-of-way, which limits the placement of proposed facilities.

Levees

Previous studies have been conducted for paving the Lower Guide Levee Road, but the USACE has yet to approve a proposed design.

Drainage

This report avoids recommending facilities that require converting open swales to subsurface drainage, as they can substantially increase construction costs. Instead, this report recommends combining pedestrian and bicycle uses to create a shared-use trail on one side of the right-of-way, minimizing the amount of drainage work required for those facilities.

Water Bodies

Although canals and other water bodies are a physical barrier to pedestrian and bicycle networks, creating new crossings would add significant costs to both construction and design. The networks proposed in this report use existing crossings to maintain financial feasibility.

Proposed Facility Locations

The project team determined locations for the proposed facilities by reviewing data on existing conditions, feedback from the Project Steering Committee and stakeholders, application criteria, and historical crash patterns.

Where multiple crashes are concentrated in one area, the project team analyzed crash types in greater detail to understand causes and to propose targeted measures to improve safety. In locations where crashes are not centralized, the project team recommends facilities to guide pedestrians and bicyclists to safer locations and network connectors for more efficient transportation. To improve conditions for pedestrians, the project team recommends that the Parish creates additional pedestrian walkways and clearly stripe crosswalks at road intersections. To improve conditions for cyclists, the project team recommends that the Parish creates new dedicated biking paths throughout the parish, improving safety, connectivity, and ease of travel.

Most improvement recommendations are proposed for locations with known crash incidents, except in locations where non-vehicular travel is legally prohibited (e.g. Interstate 310). Where possible, this plan recommends facilities that separate non-motorized travelers from the roadway yet allow them to remain within the road right-of-way. Intersection improvements throughout the parish should direct pedestrians and bicyclists to locations where drivers can anticipate encountering non-motorized traffic on the roadway. The project team expects this to raise driver awareness that non-motorized travelers can access the roadways at these locations, thus anticipating intersections with pedestrians, bicyclists, and reducing vehicular crashes.

This report also recommends new levee facilities due in part to their minimal risk of non-motorized crashes. The estimated construction costs for recommended new levee paths typically exceed one million dollars. However, these paths are often multiple miles long and have a relatively low cost per square foot compared to other facility types, while also providing optimal safety.

Levee-top trails are an ideal location for dedicated non-motorized facilities. Unless access is prohibited, pedestrians can often use levees without any type of surface treatment (concrete, asphalt, limestone), as the top of the levee is usually dry and easily traveled by foot, especially when regularly maintained. Trails paved with asphalt or concrete provide comfortable travel for bicyclists. On these linear green spaces, pedestrians and bicyclists can travel for miles uninterrupted, since non-emergency vehicles are prohibited from using the levee systems. Levees can also provide scenic routes, which attract pedestrians and bicyclists to the parish from elsewhere in the region. Crucially, levee paths substantially reduce conflicts between motorized and non-motorized travelers. The Mississippi River Trail is an existing major asset, and this report proposes several additional levee trails to link to existing and future network.

Figure 36 - Mississippi River Trail

Conclusion

The proposed pedestrian and bicycle network treatments focus on connections within and between the three defined sub-areas and in consideration of the Mississippi River boundary. The proposed improvements also seek to provide St. Charles Parish residents with safer means of transportation among multiple modes. Improvement projects are vast in location and expense; therefore, priority treatments projects have been selected for immediate consideration. In addition, the following comprehensive table lists treatment information for all projects, sorted by sub-area. Tables showing all projects sorted by priorities and council districts are located in Appendix A.

Many of the bicycle facility locations on state routes that are recommended in this Pedestrian and Bicycle Master Plan are for the same locations as those that were determined from the LADOTD's Bicycle Planning Tool. A snapshot of the tool's map (to the extent of the parish boundaries), which shows bicycling conditions on these routes, is located in Appendix B.

Table 20 includes an itemized list of all proposed improvements to networks across the parish. The maps that follow display proposed projects for the overall network and within sub-areas.

Subsequent pages include renderings that demonstrate the installation of several proposed projects. The illustrations show specific segment improvements and visualize their anticipated benefits to the overall network. The numbered icons on the maps relate to their descriptions below. A key map is included to show the location of the segment and the direction of the illustration's perspective.

SUB-AREA: EAST BANK		
TOTAL COST: $26,782,000		
HIGH PRIORITY	**MEDIUM PRIORITY**	**LOW PRIORITY**
Apple Street (LA 48)	Airline Highway (US 61)	Airline Highway (US 61)
Ashton Drive	Ormond Blvd. Access Bridge Road	Almedia Road (LA 50)
Country Cottage Boulevard	E. Harding Street	Bart Street
East Bank Bridge Park	E. Terrace Street	Church Road Easement
East Bank Levee Multi-Use Trail	Neighborhood Easment	Entergy ROW
Edgewood Lane	Ninth Street	Evangeline Road
Entergy ROW	Ormond Trace Levee Trail	LA 626 (Saint Rose Avenue)
Entergy ROW	Terrace Street	Prospect Avenue (LA 627)
Eve Street	W. Harding Street	Lower Guide Levee
Fifth Street		Oak Street
First Street		Parish Servitude (Oak Street Pump Station)
Four J Lane		PLD Levee
Hill Heights Country Club Trail		Riverbend Drive
Leigh Lane		S. Destrehan Avenue
Live Oak Drive		St. Rose Avenue (LA 626)
Longview Drive		Swepi Road
Longwood Drive		Wildcat Lane
Lower Guide Levee		
Murray Hill Drive		
Ormond Boulevard		
Plantation Road		
San Francisco Drive		
Schexnaydre Lane		
Spillway Road		
Thomas Coby Drive		
Washington Street		

Table 16. East Bank Projects by Priority

SUB-AREA: WEST BANK		
TOTAL COST: $13,165,000		
HIGH PRIORITY	**MEDIUM PRIORITY**	**LOW PRIORITY**
Barton Avenue (LA 3050)	First Street	Beaupre Drive
Davis Drive	Angus Drive	Cottage Drive
Highway 90 (US 90)	Ashton Road	Duhe Drive
Judge Edward Dufresne Parkway	Court Street	Fashion Boulevard
Lakewood Drive	E. Heather Drive	LA 3127
Lakewood Drive	Ellington Avenue	Mary Plantation Road (LA 3141)
Paul Maillard Road (LA 52)	Luling Avenue	Home Place (LA 3160)
Rex Street	Magnolia Ridge Road (LA 633)	Lakewood Drive
West Bank Levee Multi-Use Trail	Oak Lane	Maryland Drive
	Primrose Drive	River Ridge Drive
	Rue La Cannes	S. Fashion Boulevard
	Sugarhouse Road	
	Sycamore Street	
	W. Heather Drive	
	Willowdale Boulevard	

Table 17. West Bank Projects by Priority

SUB-AREA: BAYOU		
TOTAL COST: $20,643,000		
HIGH PRIORITY	**MEDIUM PRIORITY**	**LOW PRIORITY**
Audubon Street	Bayou Des Allemands Levee	Beau Place Boulevard
Barber Road	Magnolia Ridge Levee	Down the Bayou Road
Bayou Gauche Road (LA 306)	Sunset Drainage District Levee	Easy Street
Fourth Street		Entergy ROW
Old Spanish Trail (LA 631)		Magnolia Ridge Road (LA 633)
Tiger Drive		Touchard Lane
US Highway 90		Up the Bayou Road
Wisner Street		
WPA Road and Levee Road (LA 632)		
Table 18. Bayou Projects by Priority		

STREET NAME	PATH LIMITS	PATH LENGTH (FT)
Apple St. (LA 48)	Airline Hwy. (LA 61) to River Rd. (LA 48)	7,117
Ashton Dr.	S. Destrehan Ave. to Longwood Dr.	615
Audubon St.	Old Spanish Trail (LA 631) to Highway 90 (US 90)	1,035
Barber Rd.	Eula Dr. to Bayou Gauche Rd. (LA 306)	4,767
Barton Ave. (LA 3050)	Rex St. to Highway 90 (US 90)	939
Bayou Gauche Rd. (LA 306)	Old Spanish Trail (LA 631) to Dead End	45,379
Country Cottage Blvd.	Liza Ct. to River Rd. (LA 628)	17,930
Davis Dr.	River Rd. (LA 18) to Rex S.	5,483
East Bank Bridge Park	N/A	N/A
East Bank Levee Multi-Use Trail	Spillway Levee Crown to St. John the Baptist Parish	15,312
Edgewood Ln.	Leigh Ln. to Westover Ln.	1,849
Entergy ROW	Ormond Trace to E. Harding St.	1,959
Entergy ROW	I 310 to S. Destrehan Ave.	4,138
Eve St.	Murray Hill Dr. to Longview Dr.	1,242
Fifth St.	Norco St. to W. Pine St.	4,286
First St.	Apple St. (LA 48) to Washington St.	2,758
Four J Ln.	Evangeline Rd. to Leigh Ln.	388
Fourth St.	US Highway 90 to Old Spanish Trail (LA 631)	310
Highway 90 (US 90)	Barton Ave. (LA 3060) to Paul Maillard Rd (LA 52)	14,587
Hill Heights Country Club Trail	Murray Hill Dr. to Plantation Rd.	2,070
Judge Edward Dufresne Pkwy.	River Rd. (LA 18) to End	5,448
Lakewood Dr.	Birch St. to N. Lake Dr.	4,014
Lakewood Dr.	Highway 90 (US 90) to Birch St.	2,703
Leigh Ln.	Four J Lane to Edgewood Ln.	658
Live Oak Dr.	Schexnaydre Ln. to River Village Dr.	947
Longview Dr.	Eve St. to San Francisco Dr.	659
Longwood Dr.	Ashton Dr. to San Francisco Dr.	587
Lower Guide Levee	Wetland Watcher Park to Airline Hwy. (US 61)	17,930
Murray Hill Dr.	Hill Heights Country Club to River Rd. (LA 48)	4,922
Old Spanish Trail (LA 631)	Paul Maillard Rd. (LA 52) to Up the Bayou Rd.	38,265
Ormond Blvd.	Kansas City Railroad to Airline Hwy. (US 61)	761
Paul Maillard Rd. (LA 52)	River Rd (LA 18) to Highway 90 (US 90)	14,648
Plantation Rd.	Acadia Ln. to End	3,073
Rex St.	Davis Dr. to Barton Ave.	651
San Francisco Dr.	Longview Dr. to Longwood Dr.	763
Schexnaydre Ln.	Thomas Coby Dr. to River Rd.	4,305
Spillway Rd.	Lower Guide Levee Rd. to Spillway Levee Crown	8,956
Thomas Coby Dr.	Ormond Blvd. to Schexnaydre Ln.	886
Tiger Dr.	US Highway 90 to Hahnville High School	1,803
US Highway 90	Entergy ROW to Fourth St.	2,354
Washington St.	Third St. (Bethune Park) to River Rd. (LA 48)	1,576
West Bank Levee Multi-Use Trail	Elm St. to St. John the Baptist Parish	37,272
Wisner St.	Highway 90 (US 90) to Barber Rd.	1,021
WPA Rd. and Levee Rd (LA 632)	Old Spanish Trail (LA 631) to Allemands Elementary School	3,190

Table 19. High Priority Projects

ESTIMATED COST	REASON FOR HIGH PRIORITY STATUS
$ 735,391.42	Safety Improvements; High-Volume Usage
$ 1,980.30	Cost; Connectivity
$ 32,009.10	Safety Improvements; Connectivity
$ 124,944.74	Safety Improvements; High-Volume Usage/Connectivity
$ 46,487.14	Safety Improvements; High-Volume Usage/Connectivity
$ 538,515.10	Cost; Connectivity
$ 163,942.65	Cost; High-Volume Usage/Connectivity
$ 240,958.58	Safety Improvements; High-Volume Usage/Connectivity
$ 46,000.00	Safety Improvements; High-Volume Usage
$ 1,418,227.70	High-Volume Usage/Connectivity
$ 238,693.85	High-Volume Usage/Connectivity
$ 427,858.72	Safety Improvements; High-Volume Usage/Connectivity
$ 903,360.11	Safety Improvements; High-Volume Usage/Connectivity
$ 3,999.24	Cost; Connectivity
$ 112,470.92	High-Volume Usage/Connectivity
$ 148,536.76	High-Volume Usage/Connectivity
$ 53,282.45	Connectivity
$ 66,784.57	Safety Improvements; Connectivity
$ 1,087,355.41	Safety Improvements; High-Volume Usage/Connectivity
$ 307,098.27	High-Volume Usage/Connectivity
$ 192,218.18	High-Volume Usage/Connectivity
$ 12,925.08	Cost; High-Volume Usage/Connectivity
$ 38,544.78	Cost; High-Volume Usage/Connectivity
$ 86,228.50	Connectivity
$ 21,817.34	Safety Improvements; High-Volume Usage/Connectivity
$ 2,121.98	Cost; Connectivity
$ 1,890.14	Cost; Connectivity
$ 1,495,986.46	Cost; Connectivity
$ 420,004.84	Safety Improvements; High-Volume Usage/Connectivity
$ 10,144,573.03	Safety Improvements
$ 86,474.10	Safety Improvements; High-Volume Usage/Connectivity
$ 3,644,938.03	Safety Improvements; High-Volume Usage/Connectivity
$ 117,949.98	Safety Improvements; High-Volume Usage/Connectivity
$ 24,256.26	Safety Improvements; High-Volume Usage/Connectivity
$ 2,456.86	Cost; Connectivity
$ 81,845.96	Safety Improvements; High-Volume Usage/Connectivity
$ 1,953,759.32	High-Volume Usage/Connectivity
$ 25,898.92	Safety Improvements; High-Volume Usage/Connectivity
$ 78,679.78	Safety Improvements; High-Volume Usage/Connectivity
$ 713,760.04	Safety Improvements; High-Volume Usage/Connectivity
$ 125,156.70	Safety Improvements; Connectivity
$ 3,201,747.23	High-Volume Usage/Connectivity
$ 120,083.46	Safety Improvements; Connectivity
$ 668,077.60	Safety Improvements; Connectivity

STREET NAME	PATH LIMITS	SUB-AREA	PATH LENGTH (FEET)	EXISTING SURFACE
Airline Hwy. (US 61)	Apple St. to Lower Spillway Levee	East Bank	1,483	Asphalt
E. Harding St.	Entergy ROW to S. Johnson St.	East Bank	1,808	Asphalt
E. Terrace St.	9th St. to Terrace St.	East Bank	558	Asphalt
Lower Guide Levee	Wetland Watcher Park to Airline Hwy. (US 61)	East Bank	17,930	Gravel
Neighborhood Easment	Edgewood Ln. to Lisa Ct.	East Bank	458	N/A
Ninth St.	E. Terrace St. to E. Harding St.	East Bank	1,858	Asphalt
Ormond Blvd. Access Bridge Road	Airline Hwy. (LA 61) to PLD Levee	East Bank	572	Gravel
Ormond Trace Levee Trail	Villere Dr. to Entergy ROW	East Bank	3,099	N/A
Terrace St.	E. Terrace St. to River Rd. (LA 48)	East Bank	2,282	Asphalt
W. Harding St.	S. Johnson St. to River Road (LA 48)	East Bank	2,832	Asphalt
Airline Hwy. (US 61)	Swepi Rd. to Prospect Ave. (LA 627)	East Bank	4,604	Asphalt
Airline Hwy. (US 61)	River Bend Dr. to Almedia Rd. (LA 50)	East Bank	2,637	Asphalt
Almedia Rd. (LA 50)	Airline Hwy. to River Rd. (LA 48)	East Bank	4,607	Asphalt
Bart St.	Oak St. to St. Rose Ave. (Louisiana Highway 626)	East Bank		Asphalt
Church Rd. Easement	Airline Hwy. (LA 61) to PLD Levee	East Bank	1,388	Gravel
Entergy ROW	St. Rose Ave. (LA 626) to I 310	East Bank	13,525	N/A
Evangeline Rd.	Four J Ln. to River Rd. (LA 628)	East Bank	4,814	Asphalt
LA 626 (St. Rose Ave.)	Bart St. to River Rd. (LA 48)	East Bank	495	Asphalt
Lower Guide Levee	River Rd. (LA 48) to Airline Hwy. (US 61)	East Bank	8,492	Gravel
Oak St.	Dead End/Parish Servitude (Oak St. Pump Station) to Bart St.	East Bank	3,875	Asphalt

PRIORITY STATUS	ESTIMATED CONSTRUCTION COST	ESTIMATED ANNUAL MAINTENANCE COST	FACILITY TYPE/ INTERSECTION IMPROVEMENTS
Medium	$325,293.04	$2,790.00	Shared-Use Striping (Roadway Right-of-Way) Drainage (21" RCP) Path Construction
Medium	$5,821.76	$510.00	Marked Shared Lane
Medium	$1,796.76	$160.00	Marked Shared Lane
Medium	$1,495,986.46	$67,300.00	Independent Shared-Use Striping Path Construction
Medium	$39,837.65	$890.00	Independent Shared-Use Striping Path Construction Vehicle Barrier
Medium	$5,982.76	$530.00	Marked Shared Lane
Medium	$40,874.02	$1,200.00	Marked Shared Lane Path Construction Vehicle Barrier
Medium	$460,043.21	$5,962.91	Independent Shared-Use Striping Path Construction Drainage (18” RCP) New Crosswalk Striping
Medium	$294,848.04	$690.00	Marked Shared Lane Railroad Crossing Improvement
Medium	$498,675.24	$850.00	Marked Shared Lane Drainage (18” RCP) Railroad Crossing Improvement Sidewalks
Low	$395,619.96	$11,600.00	Marked Shared Lane Independent Shared-Use Path On-Demand Signal & Crossing
Low	$43,761.59	$2,150.00	Separated Marked Shared Lane On-Demand Signal & Crossing
Low	$755,419.82	$5,820.00	Marked Shared Lane On-Demand Signal & Crossing Railroad Crossing Improvement Sidewalks
Low	$26,215.87	N/A	Sidewalks Drainage (15" RCP)
Low	$158,261.03	$3,960.00	Marked Shared Lane New Crosswalk Striping Path Construction
Low	$2,950,596.18	$25,400.00	Independent Shared-Use Striping Drainage (21" RCP) Path Construction
Low	$621,363.24	$1,350.00	Marked Shared Lane Sidewalks Drainage (18” RCP)
Low	$59,277.90	$190.00	Marked Shared Lane Sidewalks Hybrid Beacon
Low	$1,283,527.14	$16,000.00	Independent Shared-Use Striping Path Construction Railroad Crossing Improvement
Low	$230,632.50	$4,860.00	Marked Shared Lane Trailhead Sidewalks

STREET NAME	PATH LIMITS	SUB-AREA	PATH LENGTH (FEET)	EXISTING SURFACE
Parish Servitude (Oak St. Pump Station)	Oak St. to St. Rose Ave (LA 626)	East Bank	275	Gravel
PLD Levee	Jefferson Parish to Lower Guide Levee	East Bank	53,112	N/A
Prospect Ave. (LA 627)	Airline Hwy. (US 61) to River Rd. (LA 48)	East Bank	5,980	Asphalt
Riverbend Dr.	Airline Hwy. (US 61) to River Rd. (LA 48)	East Bank	3,201	Concrete
S. Destrehan Ave.	Entergy ROW to River Rd. (LA 48)	East Bank	2,832	Asphalt
St. Rose Ave. (LA 626)	Entergy ROW to St. Charles Parish Servitude (Oak St. Pump Station)	East Bank	1,103	Asphalt
Swepi Rd.	Airline Hwy. (LA 61) to PLD Levee	East Bank	1,079	Gravel
Wildcat Ln.	Ormond Blvd. to Shexnaydre Ln.	East Bank	1,405	Concrete
Apple St. (LA 48)	Airline Hwy. (LA 61) to River Rd. (LA 48)	East Bank	7,117	Asphalt
Ashton Dr.	S. Destrehan Ave. to Longwood Dr.	East Bank	615	Concrete
Country Cottage Blvd.	Liza Ct. to River Rd. (LA 628)	East Bank	17,930	Concrete
East Bank Bridge Park		East Bank		Asphalt
East Bank Levee Multi-Use Trail (Mississippi River Trail)	West Bonnet Carre Spillway Levee Crown to St. John the Baptist Parish	East Bank	15,312	Gravel
Edgewood Ln.	Leigh Ln. to Westover Ln.	East Bank	1,849	Concrete
Entergy ROW	Ormond Trace to E. Harding St.	East Bank	1,959	N/A
Entergy ROW	I 310 to S. Destrehan Ave.	East Bank	4,138	N/A
Eve St.	Murray Hill Dr. to Longview Dr.	East Bank	1,242	Both
Fifth St.	Norco St. to W. Pine St.	East Bank	4,286	Asphalt

PRIORITY STATUS	ESTIMATED CONSTRUCTION COST	ESTIMATED ANNUAL MAINTENANCE COST	FACILITY TYPE/ INTERSECTION IMPROVEMENTS
Low	$2,377,019.00	$6,920.00	Independent Shared-Use Striping Path Construction
Low	$4,431,337.96	$99,700.00	Independent Shared-Use Striping Path Construction
Low	$594,255.60	$1,730.00	Marked Shared Lane Railroad Crossing Improvement
Low	$826,795.26	$4,120.00	Marked Shared Lane Hybrid Beacon Railroad Crossing Improvement Trailhead Sidewalks
Low	$637,198.80	$12,000.00	Marked Shared Lane New Crosswalk Striping Railroad Crossing Improvement Sidewalks Path Construction
Low	$575,610.95	$2,120.00	Shared-Use Striping (Roadway Right-of-Way) Drainage (21" RCP) Path Construction Hybrid Beacon Railroad Crossing Improvement
Low	$120,336.89	$1,710.00	Marked Shared Lane Path Construction
Low	$39,507.10	$700.00	Marked Shared Lane Sidewalks New Crosswalk Striping
High	$735,391.42	$9,480.00	Marked Shared Lane New Crosswalk Striping Railroad Crossing Improvement Sidewalks
High	$1,980.30	$90.00	Marked Shared Lane
High	$163,942.65	$3,300.00	Marked Shared Lane Levee Access Striping New On-Demand Signal & Crosswalk Striping Levee Access Path Construction
High	$46,000.00	$50.00	Hybrid Beacon
High	$1,418,227.70	$28,400.00	Independent Shared-Use Striping Marked Shared Lane Path Construction Levee Access Path Construction Trailhead
High	$238,693.85	$260.00	Marked Shared Lane Drainage (18” RCP) Sidewalks
High	$427,858.72	$3,680.00	Independent Shared-Use Striping Drainage (21" RCP) Path Construction
High	$903,360.11	$7,760.00	Independent Shared-Use Striping Drainage (21" RCP) Path Construction
High	$3,999.24	$180.00	Marked Shared Lane
High	$112,470.92	$1,210.00	Marked Shared Lane Sidewalks

STREET NAME	PATH LIMITS	SUB-AREA	PATH LENGTH (FEET)	EXISTING SURFACE
First St.	Apple St. (LA 48) to Washington St.	East Bank	2,758	Asphalt
Four J Ln.	Evangeline Rd. to Leigh Ln.	East Bank	388	Concrete
Hill Heights Country Club Trail	Murray Hill Dr. to Plantation Rd.	East Bank	2,070	N/A
Leigh Ln.	Four J Lane to Edgewood Ln.	East Bank	658	Concrete
Live Oak Dr.	Schexnaydre Ln. to River Village Dr.	East Bank	947	Both
Longview Dr.	Eve St. to San Francisco Dr.	East Bank	659	Concrete
Longwood Dr.	Ashton Dr. to San Francisco Dr.	East Bank	587	Concrete
Murray Hill Dr.	Hill Heights Country Club to River Rd. (LA 48)	East Bank	4,922	Asphalt
Ormond Blvd.	Kansas City Railroad to Airline Hwy. (US 61)	East Bank	761	N/A
Plantation Rd.	Acadia Ln. to End	East Bank	3,073	Asphalt
San Francisco Dr.	Longview Dr. to Longwood Dr.	East Bank	763	Concrete
Schexnaydre Ln.	Thomas Coby Dr. to River Rd.	East Bank	2,333	Asphalt
Spillway Rd.	Lower Guide Levee Rd. to West Bonnet Carre Spillway Levee Crown	East Bank	8,956	Asphalt
Thomas Coby Dr.	Ormond Blvd. to Schexnaydre Ln.	East Bank	886	Concrete
Washington St.	Third St. (Bethune Park) to River Rd. (LA 48)	East Bank	1,576	Asphalt
Barton Ave. (LA 3060)	Rex St. to Highway 90 (US 90)	West Bank	939	Asphalt
Davis Dr.	River Rd. (LA 18) to Rex S.	West Bank	5,483	Asphalt
Highway 90 (US 90)	Barton Ave. (LA 3060) to Paul Maillard Rd (LA 52)	West Bank	14,587	Asphalt
Judge Edward Dufresne Pkwy.	River Rd. (LA 18) to End	West Bank	5,448	Asphalt

PRIORITY STATUS	ESTIMATED CONSTRUCTION COST	ESTIMATED ANNUAL MAINTENANCE COST	FACILITY TYPE/ INTERSECTION IMPROVEMENTS
High	$148,536.76	$1,080.00	Marked Shared Lane New Crosswalk Striping Sidewalks Drainage (18” RCP)
High	$53,282.45	$210.00	Marked Shared Lane New Crosswalk Striping Sidewalks Drainage (18” RCP)
High	$307,098.27	$3,890.00	Independent Shared-Use Striping Drainage (18" RCP) Path Construction
High	$86,228.50	$130.00	Marked Shared Lane Sidewalks Drainage (18” RCP)
High	$21,817.34	$140.00	Marked Shared Lane Sidewalks
High	$2,121.98	$100.00	Marked Shared Lane
High	$1,890.14	$90.00	Marked Shared Lane
High	$420,004.84	$1,730.00	Marked Shared Lane New Crosswalk Striping Railroad Crossing Improvement Sidewalk
High	$86,474.10	$300.00	Independent Shared-Use Striping Path Construction On-Demand Signal & Crossing
High	$117,949.98	$4,120.00	Marked Shared Lane Sidewalks New Crosswalk Striping
High	$2,456.86	$110.00	Marked Shared Lane
High	$81,845.96	$2,060.00	Marked Shared Lane Walking Path Striping Sidewalks
High	$1,953,759.32	$16,800.00	Shared-Use Striping (Roadway Right-of-Way) Drainage (21" RCP) Path Construction
High	$25,898.92	$280.00	Marked Shared Lane Sidewalks New Crosswalk Striping
High	$125,156.70	$750.00	Marked Shared Lane $4,412.80 Drainage (18” RCP) New Crosswalk Striping Sidewalks
High	$46,487.14	$810.00	Marked Shared Lane On-Demand Signal & Crossing Sidewalks
High	$240,958.58	$4,570.00	Marked Shared Lane Hybrid Beacon Sidewalks Trailhead
High	$1,087,355.41	$37,600.00	Marked Shared Lane Path Construction
High	$192,218.18	$5,850.00	Separated Marked Shared Lane New Crosswalk Striping Sidewalks

STREET NAME	PATH LIMITS	SUB-AREA	PATH LENGTH (FEET)	EXISTING SURFACE
Lakewood Dr.	Birch St. to N. Lake Dr.	West Bank	4,014	Asphalt
Lakewood Dr.	Highway 90 (US 90) to Birch St.	West Bank	2,703	Concrete
Paul Maillard Rd. (LA 52)	River Rd (LA 18) to Highway 90 (US 90)	West Bank	14,648	Asphalt
Rex St.	Davis Dr. to Barton Ave.	West Bank	651	Asphalt
West Bank Levee Multi-Use Trail	Elm St. to St. John the Baptist Parish	West Bank	37,272	N/A
Angus Dr.	Sugarhouse Rd. to Paul Maillard Rd (LA 52)	West Bank	1,822	Asphalt
Ashton Rd.	River Rd. (LA 18) to Luling Ave.	West Bank	1,047	Asphalt
Court St.	Sugarhouse Rd. to Ellington Ave.	West Bank	1,039	Asphalt
E. Heather Dr.	Willowdale Blvd. to Lakewood Dr.	West Bank	3,824	Both
Ellington Ave.	Court St. to First St.	West Bank	199	Asphalt
First St.	Ellington Ave. to Paul Maillard Rd. (LA 52)	West Bank	375	Asphalt
Luling Ave.	Paul Maillard Rd. (LA 52) to Ashton Rd.	West Bank	2,739	Asphalt
Magnolia Ridge Rd. (LA 633)	Highway 90 (US 90) to Maple St.	West Bank	1,785	Asphalt
Oak Ln.	Highway 90 (US 90) to W Heather Dr.	West Bank	2,817	Asphalt
Primrose Dr.	Maryland Dr. to River Ridge Dr.	West Bank	4,875	Asphalt
Rue La Cannes	Ashton Plantation to Judge Edward Dufresne Pkwy.	West Bank	2,090	Concrete
Sugarhouse Rd.	Court St. to Angus Dr.	West Bank	4,716	Asphalt
Sycamore St.	Oak St. to LA 3160	West Bank	2,418	Asphalt
W. Heather Dr.	Lakewood Dr. to Maryland Dr.	West Bank	3,809	Asphalt
Willowdale Blvd.	E. Heather Dr. to Cottage Dr.	West Bank	3,521	Asphalt
Beaupre Dr.	Heather Dr. to Cottage Dr.	West Bank	3,721	Asphalt
Cottage Dr.	Beaupre Dr. to Willowdale Blvd.	West Bank	2,792	Asphalt
Duhe Dr.	Fashion Blvd. to Union Pacific Railroad	West Bank	332	Asphalt
Fashion Blvd.	River Rd. (LA 18) to Duhe Dr.	West Bank	2,162	Asphalt
Home Place (LA 3160)	River Road (LA 18) to LA 3127	West Bank	12,520	Asphalt

PRIORITY STATUS	ESTIMATED CONSTRUCTION COST	ESTIMATED ANNUAL MAINTENANCE COST	FACILITY TYPE/ INTERSECTION IMPROVEMENTS
High	$12,925.08	$570.00	Marked Shared Lane
High	$38,544.78	$1,680.00	Marked Shared Lane
High	$3,644,938.03	$18,300.00	Marked Shared Lane Sidewalk Drainage (36" RCP) New Crosswalk Striping On-Demand Signal & Crossing
High	$24,256.26	$810.00	Marked Shared Lane Sidewalks
High	$3,201,747.23	$75,500.00	Independent Shared-Use Striping Hybrid Beacon Path Construction Trailhead
Medium	$51,015.84	$570.00	Marked Shared Lane New Crosswalk Striping Sidewalk
Medium	$3,371.34	$300.00	Marked Shared Lane
Medium	$3,345.58	$300.00	Marked Shared Lane
Medium	$142,309.74	$3,170.00	Marked Shared Lane Sidewalks
Medium	$640.78	$60.00	Marked Shared Lane
Medium	$1,207.50	$110.00	Marked Shared Lane
Medium	$8,819.58	$770.00	Marked Shared Lane
Medium	$25,454.10	$2,220.00	Marked Shared Lane
Medium	$20,570.74	$560.00	Marked Shared Lane On-Demand Signal & Crossing
Medium	$366,834.99	$8,460.00	Shared-Use Striping (Roadway Right-of-Way) Path Construction New Crosswalk Striping
Medium	$313,125.73	$4,270.00	Independent Shared-Use Striping Drainage (18" RCP) Path Construction Vehicle Barriers
Medium	$135,728.52	$1,350.00	Marked Shared Lane New Crosswalk Striping Active Warning Beacon Sidewalks
Medium	$34,480.68	$3,000.00	Marked Shared Lane
Medium	$145,545.84	$4,780.00	Marked Shared Lane New Crosswalk Striping Sidewalks
Medium	$11,337.62	$660.00	Marked Shared Lane
Low	$11,981.62	$1,050.00	Marked Shared Lane
Low	$8,990.24	$790.00	Marked Shared Lane
Low	$293,844.32	$520.00	Marked Shared Lane Railroad Crossing Improvement Active Warning Beacon Vehicle Barrier
Low	$48,080.12	$2,730.00	Marked Shared Lane
Low	$452,154.24	$13,500.00	Separated Marked Shared Lane On-Demand Signal & Crossing Railroad Crossing Improvement

STREET NAME	PATH LIMITS	SUB-AREA	PATH LENGTH (FEET)	EXISTING SURFACE
LA 3127	LA 3160 to S. Fashion Blvd.	West Bank	5,802	Asphalt
Lakewood Drive	N. Lake Dr. to End	West Bank	2,279	Concrete
Mary Plantation Rd. (LA 3141)	River Rd. (LA 18) to Railroad Dr.	West Bank	3,655	Asphalt
Maryland Dr.	Highway 90 (US 90) to Primrose Dr.	West Bank	2,219	Asphalt
River Ridge Dr.	Highway 90 (US 90) to End	West Bank	2,809	Asphalt
S. Fashion Blvd.	Union Pacific Railroad to LA 3127	West Bank	7,107	Asphalt
Audubon St.	Old Spanish Trail (LA 631) to Highway 90 (US 90)	Bayou	1,035	Asphalt
Barber Rd.	Eula Dr. to Bayou Gauche Rd. (LA 306)	Bayou	4,767	Asphalt
Bayou Gauche Rd. (LA 306)	Old Spanish Trail (LA 631) to Dead End	Bayou	45,379	Asphalt
Fourth St.	US Highway 90 to Old Spanish Trail (LA 631)	Bayou	310	N/A
Old Spanish Trail (LA 631)	Louisiana Highway 52 (Paul Maillard Rd.) to Up the Bayou Rd.	Bayou	38,265	Asphalt
Tiger Dr.	US Highway 90 to Hahnville High School	Bayou	1,803	Both
US Highway 90	Entergy ROW to Fourth St.	Bayou	2,354	Asphalt
Wisner St.	Highway 90 (US 90) to Barber Rd.	Bayou	1,021	Asphalt

PRIORITY STATUS	ESTIMATED CONSTRUCTION COST	ESTIMATED ANNUAL MAINTENANCE COST	FACILITY TYPE/ INTERSECTION IMPROVEMENTS
Low	$1,246,015.21	$11,800.00	Independent Shared-Use Striping Drainage (24" RCP) Path Construction
Low	$167,439.54	$1,440.00	Marked Shared Lane New Crosswalk Striping Sidewalks
Low	$865,720.94	$10,900.00	Shared-Use Striping (Roadway Right-of-Way) Drainage (24" RCP) Path Construction Active Warning Beacon Trailhead
Low	$58,228.18	$630.00	Marked Shared Lane Sidewalks
Low	$158,299.34	$3,590.00	Marked Shared Lane New On-Demand Signal & Crosswalk Striping Vehicle Barrier Sidewalks
Low	$101,345.82	$8,820.00	Marked Shared Lane
High	$32,009.10	$1,350.00	Marked Shared Lane Active Warning Beacon
High	$124,944.74	$1,350.00	Marked Shared Lane Sidewalk
High	$538,515.10	$45,500.00	Marked Shared Lane Marked Shared Lane New Crosswalk Striping Active Warning Beacon
High	$66,784.57	$650.00	Shared-Use Trail (Roadway Right-of-Way) Striping Drainage (18" RCP)
High	$10,144,573.03	$88,800.00	Marked Shared Lane Marked Shared Lane Shared-Use Trail (Roadway Right-of-Way) Shared-Use Trail Striping Sidewalk Drainage (24" RCP) Active Warning Beacon New Crosswalk Striping On-Demand Signal & Crossing Railroad Crossing Improvement
High	$78,679.78	$2,300.00	Marked Shared Lane Sidewalk On-Demand Signal & Crossing
High	$713,760.04	$34,800.00	Shared-Use Trail (Roadway Right-of-Way) Shared-Use Trail Striping Drainage (36" RCP)
High	$120,083.46	$1,330.00	Marked Shared Lane Sidewalk Hybrid Beacon

STREET NAME	PATH LIMITS	SUB-AREA	PATH LENGTH (FEET)	EXISTING SURFACE
WPA Rd. and Levee Rd (LA 632)	Old Spanish Trail (LA 631) to Allemands Elementary School	Bayou	3,190	Asphalt
Bayou Des Allemands Levee	Down the Bayou Rd. to Badeaux Lane West Pump Station	Bayou	30,994	N/A
Magnolia Ridge Levee	River Ridge Dr. to Frickey Ln.	Bayou	18,939	N/A
Sunset Drainage District Levee	Magnolia Ridge Levee to Sunset Levee	Bayou	30,982	N/A
Beau Place Blvd.	Bayou Gauche Rd. to Bayou Gauche Rd. (LA 306)	Bayou	3,225	Concrete
Down the Bayou Rd.	Old US 90 (LA 631) to Dead End	Bayou	4,191	Asphalt
Easy St.	Old US 90 (LA 631) to Touchard Ln.	Bayou	269	Asphalt
Entergy ROW	US Highway 90 to Magnolia Ridge Levee	Bayou	9,734	N/A
Magnolia Ridge Rd. (LA 633)	Maple St. to Entergy ROW	Bayou	10,488	Asphalt
Touchard Ln.	Easy St. to Down the Bayou Rd.	Bayou	425	Asphalt
Up the Bayou Rd.	Old Spanish Trail to Old US 90 (LA 631)	Bayou	358	Asphalt

Table 20. All Proposed Projects

PRIORITY STATUS	ESTIMATED CONSTRUCTION COST	ESTIMATED ANNUAL MAINTENANCE COST	FACILITY TYPE/ INTERSECTION IMPROVEMENTS
High	$668,077.60	$7,843.35	Marked Shared Lane Active Warning Beacon Sidewalk Path Construction Drainage (36" RCP) Hybrid Beacon
Medium	$1,706,032.51	$41,100.00	Independent Shared-Use Trail Striping
Medium	$1,580,166.07	$38,400.00	Independent Shared-Use Trail Striping
Medium	$2,584,954.81	$62,700.00	Independent Shared-Use Trail Striping
Low	$10,384.50	$460.00	Marked Shared Lane
Low	$13,495.02	$1,200.00	Marked Shared Lane
Low	$866.18	$80.00	Marked Shared Lane
Low	$2,128,800.66	$19,800.00	Independent Shared-Use Trail Striping Drainage (21" RCP) New Crosswalk Striping Vehicle Barrier
Low	$128,318.66	$11,200.00	Separated Marked Shared Lane
Low	$1,368.50	$120.00	Marked Shared Lane
Low	$1,152.76	$100.00	Marked Shared Lane

ST. JOHN THE BAPTIST PARISH

PARISH BOUNDARY

LAKE PONTCHARTRAIN

ST. CHARLES PARISH

PARISH BOUNDARY

NON SERV ROAD

UPPER GUIDE LEVEE RD

LOWER GUIDE LEVEE RD

AIRLINE DR

CC RD

THOROUGHBRED AV

UNION ST

RIVER RD

EAST ST

APPLE ST

FIFTH ST

SIXTH ST

EIGHTH ST

E SERVICE RD

PROSPECT AVE

S WEPY RD

ANNEX ST

E HARDING ST

VILLERE DR

DUNLEITH DR

PLANTATION RD

VAN'S LN

CAROLYN DR

ORMOND BLVD

MURRAY HILL DR

LONGVIEW DR

WESTBANK AV

ALPHA DR

JEAN ST

CHRISTINA LN

ST ROSE AV

OAK ST

1ST ST

JANET DR

LENTINI LN

RUE LANDRY

RIVERVIEW DR

ALAMEDIA RD

BONURA DR

RIVERBEND DR

JAMES DRIVE WEST

JAMES DRIVE EAST

RIVER RD

S FASHION BLVD

MISSISSIPPI RIVER

MATCHLINE: WEST BANK MAP SHEET

PROPOSED

- Railroad Crossing Improvements
- Vehicular Barriers
- Trailhead Locations
- Levee Access Path (switchback ramp)
- New Crossing Marking (unsignalized)
- Active Warning Beacon (unsignalized)
- Hybrid Beacon Crossing (major streets)
- Crossing Markings + On-Demand Signal (at existing signal)
- New Signal + Crossings + On-Demand Signal
- Sidewalk
- Shared-Use Trail (roadway right-of-way)
- Shared-Use Trail (independent)

EXISTING

- Existing Shared-Use Trail
- Existing Sidewalk
- Existing Street (context)
- Existing Rail Line

0 0.5 1 2 3 4 Miles

ST. CHARLES PARISH, LOUISIANA

PROPOSED PEDESTRIAN NETWORK - EAST BANK

ST. JOHN THE BAPTIST PARISH

PARISH BOUNDARY

ST. CHARLES PARISH

JEFFERSON PARISH

PARISH BOUNDARY

HWY 3127

HWY 3141

RIVER RD

HWY 3142

L ST

RIVER PARK DR

HWY 3160

COURTHOUSE LN

LEE LN

PLANTATION RD

S FASHION BLVD

MISSISSIPPI RIVER

MATCHLINE: BAYOU MAP SHEET

MATCHLINE: EAST BANK MAP SHEET

LULING AV

I-310

ALLIE LN

PAUL MAILLARD RD

QUEENIE DR

DAVIS DR

LEVEE RD

SINGS LN

ANNA ST

HWY 90

NON SERV ROAD

WANDA ST

PRIMROSE DR

WILLOWDALE BLVD

TEXACO RD

BEAUPRE DR

PROPOSED

- Railroad Crossing Improvements
- Vehicular Barriers
- Trailhead Locations
- Levee Access Path (switchback ramp)
- New Crossing Marking (unsignalized)
- Active Warning Beacon (unsignalized)
- Hybrid Beacon Crossing (major streets)
- Crossing Markings + On-Demand Signal (at existing signal)
- New Signal + Crossings + On-Demand Signal

- Sidewalk
- Shared-Use Trail (roadway right-of-way)
- Shared-Use Trail (independent)

EXISTING

- Existing Shared-Use Trail
- Existing Sidewalk
- Existing Street (context)
- Existing Rail Line

0 0.5 1 2 3 4 Miles

ST. CHARLES PARISH, LOUISIANA

PROPOSED PEDESTRIAN NETWORK - WEST BANK

PROPOSED

- Railroad Crossing Improvements
- Vehicular Barriers
- Trailhead Locations
- Levee Access Path (switchback ramp)
- New Crossing Marking (unsignalized)
- Active Warning Beacon (unsignalized)
- Hybrid Beacon Crossing (major streets)
- Crossing Markings + On-Demand Signal (at existing signal)
- New Signal + Crossings + On-Demand Signal
- Sidewalk
- Shared-Use Trail (roadway right-of-way)
- Shared-Use Trail (independent)

EXISTING

- Existing Shared-Use Trail
- Existing Sidewalk
- Existing Street (context)
- Existing Rail Line

0 0.5 1 2 3 4 Miles

ST. CHARLES PARISH, LOUISIANA

PROPOSED PEDESTRIAN NETWORK - BAYOU

WEST MATCHLINE: WEST BANK MAP SHEET

ST. CHARLES PARISH

SALVADOR WILDLIFE MANAGEMENT AREA

LAFOURCHE PARISH

PARISH BOUNDARY

OLD SPANISH TRL

BARBER RD

MAGNOLIA RIDGE RD

FAHRIG LN

TEXACO RD

RIVET LN

C02 LN

J B GREEN RD

VICS LN

AUTIN ST

WENGER RD

RIDGE RD

BAYOU GAUCHE RD

GRAND BAYOU RD

WPA RD

LUKE DR

MATTHEW DR

MATHERNE DR

DIXIE DR

PINE ST

KERI DR

RIVER RIDGE DR

PRIMROSE DR

OAK LN

LAKEWOOD DR

BEAUPRE DR

WILLOWDALE BLVD

ST. JOHN THE BAPTIST PARISH

LAKE PONTCHARTRAIN

ST. CHARLES PARISH

PARISH BOUNDARY

MISSISSIPPI RIVER

MATCHLINE: WEST BANK MAP SHEET

PROPOSED

- Railroad Crossing Improvements
- Vehicular Barriers
- Trailhead Locations
- Levee Access Path (switchback ramp)
- New Crossing Marking (unsignalized)
- Active Warning Beacon (unsignalized)
- Hybrid Beacon Crossing (major streets)
- Crossing Markings + On-Demand Signal (at existing signal)
- New Signal + Crossings + On-Demand Signal
- Marked Shared Lane
- Bike Lane
- Separated Bike Lane
- Shared-Use Trail (roadway right-of-way)
- Shared-Use Trail (independant)

EXISTING

- Existing Bicycle Routes
- Existing Street (context)
- Existing Rail Line

0 0.5 1 2 3 4 Miles

ST. CHARLES PARISH, LOUISIANA

PROPOSED BICYCLE NETWORK - EAST BANK

ST. JOHN THE BAPTIST PARISH BOUNDARY

ST. CHARLES PARISH

JEFFERSON PARISH BOUNDARY

MISSISSIPPI RIVER

MATCHLINE: BAYOU MAP SHEET

MATCHLINE: EAST BANK MAP SHEET

THOROUGHBRED AV

CC RD

AIRLINE DR

RIVER RD

APPLE ST

LEVEE SERVICE RD

PROSPECT AVE

RIVER PARK DR

GUM ST

COURTHOUSE LN

LEE LN

PLANTATION RD

S FASHION BLVD

ORMOND BLVD

LONGVIEW DR

ST ROSE AV

ALMEDIA RD

RIVER RD

ELLEN ST

KENNEDY ST

PATS CT

LEVEE RD

SINGS LN

PAUL MAILLARD RD

QUEENIE DR

DAVIS DR

NON SERV ROAD

PRIMROSE DR

OAK LN

WANDA ST

BIRCH ST

WILLOWDALE BLVD

ASH ST

TEXACO RD

BEAUPRE DR

CYPRESS DR

PROPOSED

- Railroad Crossing Improvements
- Vehicular Barriers
- Trailhead Locations
- Levee Access Path (switchback ramp)
- New Crossing Marking (unsignalized)
- Active Warning Beacon (unsignalized)
- Hybrid Beacon Crossing (major streets)
- Crossing Markings + On-Demand Signal (at existing signal)
- New Signal + Crossings + On-Demand Signal
- Marked Shared Lane
- Bike Lane
- Separated Bike Lane
- Shared-Use Trail (roadway right-of-way)
- Shared-Use Trail (independant)

EXISTING

- Existing Bicycle Routes
- Existing Street (context)
- Existing Rail Line

0 0.5 1 2 3 4 Miles

ST. CHARLES PARISH, LOUISIANA

PROPOSED BICYCLE NETWORK - WEST BANK

PROPOSED

- Railroad Crossing Improvements
- Vehicular Barriers
- Trailhead Locations
- Levee Access Path (switchback ramp)
- New Crossing Marking (unsignalized)
- Active Warning Beacon (unsignalized)
- Hybrid Beacon Crossing (major streets)
- Crossing Markings + On-Demand Signal (at existing signal)
- New Signal + Crossings + On-Demand Signal
- Marked Shared Lane
- Bike Lane
- Separated Bike Lane
- Shared-Use Trail (roadway right-of-way)
- Shared-Use Trail (independant)

EXISTING

- Existing Bicycle Routes
- Existing Street (context)
- Existing Rail Line

0 0.5 1 2 3 4 Miles

ST. CHARLES PARISH, LOUISIANA

PROPOSED BICYCLE NETWORK - BAYOU

WEST MATCHLINE: WEST BANK MAP SHEET

ST. CHARLES PARISH

SALVADOR WILDLIFE MANAGEMENT AREA

LAFOURCHE PARISH

PARISH BOUNDARY

OLD SPANISH TRL

BARBER RD

RIVET LN

C02 LN

J B GREEN RD

VICS LN

AUTIN ST

WENGER RD

RIDGE RD

HWY 90

WPA RD

632 GRAND BAYOU RD

BAYOU GAUCHE RD

306

MAGNOLIA RIDGE RD

FAHRIG LN

TEXACO RD

LUKE DR

MATTHEW DR

MATHERNE DR

DIXIE DR

PINE ST

KERI DR

RIVER RIDGE DR

PRIMROSE DR

OAK LN

LAKEWOOD DR

BEAUPRE DR

WILLOWDALE BLVD

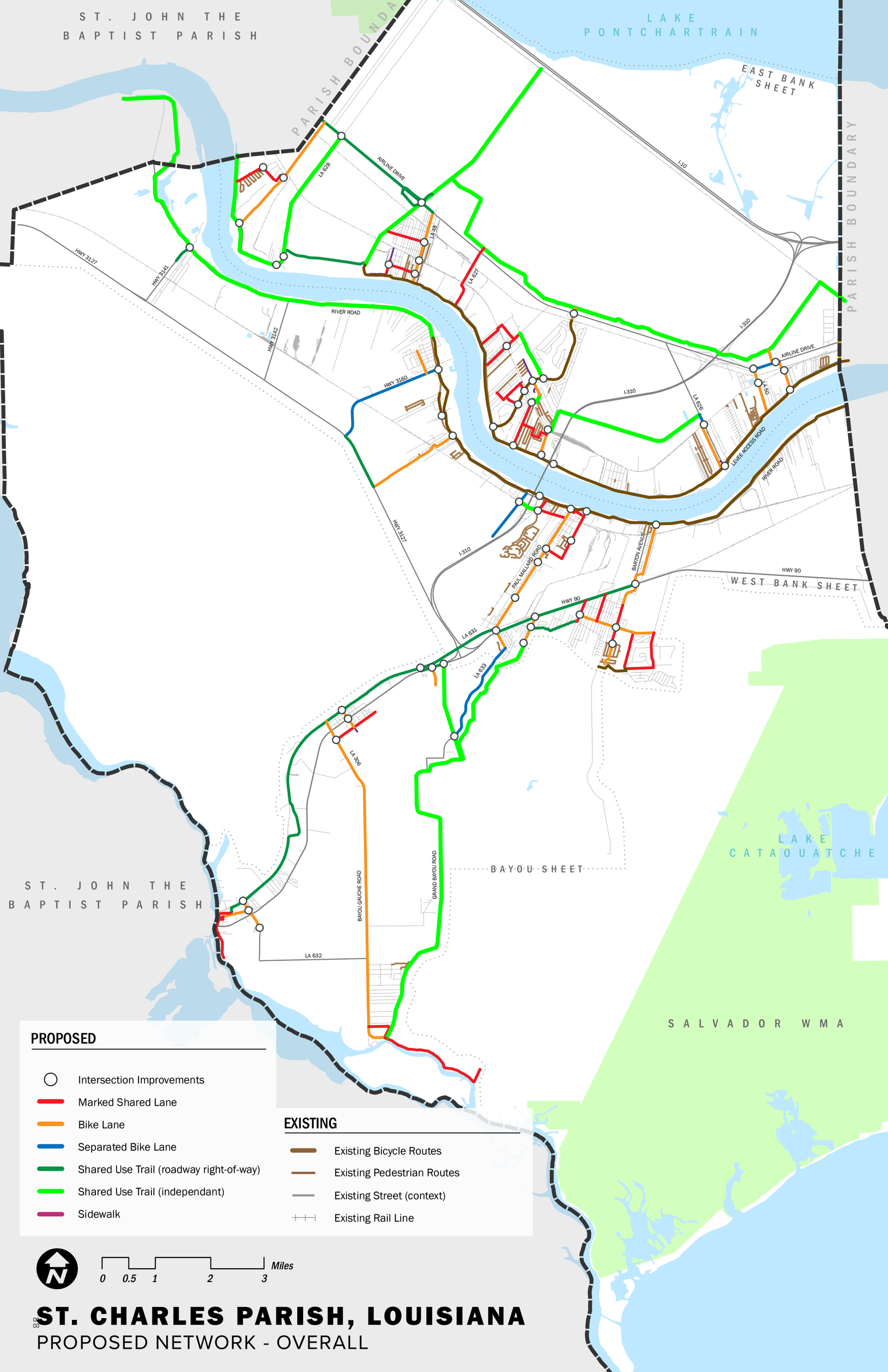
631

635

633

90

311



ST. CHARLES PARISH, LOUISIANA

PROPOSED NETWORK - OVERALL

East Bank Bridge Park

Figure 37 - East Bank Bridge Park (Crosswalk)

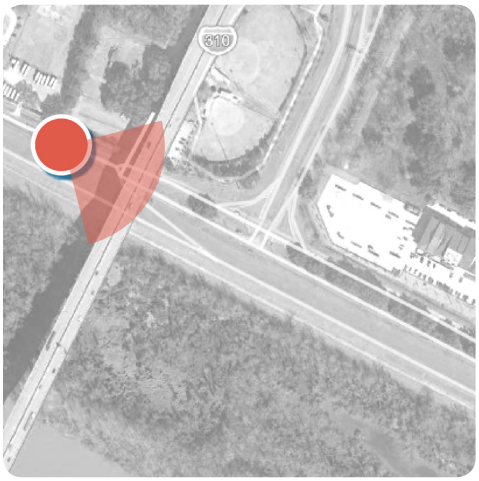


Figure 38 - East Bank Bridge Park Key Map

1. Hybrid Beacon for route crossing of major street.
2. High-Visibility Crosswalks raise awareness of crossing pedestrians and bicyclists. High-Visibility Crosswalks are visible to approaching vehicles and improve yielding behavior.
3. Stop bars and appropriate signage indicate where vehicles should stop. Stop bars should be located at least 8’-0” in advance of crosswalk.
4. 10’-0” Shared-Use Trail connects East Bank Bridge Park, Harry M Hurst Middle School, and the Destrehan Neighborhoods across River Road to the Mississippi River Levee Trail.

West Bank Bridge Park

Figure 39 - West Bank Bridge Park (Crosswalk)

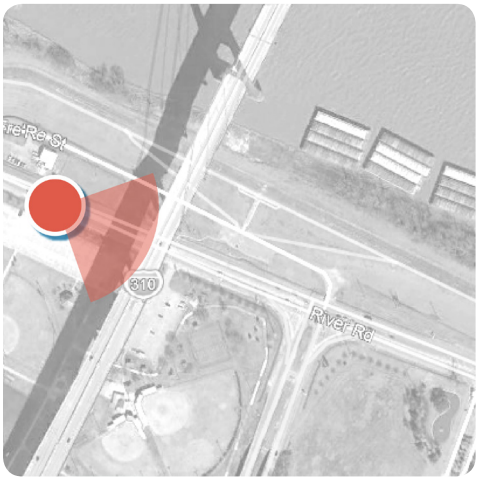


Figure 40 - West Bank Bridge Park Key Map

1. Hybrid Beacon for route crossing of major street.
2. High-Visibility Crosswalks raise awareness and are visible to approaching vehicles.
3. 10’-0” Shared-Use Trail connects West Bank Bridge Park across River Road to the Mississippi River Levee Trail.
4. Stop bars indicate where vehicles should stop.
5. Pedestrian and Bicycle Safety Island reduces the exposure time while crossing an intersection.

Lakewood Drive

Figure 41 - Lakewood Drive (Separated Bike Lane)

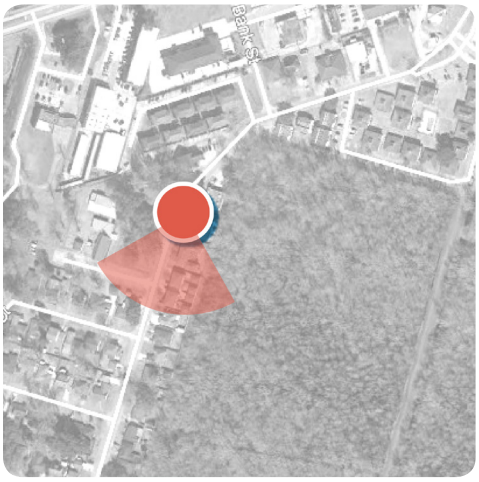


Figure 42 - Lakewood Drive Key Map

1. Buffered Bike Lane. 5'-6' minimum width with a painted buffer of at least 18".
2. Sidewalks provide dedicated spaces for pedestrians. A minimum 5' width is required although 6' is recommended.
3. No Parking-Bike Lane signage is recommended.

Lakewood Drive

Figure 43 - Lakewood Drive (Marked Shared Lane and Sidewalk)

Figure 44 - Lakewood Drive Key Map

1. Marked Shared Lanes or Sharrows alert drivers to the potential presence of bicyclists, and encourages bicyclists to safely position themselves.

2. Sidewalks provide dedicated spaces for pedestrians. A minimum 5’ width is required, although 6’ is recommended.

Lakewood Drive

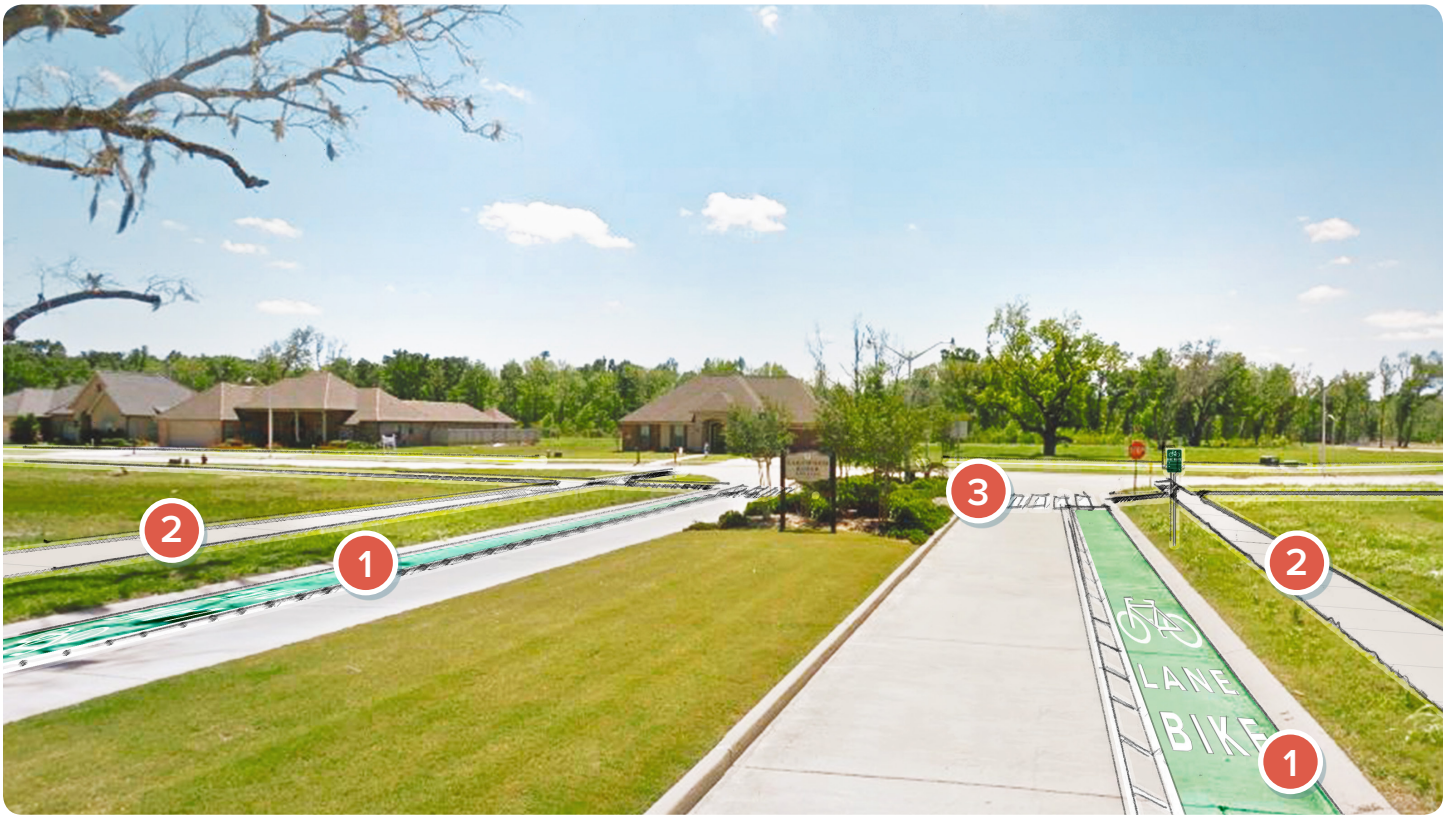


Figure 45 - Lakewood Drive (Separated Bike Lane and High-Visibility Crosswalk)

Figure 46 - Lakewood Drive Key Map

1. Buffered Bike Lane. 5’-6’ minimum width with a painted buffer of at least 18”.

2. Sidewalks provide dedicated spaces for pedestrians. A minimum 5’ width is required, although 6’ is recommended.

3. High-Visibility Crosswalks raise awareness of crossing pedestrians and bicyclists. High-Visibility Crosswalks are visible to approaching vehicles and improve yielding behavior.

Angus Drive

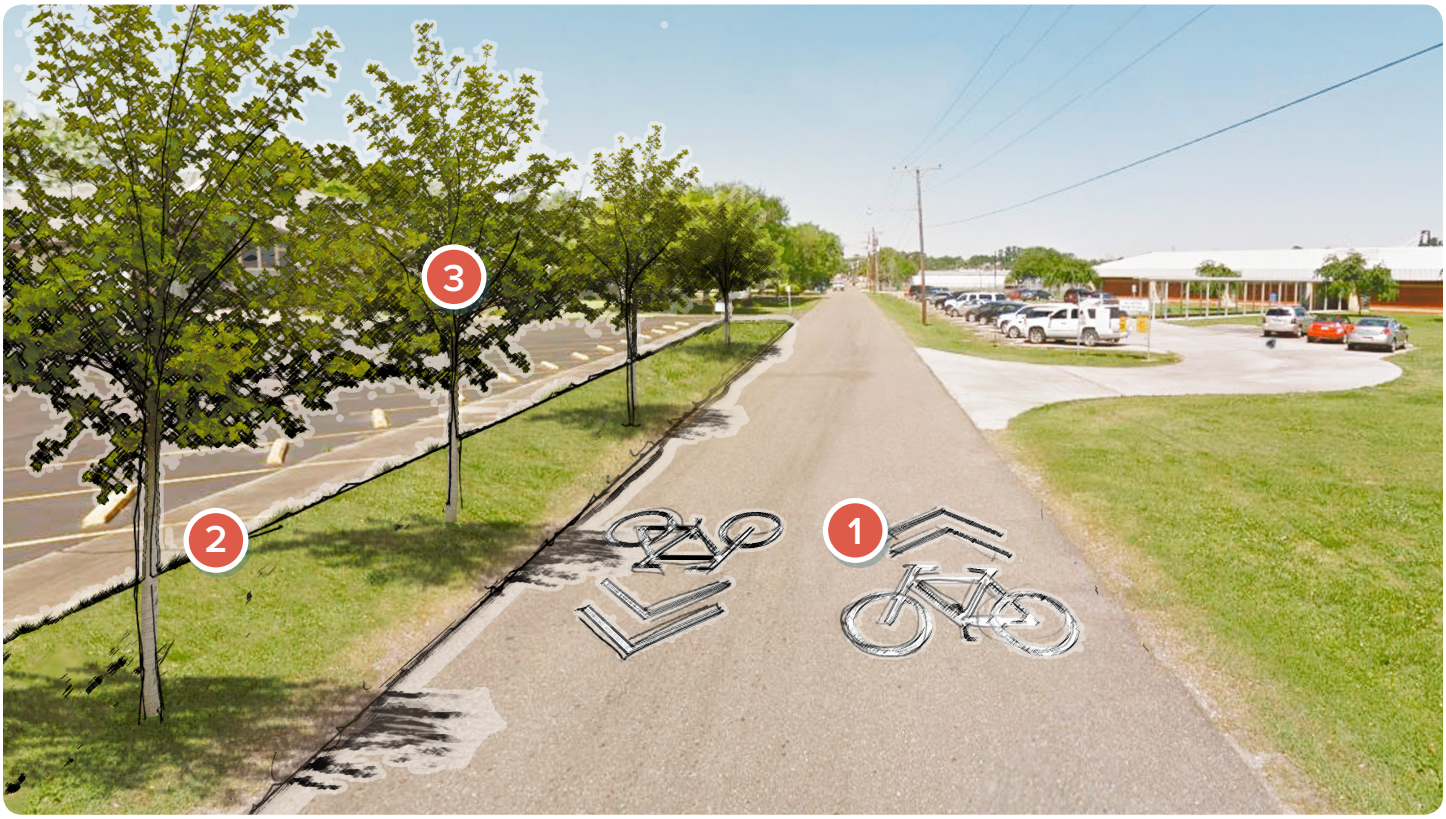


Figure 47 - Angus Drive (Marked Shared Lane)

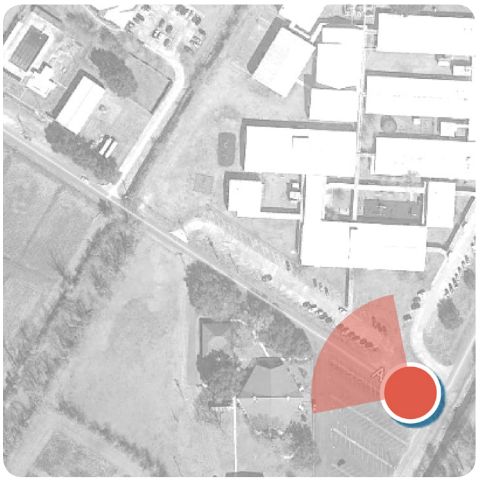


Figure 48 - Angus Drive Key Map

1. Marked Shared Lanes or Sharrows alert motor vehicle drivers to the potential presence of bicyclists, and encourages bicyclists to safely position themselves.

2. Removal of parking in the roadway right-of-way eliminates vehicles from backing into the roadway creating a safer environment.

3. A planted buffer between the roadway and existing sidewalk creates a safe and comfortable environment.

Old Spanish Trail

Figure 49 - Old Spanish Trail (Shared-Use Trail)

Figure 50 - Old Spanish Trail Key Map

1. Shared-Use Trail within the Old Spanish Trail roadway right-of-way provides a continuous corridor for people walking and riding bicycles.

2. A planted buffer between the roadway and shared-use trail creates a safe and comfortable environment.

Entergy Easement

Figure 51 - Entergy Easement (Shared-Use Trail)

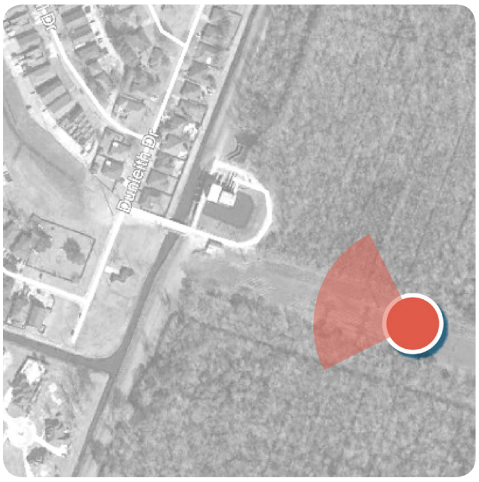


Figure 52 - Entergy Easement Key Map

1 Shared-Use Trail, independent of a roadway along the existing Entergy Right-of-Way, is separate from motor vehicle traffic. Shared-Use Trail signage aids users in understanding the rules of the trail.

This page intentionally left blank

This page intentionally left blank

6 IMPLEMENTATION

This page intentionally left blank

6. IMPLEMENTATION

This section identifies funding sources available to St. Charles Parish for implementing the projects identified in Section 5 (Proposed Improvements) and recommends additional policy changes to complement the infrastructure projects in this report. These recommendations include designating a parish pedestrian and bicycle coordinator who would be responsible for overseeing program implementation and developing and implementing progressive local design standards for all projects.

Funding Sources

The following list includes possible funding sources that should be considered when discussing parish-wide implementation of safety measures and infrastructure improvements for pedestrians and bicyclists. The potential funding sources listed are administered differently and are described accordingly:

Federal Funding

The Fixing America's Surface Transportation (FAST) Act is the U.S. transportation bill that creates and funds multiple programs that support bicycle and pedestrian planning, design, construction and "soft" infrastructure using federal gasoline tax. It provides the majority of program funding for bicycle and pedestrian facilities. Below is a list of the most useful funding tools for projects identified in the St. Charles Parish Comprehensive Pedestrian and Bicycle Master Plan. Many programs now have criteria based on increasing safety and reducing crashes.

Highway Safety Improvement Program (HSIP)

DOTD coordinates and collaborates across Louisiana to develop the Strategic Highway Safety Plan (SHSP). The methodology deploys site-based and risk-based (systemic) approaches to reduce the number and severity of crashes on state and local roadways. Project identification is largely based on evaluation of crash data. LADOTD District offices and the nine Regional Safety Coalitions may submit infrastructure projects to LADOTD headquarters for consideration. Regional emphasis area action plans prioritize strategies and seek funds (both for infrastructure and non-infrastructure) to implement those strategies. Bicyclist and pedestrian safety is an emphasis area in the New Orleans region due to a large number of crashes. Proven infrastructure countermeasures are selected and applied under the site-based approach to reduce fatalities and injuries at tangible crash locations. Under the risk-based approach, countermeasures may also be deployed where a location has no crashes or where very few crashes occur but the site has similarities to a location that experiences frequent, serious, or fatal crashes.

Local Road Safety Program (LRSP)

The Local Road Safety Program (LRSP) is one of LADOTD's Louisiana Public Agency programs that provides an opportunity for local governments to use federal-aid funds for safety improvements on locally-owned and locally-maintained roads. It is a mechanism to implement the infrastructure component of the LADOTD Statewide Strategic Highway Safety Plan (SHSP) at the local level. A parish or municipality is eligible to apply for safety-related improvement projects that are located only on locally-owned roads. LRSP projects are currently funded up to 100%, when eligible. Utilization of proven safety countermeasures are encouraged when developing a project to address local safety issues. LRSP applications are accepted year-round and reviewed quarterly.

Louisiana Highway Safety Commission (LHSC)

The Louisiana Highway Safety Commission administers safety funds based on guidelines promulgated by the National Highway Transportation Safety Administration (NHTSA) and Federal Highway Administration (FHWA) for non-infrastructure projects. It is focused on influencing roadway users' behavior to reduce fatalities and injuries. The grant program funds education, research, safety standards, and enforcement efforts.

Safe Routes to Public Places Program (SRTPPP)

The Safe Routes to Public Places Program (SRTPPP) is a LADOTD program to facilitate the development and implementation of projects that will improve safety for

pedestrians, bicyclists, and transit users of all ages and abilities on all public roads (state-owned and locally-owned). Federal funds provide 100% of project costs with no required local match within the limits of the LADOTD's project funding commitment and eligibility requirements. Any public agency is eligible to submit a project application.

Transportation Alternatives Program (TAP)

The Transportation Alternatives Program (TAP) program is administered by the LADOTD for projects defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, Recreational Trail Program projects, Safe Routes to School projects and projects for planning, designing, or constructing boulevards and other roadways that are largely in the right-of-way of formerly divided highways. Federal funds provide up to 80% of project construction costs with local matches providing the remaining funds.

Recreational Trails Program (RTP)

The Recreational Trails Program (RPT) supports construction and maintenance of any trail that provides recreation (hiking, running, wheelchair use, bicycling, in-line skating, equestrian use, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or other off-road motorized vehicle use). Planning, environmental documentation, and sidewalks are not eligible. It is a federally-funded program administered by the Louisiana Office of State Parks. Projects should further a recreational goal that is identified by the most recent Louisiana Statewide Comprehensive Outdoor Recreation Plan (SCORP) or in a local/regional comprehensive plan. Federal funds provide up to 80% of project cost and donation of materials; right-of-way and services at fair-market value may be counted toward the local match.

Land and Water Conservation Fund (LWCF)

The Land and Water Conservation Fund (LWCF) promotes a broad scope of outdoor recreation, ranging from playgrounds to ball fields to walking trails. Bicycle and pedestrian recreational facilities, structural or site design, engineering, pedestrian bridges, site preparation, and boardwalks may be eligible. Projects should further a recreational goal identified by the most recent Louisiana Statewide Comprehensive Outdoor Recreation Plan (SCORP) or in a local/regional comprehensive plan. It is a federally-funded program controlled by the Department of the Interior in consultation with the National Park Service. The Louisiana Office of State Parks, Division of Outdoor Recreation manages statewide administration. Federal funds provide up to 50% of a project cost and donation of materials; right-of-way and services at fair market value may be counted toward the local match.

Surface Transportation Program (STP>200K or STP <200K funds)

The Metropolitan Planning Organization for the New Orleans region controls federal discretionary funding for four (4) urban areas; New Orleans' South Shore with over 200,000 in population (Orleans, Jefferson, St. Bernard, Plaquemines, St. Charles and St. John parishes) and Slidell, Mandeville/Covington, and Tangipahoa each with under 200,000 in population. Projects are selected for inclusion in the regional Transportation Improvement Program (TIP) year-round by the Transportation Policy Committee of the Regional Planning Commission after technical evaluation. Eligibility includes federal-aid highways, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals. STP federal funds provide up to 80% of a project cost with a local sponsor providing the remaining 20%. Projects may be identified through feasibility studies, parish planning efforts, and from a wide array of citizen input.

State Funding

State Transportation Trust Fund (Non-Federal)

Louisiana has a 20 cent fuel tax that goes into the State Transportation Trust Fund. A portion is distributed to the parishes of Louisiana based on a per capita formula by population. This funding source has previously been used for transportation projects

throughout St. Charles Parish, including partial annual funding of the Road Maintenance Program. Roadways that are recommended for safety improvements within this report and which are included in the base bid of future Road Maintenance Program projects are eligible for this state funding.

Road Transfer Program

The Road Transfer Program is a LADOTD program that seeks to reduce the amount of public roads that are owned by the State. This voluntary program allows for a transfer of road ownership to local governments. The State will repair the roads prior to transfer, and will credit the receiving government with 40 years of maintenance for highway capital projects.

Parish Funding

St. Charles Parish Property Tax

The Parish property tax is annually distributed for transportation projects. As an example, the Road Maintenance Program, which rehabilitates parish-maintained asphalt roadways, operates by using a portion of this funding source. The roadways discussed in this report that only require striping should be considered candidates for funding under this source, even if the road surface is not asphalt.

Private Funding

St. Charles Parish may pursue donations or public-private partnerships with industrial stakeholders in St. Charles Parish. Examples of private funding include adoption and financial support of upgrades to a particular corridor or an intersection improvement, sponsorship of a parish-represented bike ride or children's "bike rodeo", or a grant to cover the cost of a Parish Pedestrian and Bicycle Coordinator.

Recommendations

Pedestrian & Bicycle Coordinator

This report recommends that St. Charles Parish designate a parish Pedestrian and Bicycle Coordinator. An increasing number of municipalities nationally have designated Pedestrian and Bicycle Coordinators to oversee improvements of pedestrian and bicycle infrastructure and dedicated pedestrian and bicycle programming. Responsibilities of the St. Charles Parish Coordinator would include:

- review development proposals to ensure that local pedestrian and bicycle requirements and ordinances are incorporated
- develop educational programming and outreach materials for pedestrian and bicycle safety
- serve as the public contact for walking and bicycling inquiries and complaints
- coordinate with local pedestrian and bicycle advisory committees
- coordinate with neighboring parishes, transit agencies, and public health officials to implement policies and projects
- coordinate parish goals regarding state roadways with state agencies that are included in the Pedestrian and Bicycle Master Plan

Enforcement, Education, & Encouragement

This report recommends that St. Charles Parish create an Engagement Plan outlining a process to guide encourage, enforce, and educate all residents and containing goals and metrics for evaluating progress. Engagement should also ensure that the public understands how various transportation modes can operate safely and smoothly within the same overall network.

The St. Charles Parish Sheriff's Office and Louisiana State Police are responsible for enforcing laws that protect roadway users within the parish, including pedestrians and bicyclists. The RPC has recently campaigned in the Greater New Orleans area to promote the Collin Goodier Protection Act (LA RS 32:76.1), which states that a vehicle passing a bicyclist must give the bicyclist a minimum three-foot clearance. Vehicles are also supposed to stop for pedestrians in a marked or unmarked crosswalk.

Likewise, bicyclists should be made aware of the language contained in LA RS 32:197, which describes laws that bicyclists must abide by when operating on roadways and bike paths. This information is already included in the LA Drivers Manual and instructional publications for drivers throughout the state. St. Charles Parish should work with the State and local police as well as Parish judges to make sure the enforcement and judicial community are familiar with all state laws and to request their support to encourage, enforce, and/or penalize illegal behavior. Police might be invited to be part of local school or community training activities for children.

To educate the public on bicycle safety and laws, it is recommended that the Parish employ public schools to generate awareness of the laws that govern roadway sharing between bicyclists and vehicles. To reach all residents, the Parish should consider measures including distributing bike and pedestrian safety laws with water or utility invoices, leverage the recreation department to create fun campaigns, or support parish social rides.

Design Standards

As noted in Section 3, the only design standards pertaining to pedestrian and bicyclist paths are for sidewalks. An additional responsibility of the Pedestrian and Bicycle Coordinator position, or other responsible official, should be to strengthen design standards to match the goals and address the findings of this plan.

When developing design standards, it is recommended that St. Charles Parish adhere to the most current Federal Highway Administration's guidelines when designing future path geometry (i.e., width, curves, grades, etc). It is recommended that all future paths, that are not associated with roadways, constructed with an asphalt surface be a depth of 4" as the minimum thickness for asphalt, with a minimum of 6" compacted base course under the asphalt. The St. Charles Parish Department of Public Works should define the standards for building paths, including the asphalt mix and base course type.

Figure 53 - Roadway Safety Signs

Policy Changes

A number of circumstances currently limit or stand in direct opposition to the primary goals of this plan by impacting access management. Therefore, policies related to the following topics should be created or amended to better align parish and state laws in support of mobility and safety within a multi-modal transportation system.

Illegal Parking

Many businesses in St. Charles Parish have claimed parking space within the right-of-way or encourage illegal consumer parking along the right-of-way. A strong example of this is the abundance of roadside parking along US 90 between the I-310 interchange and River Ridge Drive. Parish police should increase enforcement on local roads that will address the abundance of illegal parking. Furthermore, due to the large amount of state-owned road mileage in the parish, the project team recommends that St. Charles Parish actively engage LADOTD and State Police in a discussion about regulating and enforcing laws against parking on the shoulder of state roads at commercial business sites. These measures will create

space for walking and biking facilities and reduce the vulnerability of non-motorized users.

The parish or state, as owners of the right-of-way, may wish to permit parking in exchange for appropriate compensation that could be accumulated for the purpose of improved pedestrian and bicycle facility construction and corridor beautification in the future. By establishing a parking policy on state or parish right-of-way the governing authority will create a tool to regulate use while working toward enhancements on behalf of key pedestrian and bicycle corridors.

Excessive Driveway Widths and Distance from Roadway Corners

The project team recommends that St. Charles Parish pass an ordinance limiting the number and width of driveway entrances on commercial property, particularly along state highways. This measure will contribute to decreasing conflicts between motorized and non-motorized travelers. The project team also recommends that the parish increase enforcement of existing regulations addressing driveway widths, ensure compliance with new driveway permits for construction projects, and mandate driveway width reductions during major renovation projects. Finally, the parish should develop and enforce planning and zoning standards for corner clearance (the distance between a driveway and its nearest roadway corner). Removing or limiting the number of unnecessary driveways and reducing excessive widths will enhance the pedestrian experience and make space available for additional streetscaping and stormwater management.

Roadway Speed

Growth of previously-undeveloped areas of St. Charles Parish has increased the number of locations where vehicles may stop, slow, and make turns on the road network. The project team recommends that the parish and state evaluate network locations where reducing posted speeds may be appropriate. Slower speeds allow vehicles to anticipate turns that intersect with bike paths and sidewalks, increasing driver awareness of non-motorized users.

Neighborhood Sidewalks

The existing sidewalk ordinance, described in Section 2 (Existing Conditions), requires individual lot owners to install and maintain sidewalks that pass through their property. This requirement does not align with the plan's goals. Instead, the project teams recommends that the parish adopt subdivision regulations that require developers to install and repair sidewalks. This amendment will increase the likelihood of facility conditions and, resultingly, its safety to remain satisfactory.

Conclusion

Implementation of projects will require a sustained collaborative effort over a long period. The funding sources described in this section are available to aid implementation of the proposed network improvements. The project team encourages the parish to pursue policies that educate road users, encourage walking and biking, and enforce safe behavior; and to adopt design standards and regulations that improve the number and quality of facilities for non-motorized users.

This page intentionally left blank

7 CONCLUSION

This page intentionally left blank

7. CONCLUSION

Figure 54 - Aerial View of Hale Boggs Memorial Bridge

The St. Charles Parish Pedestrian and Bicycle Master Plan identifies infrastructure projects and policy changes that will improve the safety and ease of walking and biking in St. Charles Parish. The recommended projects and programming are consistent with the plan's goals of improving safety, increasing transportation options, and spurring economic development. The project team expects the plan's proposed infrastructure improvements, educational programming, and enforcement measures to improve safety, enhance awareness, and encourage confidence by facility users.

This page intentionally left blank

List of Figures

List of Tables

Glossary of Acronyms

AASHTO	American Association of State Highway and Transportation Officials
BNSF	Burlington Northern Santa Fe Railway
CN	Canadian National Railway
FAST	Fixing America's Surface Transportation
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
HAWK	High-Intensity Activated Crosswalk
HSIP	Highway Safety Improvement Program
KCS	Kansas City Southern Railway Company
LADOTD	Louisiana Department of Transportation and Development
MRT	Mississippi River Trail
PLD	Pontchartrain Levee District
PMT	Paul Maillard Transportation
PROWAG	Proposed Right-of-Way Guidelines
RPC	Regional Planning Commission
RPTA	River Parishes Transit Authority
SHSP	Strategic Highway Safety Plan
STP	Surface Transportation Program
TIP	Transportation Improvement Program
TAP	Transportation Alternatives Program
USACE	United States Army Corps of Engineers

Works Cited

Section 3

i St. Charles Parish Road Maintenance Manual. 2017.

ii Louisiana State University. “Louisiana Crash Data Reports.” http://www.datareports.lsu.edu

iii St. Charles Parish. “Ama Town History.” http://www.stcharlesparish-la.gov/departments/economic-development-and-tourism/parish-history/town-histories/ama-town-history

iv St. Charles Museum and Historical Association. “Early Railroads.” http://www.historyofstcharlesparish.org/index.php/19th-century/antebellum-period-1803-1861/early-railroads

v St. Charles Museum and Historical Association. “Wheels, Wheels, Wheels.” http://www.historyofstcharlesparish.org/index.php/20th-century/first-industrial-era-1901-1950/cultural-changes/wheels-wheels-wheels

vi St. Charles Museum and Historical Association. “The Twentieth Century.” http://www.historyofstcharlesparish.org/index.php/20th-century/