

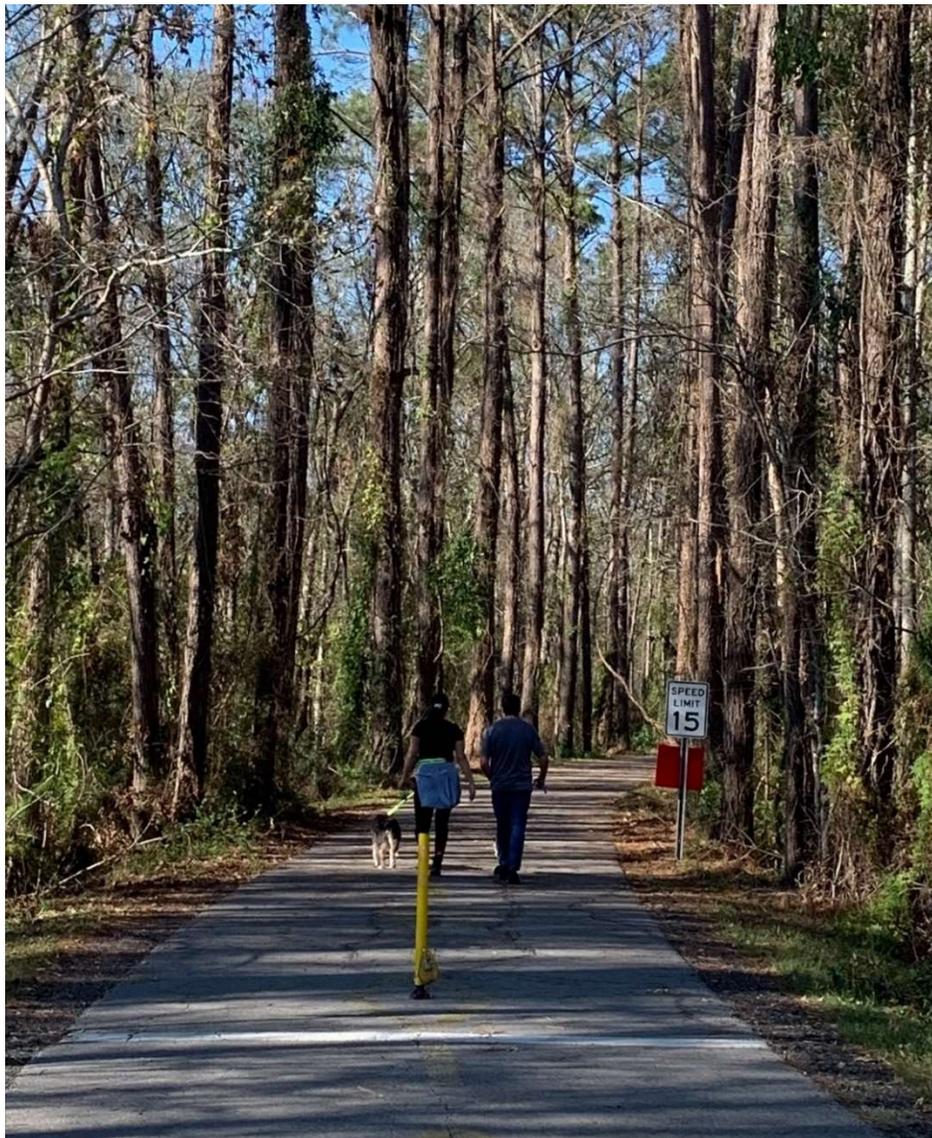


City of Mandeville Pedestrian and Bicycle Plan

Final Report

RPC Task MC-1.22: FY-22 UPWP / State Project No. H.972422.1

March 31, 2023



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City of Mandeville Pedestrian and Bicycle Plan

Final Report

RPC Task C-1.22: FY-22 UPWP / State Project No. H.972422.1

March 31, 2023

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Acronyms and Abbreviations

AADT	Average Annual Daily Traffic
ACS	American Community Survey
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
CC	Country Club
Elem.	Elementary
FHWA	Federal Highway Administration
HAWK	High-Intensity Activated Crosswalk
HS	High School
HV	Heavy Vehicle
Hwy	Highway
LA	Louisiana
LADOTD	Louisiana Department of Transportation and Development
LPI	Leading Pedestrian Interval
MHS	Mandeville High School
MPO	Metropolitan Planning Organization
MS	Mississippi
MUTCD	Manual on Uniform Traffic Control Devices
NORPC	New Orleans Regional Planning Commission
PBIC	Pedestrian and Bicycle Information Center
PMC	Project Management Committee
ROW	Right of Way

RPC	Regional Planning Commission
SB	Southbound
SP	State Park
USGS	United States Geological Survey
VPD	Vehicles Per Day

Appendices

Appendix A – Project Management Committee Survey

Appendix B – Data Collection Memo

Appendix C – Existing Field Inventory Collection

Appendix D – Existing Network Projects List

Appendix E – Volume Data Collection

Appendix F – Detailed Cost Estimates

Appendix G – Complete Streets Example Policies

Appendix H – Project Management Committee Meeting Summaries

Appendix I – Public Meeting Summary and Comments

1 Introduction

The Regional Planning Commission (RPC) for Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles, St. John the Baptist, St. Tammany, and Tangipahoa Parishes, in partnership with the City of Mandeville, contracted with Arcadis U.S., Inc. (Arcadis) to conduct, develop, and deliver the development of an updated Pedestrian and Bicycle Master Plan for the City. This plan will recommend actions and strategies for improving mobility for active transportation users within the City, prioritized by safety, accessibility, and connectivity

The City has identified the need to revise and update its latest comprehensive Bicycle and Pedestrian Master Plan created in 2007 with some sections updated in 2012. Some recommendations from the existing plan have already been implemented, others are under construction, and some recommendations are no longer applicable due to changes in land use and traffic conditions.

The plan's project team assessed best practices, policies, and programs to prioritize potential projects. The team also reviewed current design standards for implementation of new projects. The purpose of this plan is to serve as a guide to implementing a successful pedestrian and bicyclist program, focusing on the needs of the community.

The plan focuses on increasing mobility, connectivity, and improving safety and quality of life for active transportation users in the City of Mandeville. The following four tasks are considered major components of the plan:

- Development of a safe non-motorized network that connects people with major facilities and destinations.
- Development of recommendations for improvements and treatments to existing facilities that will enhance connectivity and accessibility to all residents within the City of Mandeville and St. Tammany Parish.
- Development of a Complete Streets Policy for the City of Mandeville.
- Stakeholder engagement and public outreach.

1.1 Project Management Committee

1.1.1 Project Management Committee Meetings

As part of the plan development, a Project Management Committee was formed to discuss plan progress, review submittals, and meet to discuss different ideas and proposed projects for the plan. The PMC consisted of members of Arcadis, the New Orleans Regional Planning Commission, members of the City of Mandeville elected officials, City of Mandeville and St. Tammany Parish Department of Public Works and Planning Divisions, local bicycle organizations, and citizens of the study area.

Four PMC meetings took place to discuss different stages of plan development and to receive feedback and comments. The meeting minutes and sign in sheets for each of these PMC Meetings may be found in Appendix H.

1.1.2 Public Meeting

A public meeting hosted by the PMC was held on January 24, 2023, for the residents of the area and general public to see the progress of the plan including the vision and goals of the plan, existing facility conditions, and proposed project locations and descriptions. For those residents who could not attend in person, the City posted the handout and presentation describing the plan progress and proposed projects to the City's social media pages. Public comments were received both at the public meeting and after a week of the video and handout

being posted to the City’s social media accounts. A summary of the meeting including all public comments received, handout, and presentation are included in Appendix I.

2 Vision, Goal, and Strategy Development

A vision is a clear, inspirational, and concise definition of a future condition. This plan’s vision serves as a guide for choosing current and future courses of action. A goal is a desired result toward which to aim for. Multiple strategies are typically developed to support each planning goal. Strategies more fully describe the goal and can be considered intermediate steps to reaching the goal. They are more focused and often can be measured in quantitative terms. Vision, goals, and strategies identify potential needs and indicate how the community may want to see these needs addressed.

The purpose of this Plan is to evaluate the existing conditions of the bicycle and pedestrian infrastructure in the City and develop implementable recommendations to improve and enhance bicycle and pedestrian mobility. An accessible and safe bicycle and pedestrian network will result in increased opportunities for Mandeville residents and visitors to walk and bike to neighborhoods, schools, parks, recreational centers, and other destinations. Following careful evaluation of the plan’s purpose and need, other case studies, and best practices the Project Management Committee has developed the vision, goals, and identified detailed strategies to reach each goal. The vision, goals, and strategies are presented below.

2.1 Vision Statement

The vision is intended to serve as a guide for choosing current and future courses of action. The vision statement is based on a survey of the Project Management Committee for the project and the results may be found in Appendix A. It guides the planning process and outcomes by defining the desired future for the City of Mandeville. The vision statement for this plan is shown below.

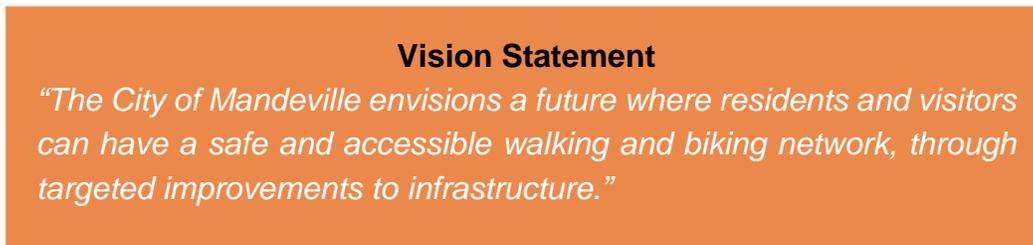


Figure 2-1: Proposed Plan Vision Statement

2.2 Goals and Strategies

A goal provides direction for planning, evaluating plans, and guiding projects and actions. Goals are broad general intentions that are generally difficult to measure. Strategies are specific measurable statements of the actions needed to carry out a plan. Three goals were developed to support the vision of the Bicycle and Pedestrian Plan of the City of Mandeville. The recommended strategies to reach each goal are listed with them below.

Goal One: Improve bicycle and pedestrian safety

- Create a safe and well-connected bicycle and pedestrian network. Providing a well-connected network based on dedicated routes for people walking and biking is likely to improve safety.

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- Identify dangerous locations and safety deficiencies.
- Provide low-cost and easy-to-implement recommendations to improve the existing infrastructure. Low-cost and easy-to-implement recommendations will provide better benefit-to-cost ratios and allow for more improvements in a shorter period.
- Improve the most dangerous road crossings and intersections to provide a safe cycling and walking environment. Finding ideal crossing locations for people walking and biking with proper advanced warning which will provide a safer environment for all users.
- Provide educational programs to increase safety awareness, health, and wellness within the community.

Goal Two: Create an accessible pedestrian and bicycle network

- Improve transportation equity, to provide access to all people, emphasizing safe walking and biking access for traditionally disadvantaged communities and people who rely on walking and biking as a primary mode of transportation.
- Expand access to public facilities and attractions.
- Provide connectivity to other planned improvements to the bike and pedestrian network.
- Provide recommendations for walking access to main destinations within a one-mile radius, which is approximately a 20-minute walk for the average pedestrian. Similarly, biking access is within a three-mile radius, which is an average 20-minute bike ride.
- Address deficiencies in the existing system that currently makes portions of the existing system inaccessible.

Goal Three: Support economic development

- Create a Bike/Ped friendly environment in the City and the region to support existing businesses and help attract new residents, businesses, and visitors.
- Provide trail improvements in areas that enable short and comfortable active transportation to key destinations including parks, schools, restaurants, and attractions.
- Provide recommendations for an attractive, affordable, and flexible non-motorized transportation system.
- Provide safe and visible bicycle parking facilities in the Old Mandeville area to support businesses.

3 Data Collection

As part of the development of the plan, the project team needed to determine the state of the current bicycle and pedestrian infrastructure. To do so, it was necessary to evaluate a wide range of existing conditions across the City of Mandeville and study area. The project team investigated the following data sets to have a better grasp of the existing conditions:

- Existing and planned bicycle facilities.
- Federal aid network with functional classifications.
- Existing land use, community facilities, and destinations.
- Demographic variables.
- Existing crash data.
- Existing statewide long-range bicycle map and other relevant metropolitan planning organization (MPO) transportation plans.
- Existing Field Inventory
- Count data collection from 11 locations described in the Data Collection Memo (Appendix B).

Targeted fieldwork to obtain a general assessment of conditions was also conducted as part of this data collection effort. The project team coordinated with agencies to collect data. Table 3-1 provides a recap of these topics, the data providers, and the data collected.

Table 3-1: Data Collection Summary

Topic	Data Provider	Data-Set Name
Bicycle Facilities	<ul style="list-style-type: none"> • NORPC 	<ul style="list-style-type: none"> • Existing and Planned Bicycle Facilities On-Street • Existing and Planned Bicycle Facilities Off-Street • Existing Trails
Federal Aid Network	<ul style="list-style-type: none"> • City of Mandeville GIS Department 	<ul style="list-style-type: none"> • Street classification
Existing Land Use, Community Facilities, and Destinations	<ul style="list-style-type: none"> • City of Mandeville GIS Department • United States Geological Survey (USGS) 	<ul style="list-style-type: none"> • Land Use and Zoning • Lots and Parcels • Municipal Parks • Medical facilities • Educational facilities
Demographic Variables	<ul style="list-style-type: none"> • NORPC • U.S. Census Bureau 	<ul style="list-style-type: none"> • American Community Survey (ACS) 2019 5-year estimates by census block group
Existing Crash Data	<ul style="list-style-type: none"> • LADOTD 	<ul style="list-style-type: none"> • Crash data collected from the LADOTD Crash1 database for the years 2015-2019.
Existing statewide long-range bicycle map and other relevant metropolitan planning organization (MPO) transportation plans	<ul style="list-style-type: none"> • City of Mandeville 	<ul style="list-style-type: none"> • City of Mandeville Comprehensive Plan 2007. • City of Mandeville Bicycle and Pedestrian Master Plan – Update 2007. • 2008 Sidewalk Improvements Priority Map. • Original Master Plan and Sidewalk Survey Map. • Bicycle and Pedestrian Plan for the City of Mandeville – Update Proposed Master Plan Map. • Bicycle and Pedestrian Plan for the City of Mandeville – Update Proposed Projects Map. • Bicycle and Pedestrian Plan for the City of Mandeville – Update Sidewalk Survey Map.

Topic	Data Provider	Data-Set Name
Existing Field Inventory	<ul style="list-style-type: none"> Arcadis 	<ul style="list-style-type: none"> Existing conditions in various locations distributed within the study area.
Count Data Collection	<ul style="list-style-type: none"> Arcadis 	<ul style="list-style-type: none"> 8 locations for all modes of transportation (motorized vehicles, bikes, and pedestrians). 3 locations for pedestrians and bikes.

4 Summary of Findings

4.1 Pedestrian and Bicycle Facilities Network

The NORPC provided the existing and planned bicycle facilities in the GIS shapefile format. The facilities were separated into two categories: on-street and off-street.

The existing facilities include mostly multi-use paths (off-street) concentrated in the downtown area specifically along Lakeshore Drive, the Tammany Trace Trail, and portions of the West Causeway Approach and Lonesome Road. The condition of the off-street facilities vary by route. One of the most significant issues was connectivity with the main places of interest, such as hospitals, schools, and public attractions. There are sections of bicycle lanes (on-street) along Massena Street connecting Sunset Point Park and Monroe Street, however the pavement markings for these facilities require maintenance activities.

The NORPC has also provided the planned bicycle and pedestrian facilities that include a combination of bicycle lanes and multi-use paths. These planned facilities come from the plan created in 2007. The facilities are mainly distributed along US 190 and LA 22 and will connect with the Tammany Trace. Figure 4-1 is a map showing the existing and planned bicycle facilities in the City of Mandeville and study area.

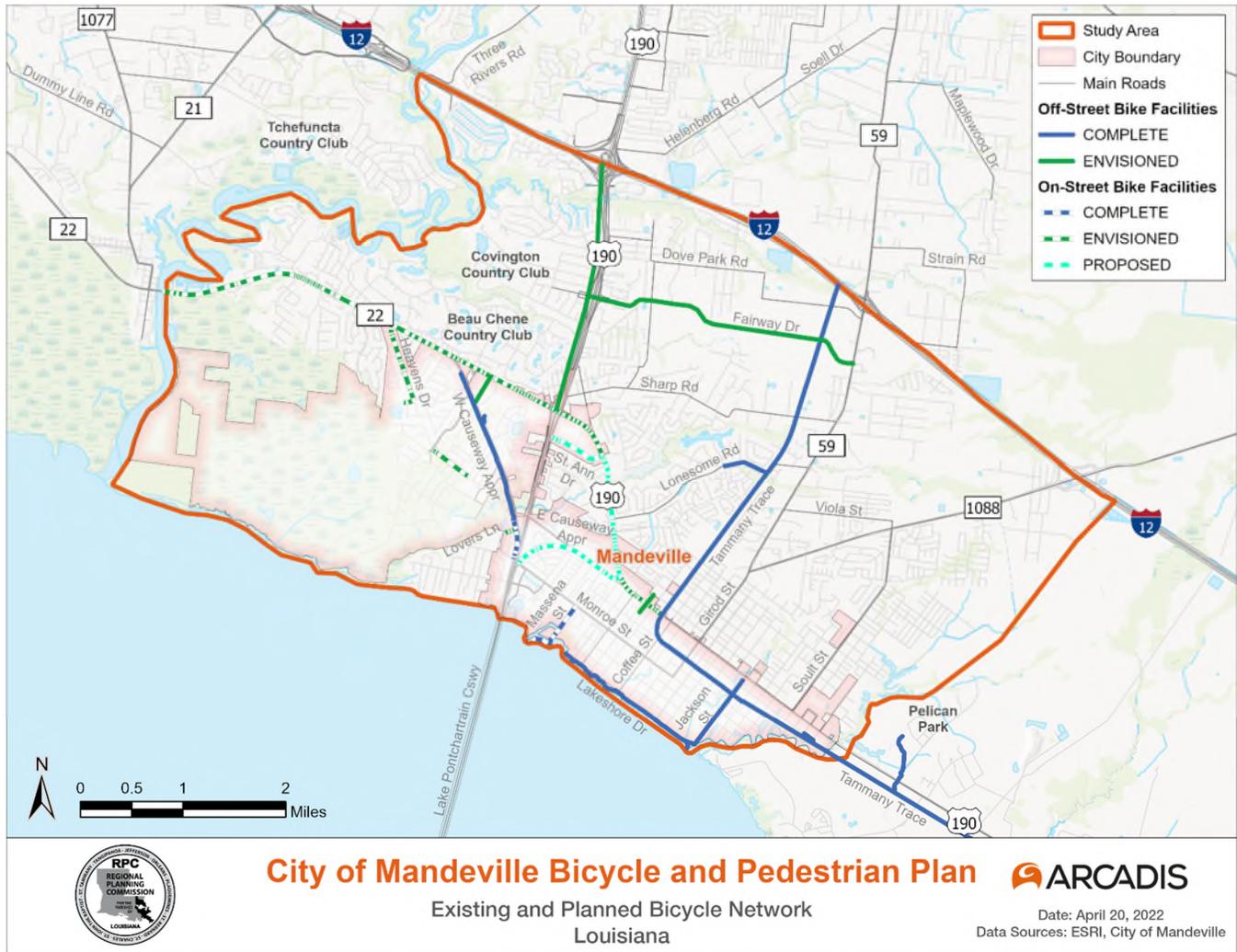


Figure 4-1: Existing and Planned Bicycle and Pedestrian Facility Map

4.2 Federal Aid Network

The project team received the functional classification shapefile from the City of Mandeville. The city classifies routes into seven functional classes: Interstate, Freeway, Expressway, Principal Arterial, Minor Arterial, Major Collector, and Minor Collector. Figure 4-2 is a map that shows the street classifications.

The roadway network of the City of Mandeville includes the Lake Pontchartrain Causeway Bridge that connects the city to its southern neighbors: Kenner, Metairie, and New Orleans. The West Causeway Approach and East Causeway Approach are minor arterials that connect businesses, residential areas, and government buildings for both residents and visitors of the city. The Lake Pontchartrain Causeway Bridge connects in the north with the principal arterial: US 190, which connects with Interstate 12, LA 22, and LA 59. LA 22 is another principal arterial, moving a high volume of traffic and connecting many communities. Additionally, Monroe Street serves as a main east-west route from North Causeway Boulevard to Old Mandeville. Most of the commercial activities are located along Girod Street and US 190/LA 22.

The City of Mandeville has stated on its website that soon they will begin the beautification project under the Monroe Street overpass at North Causeway Boulevard. This intersection is a key connection for the citywide

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bicycle path to the east and west. Additionally, the city has two major projects in the design phase. The first one pertains to the Girod Street Landscaping which includes the installation of landscaping and decorative streetlights on Girod Street from Montgomery Street to US 190. The second project pertains to the LA 22 & US 190 Intersection Improvements, which includes engineering services to design geometric roadway improvements to the roadway segments east and west of the interchange with North Causeway Boulevard.

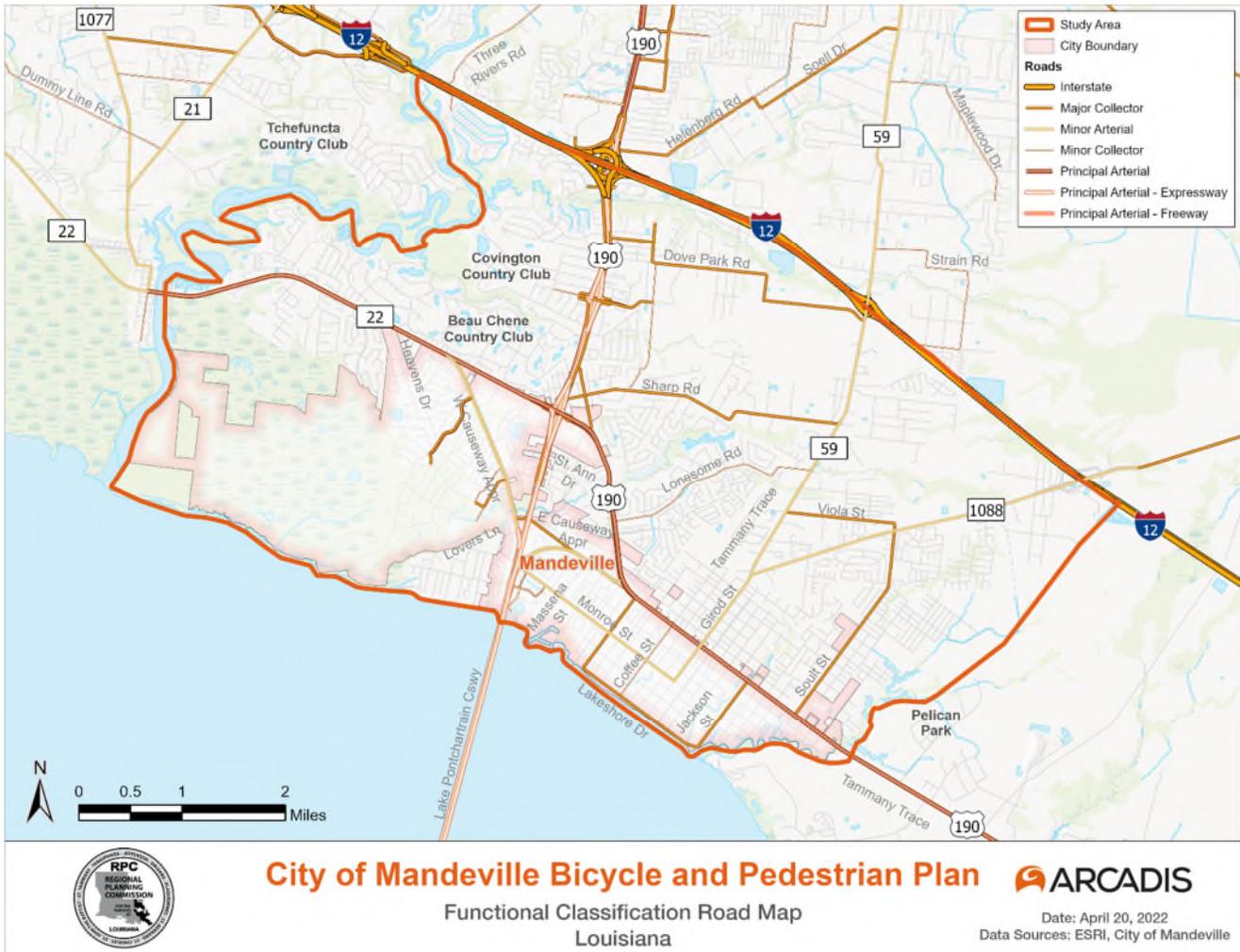


Figure 4-2: Functional Classification Road Map

4.3 Existing Land Use, Community Facilities, and Destinations

The Department of Planning/GIS for the City of Mandeville provided the land use and lot lines of property in the shapefile format. This dataset represents the officially recorded property boundaries in the City of Mandeville. The lot information is derived from subdivision plats, surveys, lot and block maps, orthoimage, and other official sources.

The existing land use surrounding the study area is primarily residential, commercial, and industrial. Residential land type is the most prevalent, followed by commercial and industrial land types adjacent to the principal arterials (LA 22 and US 190). Other land uses in the study area include open spaces located primarily near the shoreline

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adjacent to Lakeshore Drive, as well as mixed-use land located between Marigny Avenue and Carroll Street. This area is experiencing significant commercial growth with the establishment of restaurants and shops. Figure 4-3 shows the land uses in the city.

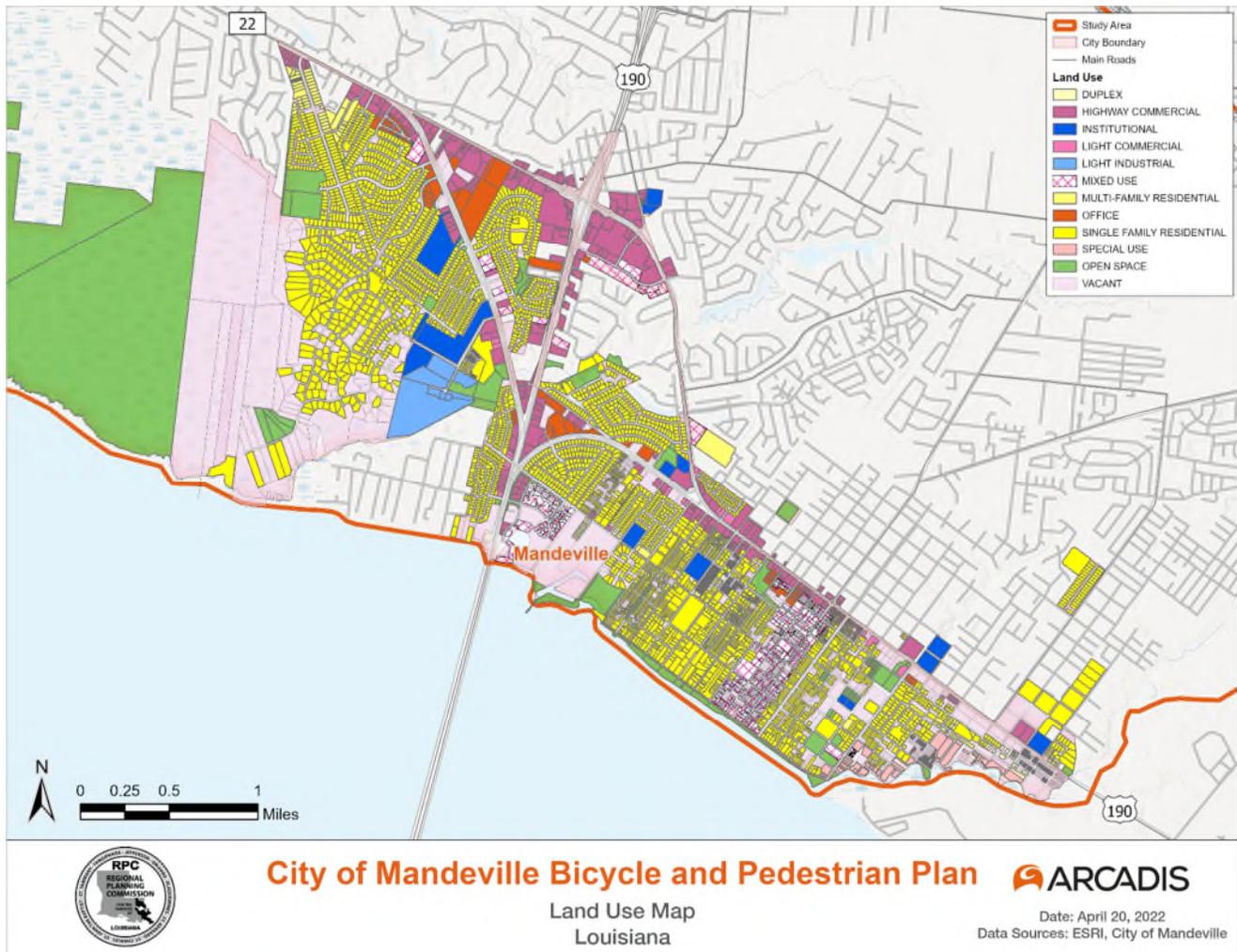


Figure 4-3: Land Use Map

The project team has identified the Lakeview Medical Center located on Judge Tanner Boulevard as the major medical facility within the study area. It has served the Northshore region (including the residents of St. Tammany Parish, Lacombe, Covington, Madisonville, Abita Springs, and Mandeville) since 1977.

Several schools were identified as significant bicycle and pedestrian generators within the study area, such as Mandeville High School, Tchefuncte Middle School, and Pontchartrain Elementary School. Major recreational areas in the City of Mandeville include: the Beau Chene Country Club, Mandeville Boat Launch, Pontchartrain Yacht Club, Mandeville Lakefront Splash Park, Fairview Riverside State Park, Fontainebleau State Park, Pelican Park, the Mandeville Trailhead and the Northern Trail along the Tammany Trace. Figure 4-4 shows the places of interest within the city.

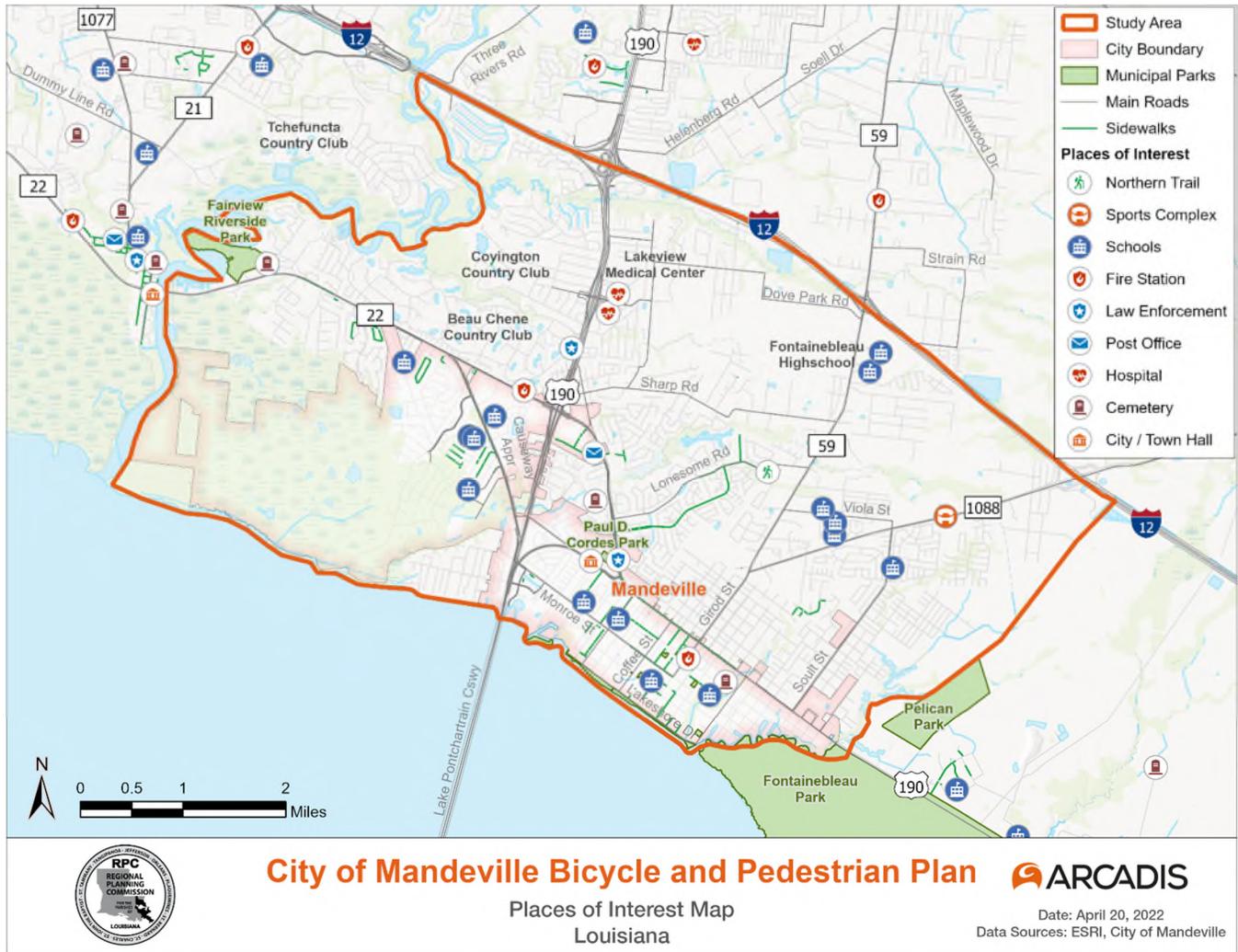


Figure 4-4: Places of Interest Map

4.4 Demographic Variables

After Hurricanes Katrina and Rita hit the Gulf Coast in August 2005, the City of Mandeville has experienced a large influx of new residents who were looking to move to the north shore coming primarily from the New Orleans Metro area and surrounding parishes. Although the City of Mandeville was not impacted as severely as other areas, it did suffer flooding and damage to houses and businesses in the areas closest to Lake Pontchartrain. There was substantial damage to many of the historic homes and buildings. Mandeville was one of the first cities to adopt a climate action-oriented plan for flood mitigation. By 2009, most buildings in the flood zone were reconstructed and elevated.

The city is frequently a popular retreat for visitors, and in the last several years it has experienced considerable growth in commercial and residential developments. This growth has also brought issues including traffic congestion, poor connectivity, and a lack of inclusive, user-friendly facilities, creating the need for improvements to the infrastructure of the city, such as the bicycle and pedestrian plan outlined herein.

Bicyclists have different use patterns than motorized road users. In cases where the infrastructure is lacking or hostile to bicyclists, mere counts may not reveal the actual demand for such travel needs. This study will evaluate

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the following demographics to identify the areas with the highest potential demand for bicycle and pedestrian trips:

- Population with poverty status
- Median household income
- Households with zero vehicles available
- Elderly population
- Population with disabilities

The American Community Survey (ACS) 2019 5-year estimates data set provided by the NORPC and extracted from the U.S Census Bureau was used. The smallest spatial unit for most variables available is the census block group, which is determined by the Census Bureau. Populations with disabilities are only provided at the census tract level.

The City of Mandeville has an estimated population of 12,199 residents, with a median household income of \$72,989. Of this population, 10.33% (1,260) of residents live below the poverty level, with 89.67% (10,939) of the population above the poverty level (Figure 4-5).

Percentage of Population Below and Above Poverty Level in the City of Mandeville

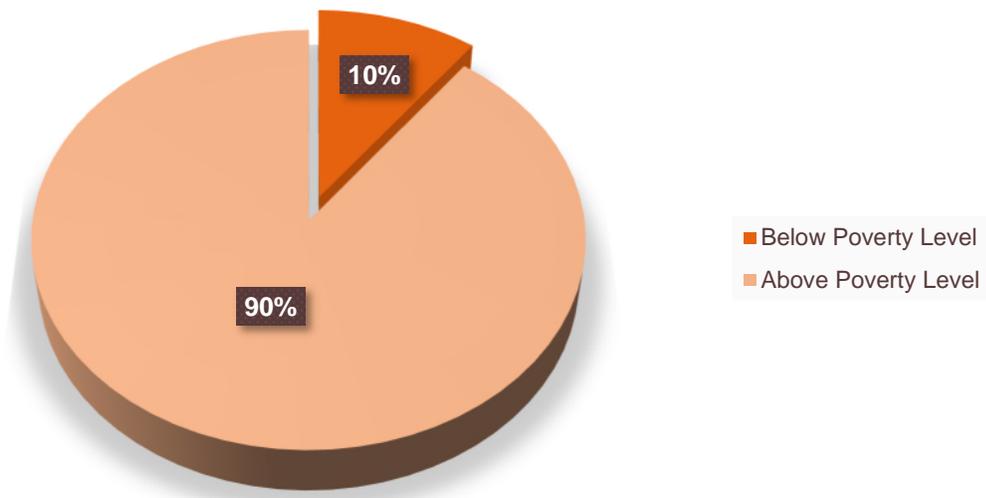


Figure 4-5: Percentage of Population Below and Above Poverty Level

There are an estimated total of 4,718 households in Mandeville. Overall, 5% (215) of households do not have access to a vehicle for their daily transportation needs. Approximately 34.23% (1,618) of households rely on only one vehicle to access jobs, food, education, healthcare, and other resources. These are households in need of, and that can greatly benefit from, a safe and connected alternative transportation network. The percentages of vehicle numbers per household in the City of Mandeville are shown in Figure 4-6.

Percentages of Vehicles per Households in the City of Mandeville

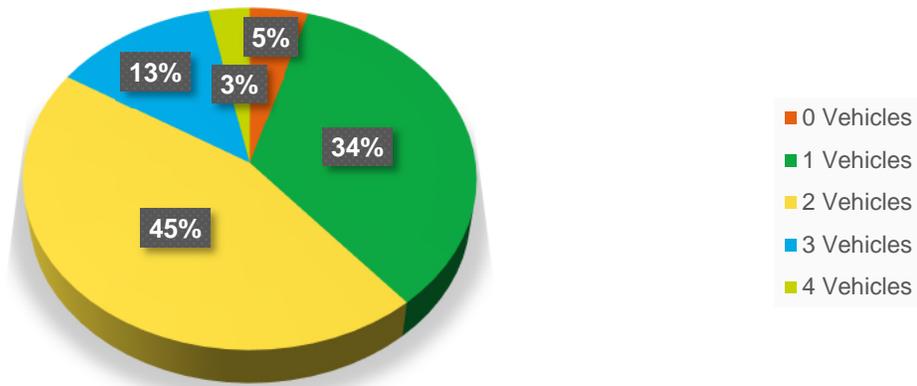


Figure 4-6: Percentages of Vehicles per Household

Approximately 18% (2,281) of the population of the City of Mandeville is over 65 years old. Similarly, approximately 19% of the population is between the ages of 5 and 17 years old. These age groups are the most vulnerable and would benefit the most from safe, accessible facilities. Table 4-1 shows the age groups and their percentage of the total population.

Table 4-1: Age Groups Percentages

Age Group	Percentage
Under 5 years	4.37%
5 to 9 years	5.28%
10 to 14 years	8.56%
15 to 17 years	4.82%
18 and 19 years	3.13%
20 years	1.37%
21 years	0.86%
22 to 24 years	2.48%
25 to 29 years	5.90%
30 to 34 years	3.59%
35 to 39 years	4.80%
40 to 44 years	6.29%
45 to 49 years	6.89%
50 to 54 years	8.04%
55 to 59 years	9.84%
60 and 61 years	2.89%
62 to 64 years	2.56%
65 and 66 years	2.02%
67 to 69 years	3.17%

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Age Group	Percentage
70 to 74 years	5.54%
75 to 79 years	2.90%
80 to 84 years	2.04%
85 years and over	2.65%

Title II of the Americans with Disabilities Act of 1990 prohibits States and other public entities from discriminating based on disability in the entities' services, programs, or activities, including access to the public right-of-way. Any project involving the construction or alteration of a facility that provides access to pedestrians must be made accessible to persons with disabilities. According to the ACS, 16.18% (1,974) of the total population in the City of Mandeville have a disability. Figure 4-7 summarizes the population with disabilities by age group.

Population with Disabilities by Age Group in the City of Mandeville

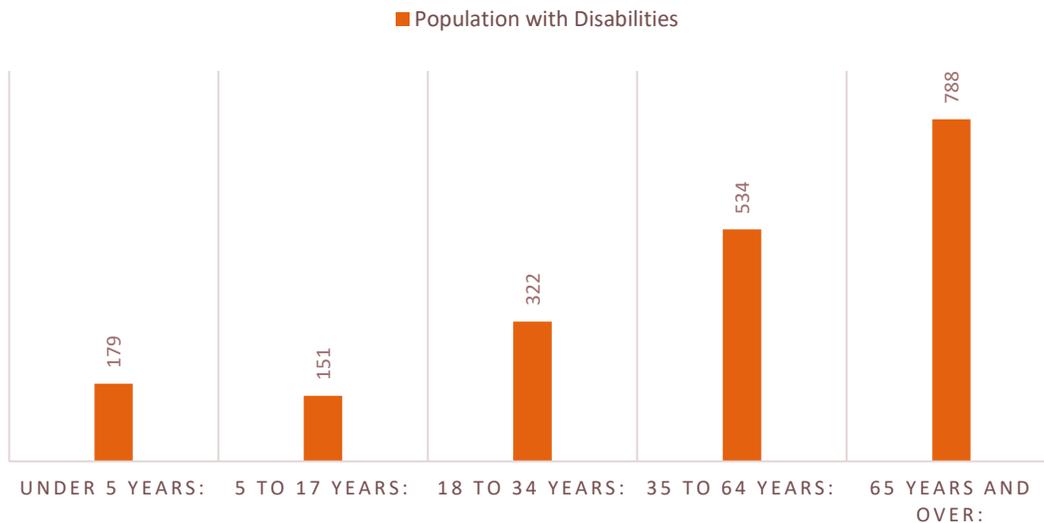


Figure 4-7: Population with Disabilities by Age Group

4.5 Crash Analysis

The crash history within the study area was reviewed with a special focus on pedestrian- and bicycle-related crashes which occurred during the five-year period of 2015 through 2019 (Figure 4-8). Using the crash data, interactive dynamic dashboards were developed which include the most relevant information to identify pedestrian, bicycle, and motorist behavior as shown in Figures 4-9 through 4-11.

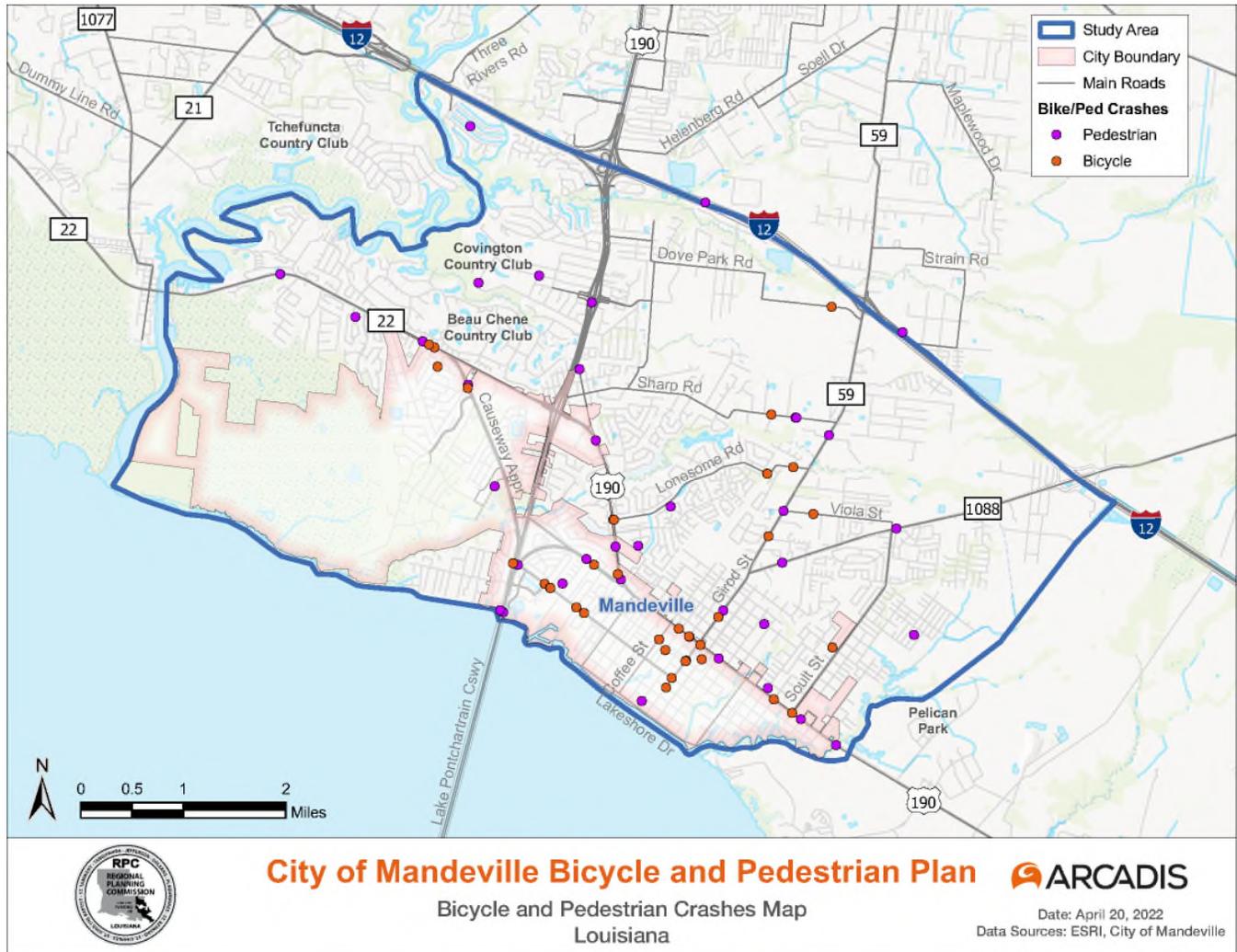


Figure 4-8: Pedestrian and Bicycle Crashes

4.6 Pedestrian and Bicycle Related Crashes

The biggest questions concerning pedestrian- and bicycle-related crashes are: who is involved, and why, as well as how, when, and where are they happening. Using the interactive dashboard, the team analyzed those questions. A total of 55 pedestrian- and bicycle-related crashes occurred within the study area over the five-year period. That is an average of 11 pedestrian- and bicycle-related crashes per year. While bicycle-related crashes are the largest portion (31 crashes) as compared to pedestrian-related crashes (24 crashes), more pedestrian-related crashes were fatal (3 crashes) as compared to bicycle-related crashes (1 accident).

Caucasians had the highest crash frequency among ethnicities for both pedestrians (75 percent) and bicyclists (74 percent). Males also had the highest crash frequency between genders (58 percent male pedestrians, and 68 percent male bicyclists). People ages 25 to 34 had the highest crash frequency (29 percent) among pedestrian age groups while people ages 45 to 54 (16 percent) as well as 55 to 64 (16 percent) had the highest crash frequency among bicyclists.

When evaluating the cause of crashes, distraction (or inattentiveness) was the most common condition among both pedestrians (46 percent) and bicyclists (48 percent). Most bicycle-related crashes involved a right-angle

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City of Mandeville Pedestrian and Bicycle Plan
 March 31, 2023

collision (74 percent) when the at-fault subject (either the vehicle or the bicyclist) failed to yield the right of way (35 percent) or disregarded the traffic control (10 percent). For 19 percent of the bicycle-related crashes, the action prior the crash of the at-fault subject was not reported. Most pedestrian-related crashes involved pedestrians crossing or entering the roadway either not at an intersection (25 percent) or at an intersection (15 percent). For 25 percent of the pedestrian-related crashes, the pedestrian action prior to the crash was not reported.

Most pedestrian- and bicycle-related crashes occurred from 7:00 a.m. to 7:00 p.m. While bicycle-related crashes were spread throughout the week, most pedestrian-related crashes occurred either on a Friday or a Saturday (63 percent). Also, more pedestrian-related crashes (37 percent) occurred under dark conditions as compared to bicycle-related crashes (16 percent).

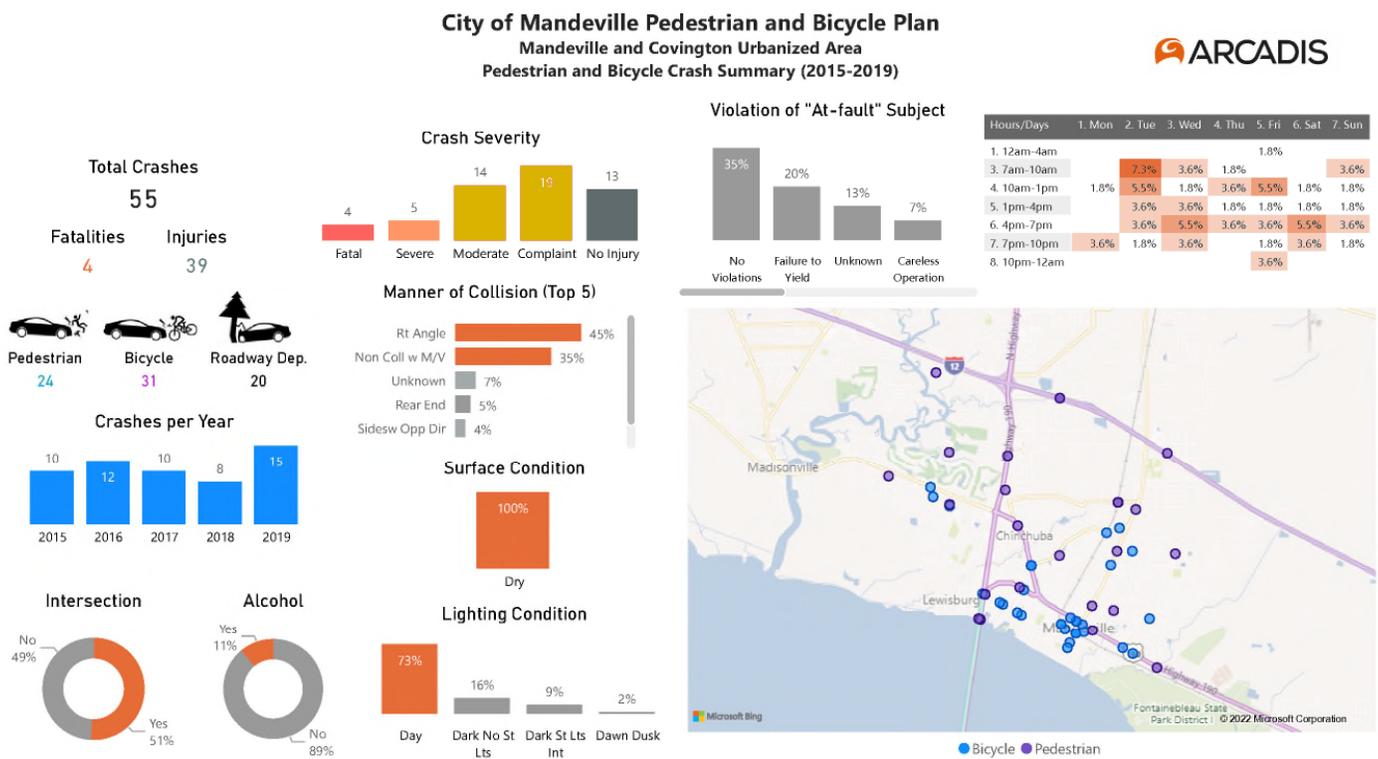


Figure 4-9: Pedestrian and Bicycle Crash Summary

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City of Mandeville Pedestrian and Bicycle Plan
 Mandeville and Covington Urbanized Area
 Pedestrian Crash Summary (2015-2019)

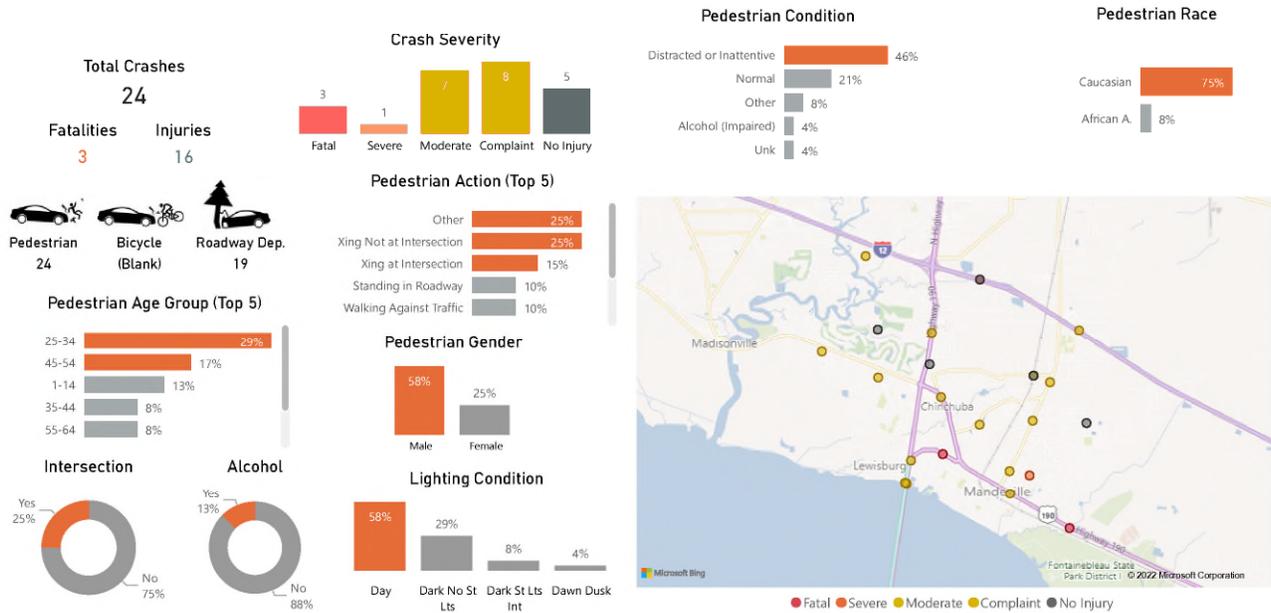


Figure 4-10: Pedestrian Crash Summary

City of Mandeville Pedestrian and Bicycle Plan
 Mandeville and Covington Urbanized Area
 Bicycle Crash Summary (2015-2019)

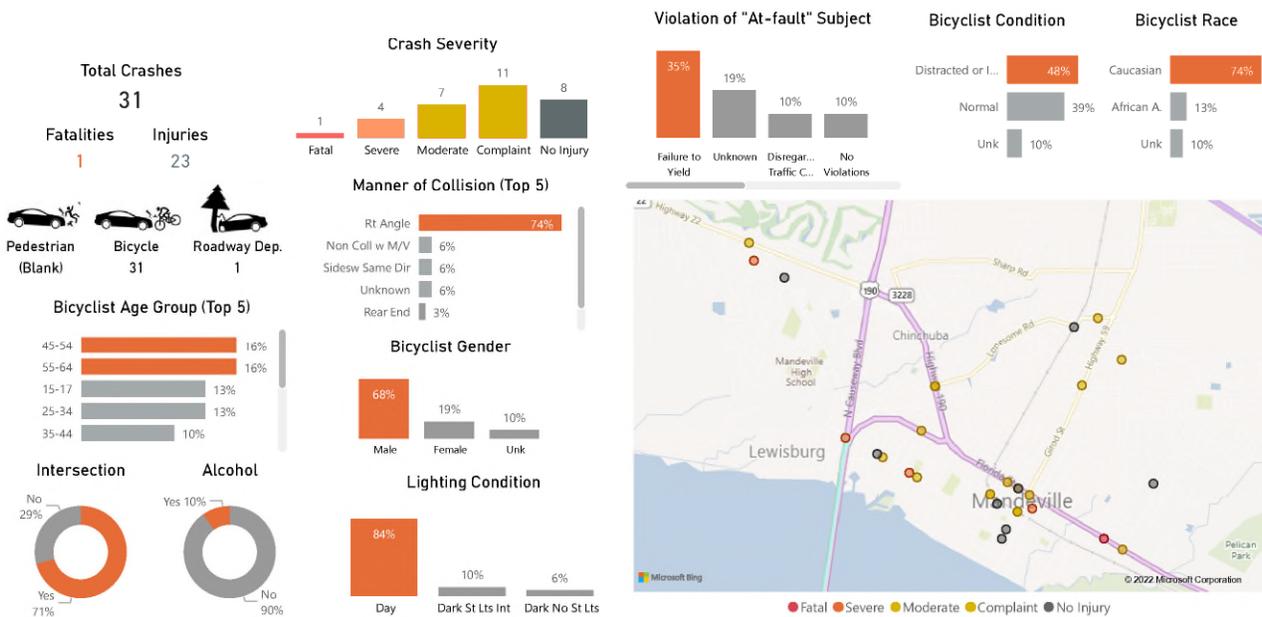


Figure 4-11: Bicycle Crash Summary

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4.7 Existing Field Inventory

As part of the existing conditions and data collection, Arcadis performed a field inventory of the conditions of the existing pedestrian and bicycle facilities within the study area. The inventory does not account for all facilities in the study limits but focused primarily on main routes.

The inventory included noting the conditions of the existing facilities. The conditions were reported on a color scale of green, yellow, and red. Green notes good conditions, which means that no reportable issues were observed during the inventory. While these facilities may have minor slab cracking or other very minor issues, they do not affect the operation of the facility. Yellow notes moderate conditions observed during the field inventory. These are usually minor lips in sidewalk panels, pavement marking issues, minor handicap ramp issues or other minor maintenance issues that need to be addressed. Red notes major issues with significant deficiencies in the facility that make the facility difficult to traverse and may create a safety hazard. These include lack of connectivity at critical locations, obstruction of the facility, and a badly damaged facility. Table 4-2 shows examples of green, yellow, or red conditions. The field inventory took place on several routes throughout the study area and an overall map with the conditions of the roadways that were inventoried are shown in Figure 4-12.

Table 4-2: Existing Facility Rating Designation Description

Color Designation	Description	Examples
	<ul style="list-style-type: none"> Pavement or facility in good condition, no notable issues found May have minor cracks in surface but no significant differential in elevation Handicap ramps in good working condition, appear to meet ADA 	
	<ul style="list-style-type: none"> Pavement or facility has minor issues that do not prevent users from using the facility but maintenance is needed. Elevation differences in concrete slabs causing lip 	

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Color Designation	Description	Examples
Yellow	<ul style="list-style-type: none"> Pavement markings at crossings needed or need restriping Handicap ramps needed or need upgrade to meet ADA 	
Red	<ul style="list-style-type: none"> Pavement or facility is in very poor condition rendering the facility difficult or not useable by users at a location or provides a potential safety issue Pavement of facility is broken and sufficiently not repaired or replaced Pavement or facility is blocked or inaccessible Critical safety issues causing harm or injury possible. An unsafe roadway section with no buffer for users 	 

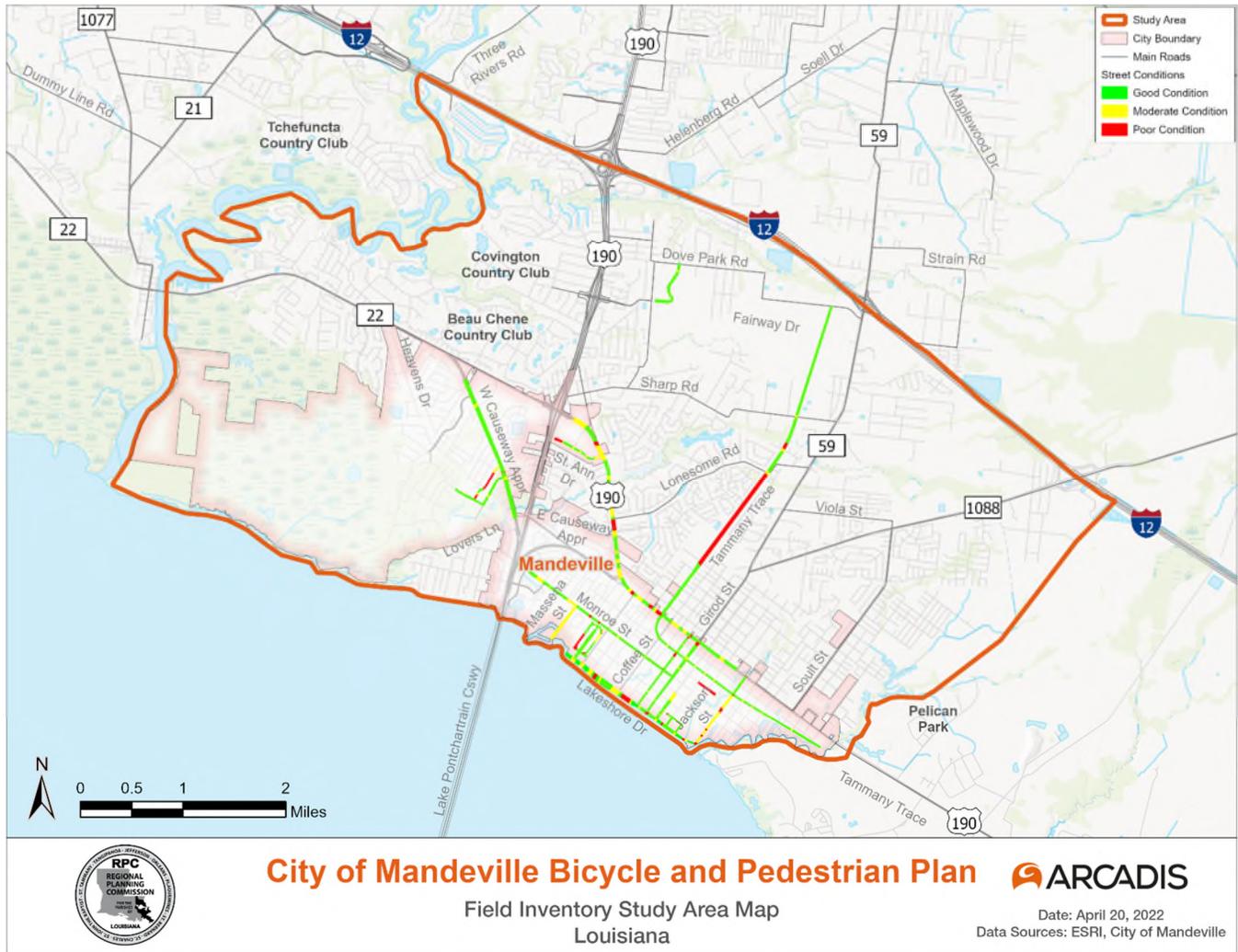


Figure 4-12: Field Inventory Study Area Map

Photos of each issue or deficiency for each roadway is shown in Appendix C. The following sections will provide a brief description of some of the main routes and some of the important findings along those routes. Information on all the routes from the field inventory is available in Appendix C.

4.7.1 Lakeshore Drive

Lakeshore Drive runs along Lake Pontchartrain on the southern limits of Old Mandeville, east of the Causeway Bridge. The roadway is a two-lane facility with a travel lane in each direction with on-street parking in portions. On the northern side of the roadway is a sidewalk, on the southside is the Mandeville Lakefront which has a multi-use path. This Lakeshore area has extensive pedestrian and bicycle activity. Figure 4-13 shows the conditions of Lakeshore Drive from the field review.

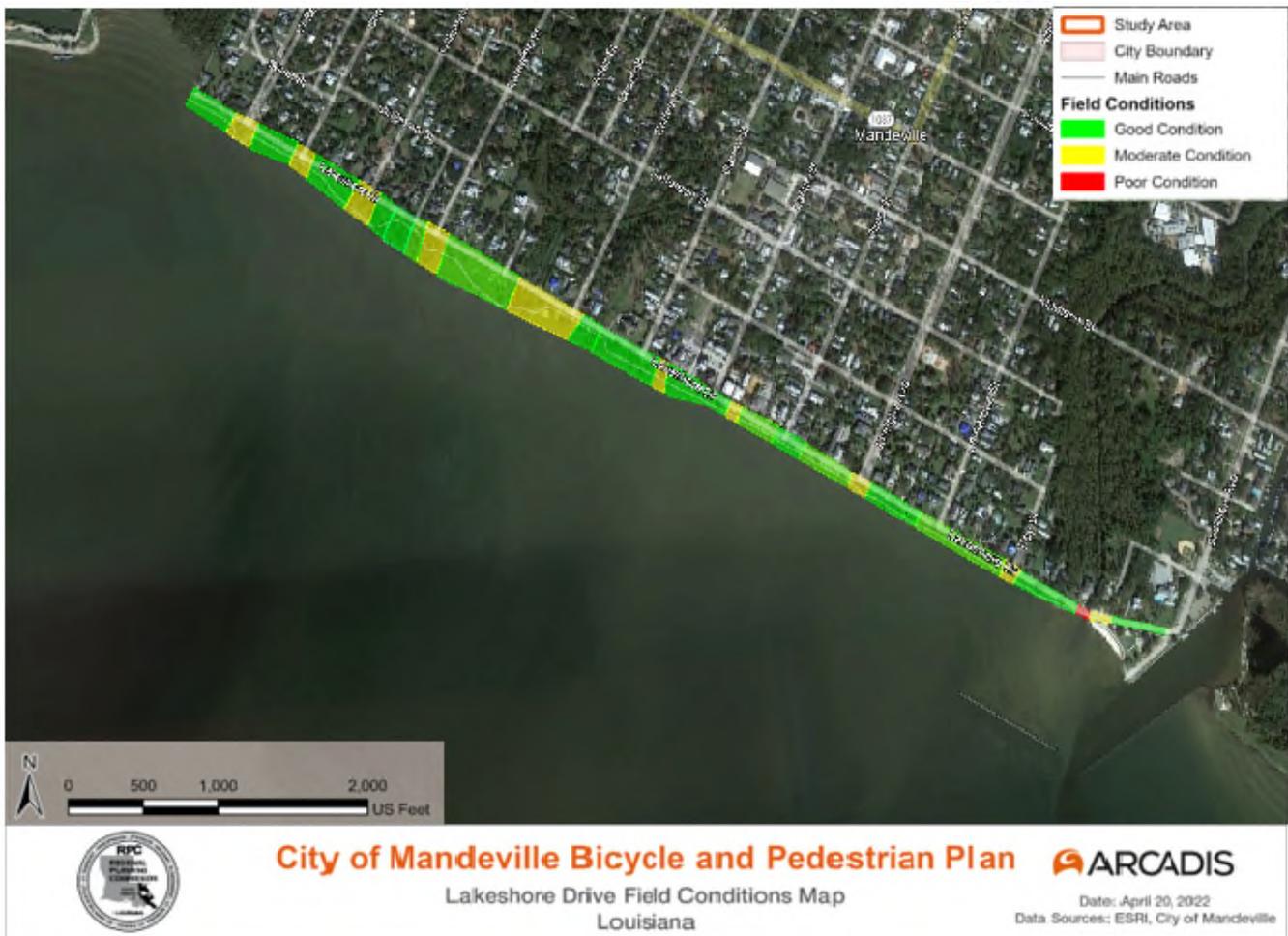


Figure 4-13: Lakeshore Drive Field Conditions

There are several noteworthy issues along Lakeshore Drive. Along the northside of the roadway, the handicap ramps at most of the cross streets are not ADA compliant as there are no truncated domes. Along the northside near Girod Street, there are several establishments that have parked cars or parking curbs that obstruct the sidewalk. On the Mandeville Lakefront side, there are locations along the multi-use path that need attention due to heavy amounts of sand across the path or damage to the path. The multi-use path is also too narrow to accommodate both bike and pedestrian travel. Figure 4-14 shows a typical location where the handicap ramps with cross streets on the northside do not meet ADA compliance. For more field photos and issue locations along Lakeshore Drive see Appendix C.



Figure 4-14: Lakeshore Drive Handicap Ramps

4.7.2 Tammany Trace

The Tammany Trace (the Trace) is a multi-use path that goes throughout St. Tammany Parish and it is a main connector to the Old Mandeville Area that attracts pedestrian and bicyclists to a variety of shops and restaurants as well as the Mandeville Trailhead and the Mandeville Lakefront. The Trace runs from I-12 south to Old Mandeville and runs east through the City to Pelican Park within this study's limits. Figure 4-15 shows the conditions of the Tammany Trace from the field review.

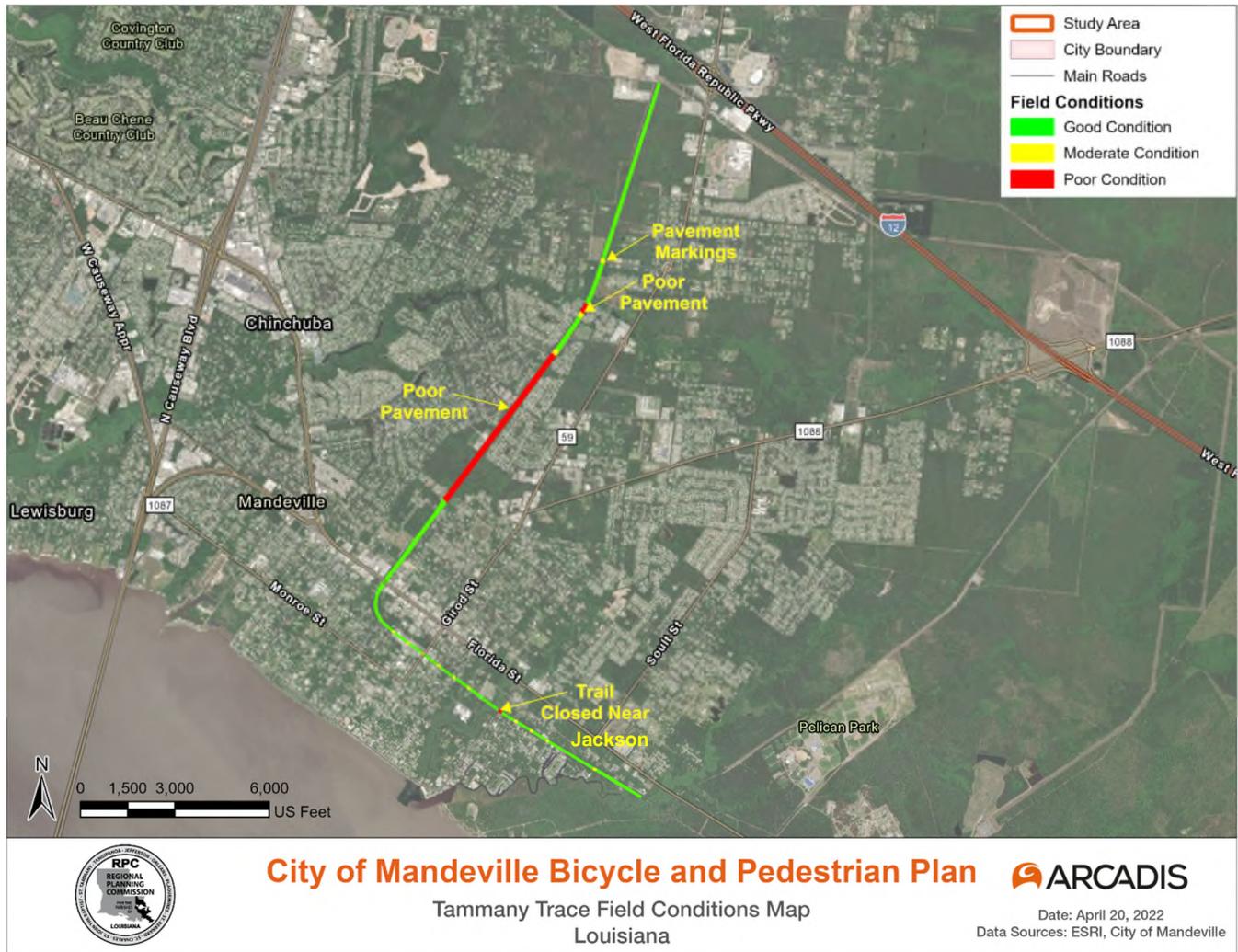


Figure 4-15: Tammany Trace Field Conditions

The Tammany Trace is in good condition as viewed in the field review for most of the Trace within the study limits. One minor condition that was noted consistently at nearly every cross street was that the pavement markings both on the Trace and the cross street were typically in poor condition and need to be restriped. The area of greater concern is the trail’s condition in two locations. The first is a stretch on the northern leg between Destin Street and Lonesome Road. There are cracks with differential settlement, potholes, and marred pavement throughout this stretch in many locations. The second location is near the intersection with Jackson Avenue on the Eastern limits of Old Mandeville. The Trace has been completely dug up and closed in this section due to construction. Figure 4-16 shows the typical pavement marking conditions at a cross street along the Trace. Figure 4-17 shows the pavement conditions of the Trace between Destin Street and Lonesome Road.



Figure 4-16: Tammany Trace Pavement Markings



Figure 4-17: Tammany Trace Pavement Conditions (Destin to Lonesome)

4.7.3 Monroe Street

Monroe Street is a two-lane roadway that runs east-west from the Causeway Bridge Approach into Old Mandeville to Girod Street. The roadway has a sidewalk throughout this stretch, however, it usually alternates between the southside and northside of the roadway for different stretches. Monroe Street provides a route for pedestrians and bicyclists into the Old Mandeville area from some of the western areas of the study area; however, connectivity to W Causeway Approach is lacking. Figure 4-18 shows the conditions of Monroe Street from the field review.

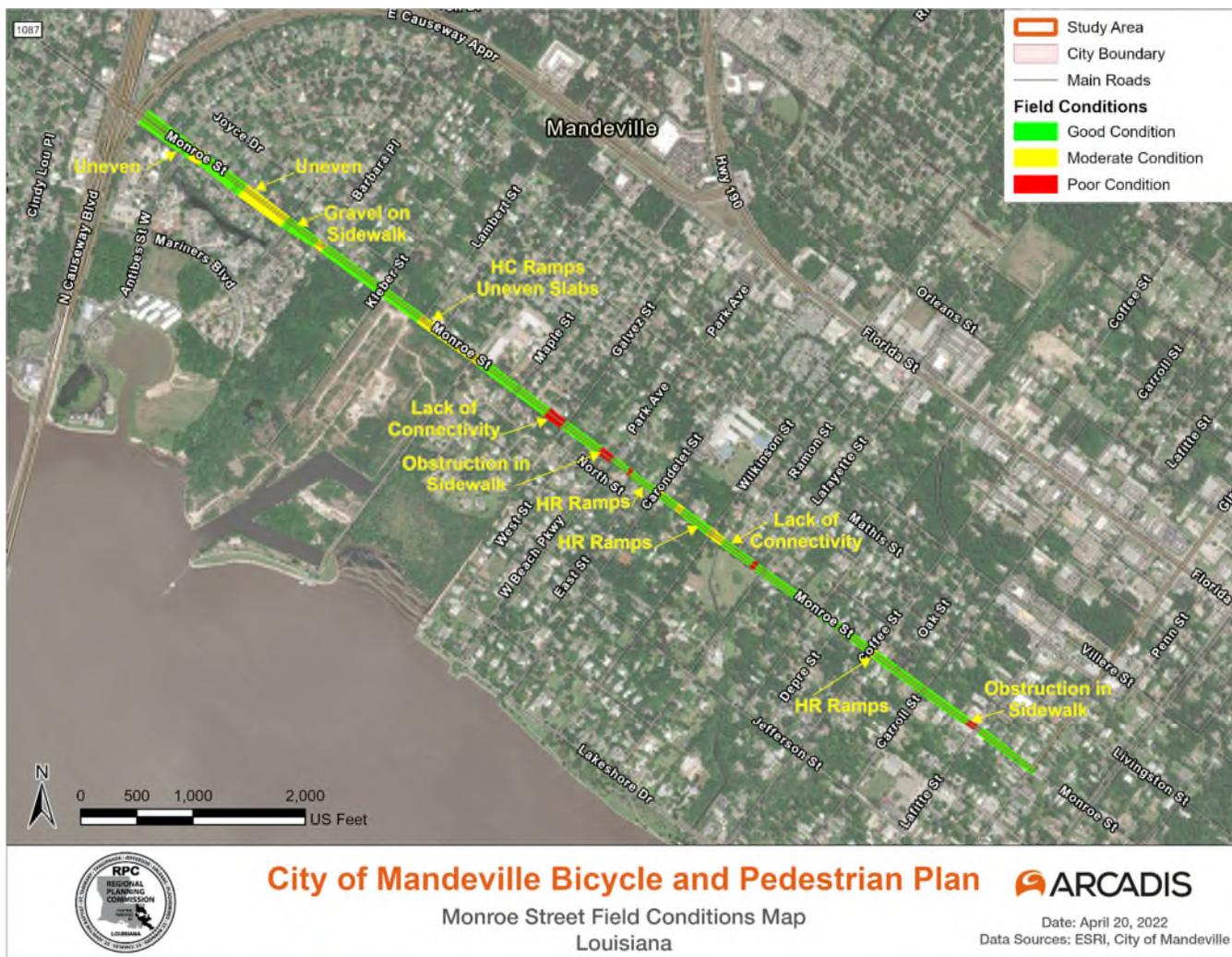


Figure 4-18: Monroe Street Field Conditions

Monroe Street has a few points that require minor maintenance as there are several locations where concrete slabs are uneven and create a lip for users. Handicap ramps are not present or do not meet ADA requirements at some locations. Areas of concern are the lack of connectivity near Galvez Street and the obstructions in the sidewalk including an open grate catch basin, power pole near the intersection with W Beach Parkway, and barricades near Lafitte Street. Figure 4-19 shows the typical uneven slabs along Monroe Street and Figure 4-20 shows the catch basin in the sidewalk near W Beach Parkway.

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Figure 4-19: Concrete Sidewalk Slab Elevation Differential (Monroe Street)



Figure 4-20: Open Grate Catch Basin in Sidewalk (Monroe Street)

4.7.4 Lafitte Street

Lafitte Street is a two-lane roadway that runs north-south in Old Mandeville. There is sidewalk present for most of Lafitte Street between US 190 and Lakeshore Drive. The sidewalk does alternate from east to west randomly and there are locations where sidewalk is on both sides of the roadway. The characteristics of the roadway are mostly local residential but have several significant land-use/attractions that lead to pedestrian and bicycle activity. Some of the attractions along Lafitte Street are the Our Lady of the Lake Roman Catholic Church and School, Treen Technology Center, Mandeville Trailhead, and several restaurants. Figure 4-21 shows the conditions of Lafitte Street from the field review.

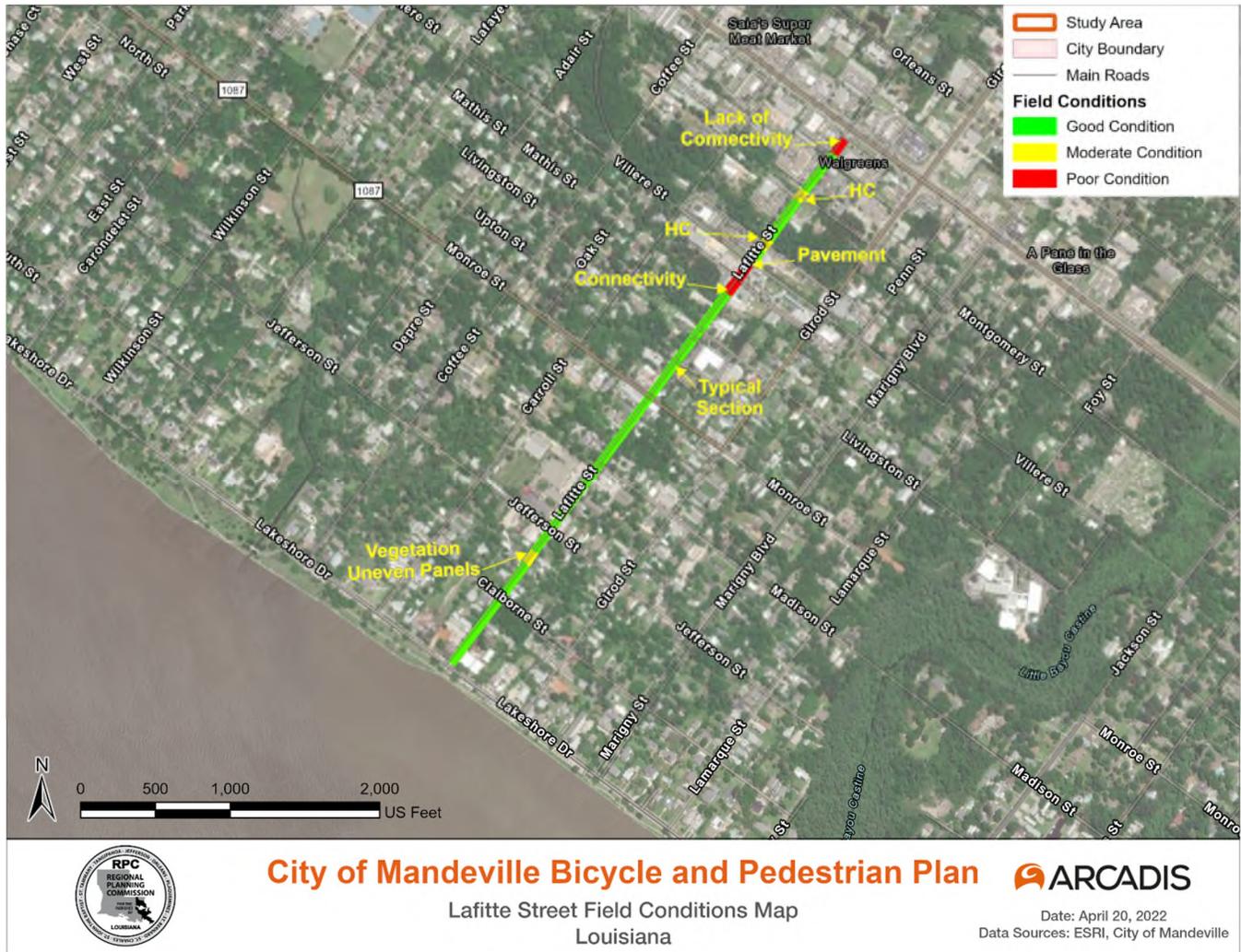


Figure 4-21: Lafitte Street Field Conditions

Lafitte Street conditions are favorable, but there are a few areas of concern as it serves as a north-south connector between US 190 and Lakeshore Drive with attractive land use. Lack of connectivity in spots is the main concern. Near the Mandeville Trailhead, there is poor connectivity around Woodrow Street, as sidewalks switch back and forth to either side of Lafitte Street. Additionally, the handicap ramps in this section do not guide the users well. Near US 190, Lafitte Street does not have access to US 190 via sidewalk. Users could continue through the Walgreens parking lot on the southeast corner of the intersection with US 190 to gain access to the sidewalk along US 190. The stretch of sidewalk across from Lakeway Collision Center is also of concern as the

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typical section is not acceptable since no buffer exists between sidewalk and roadway. There are other minor issues along Lafitte including non-compliant ADA ramps in the northern portion and some vegetation concerns near Lakeshore Drive. Figure 4-22 shows the connectivity issues in the Woodrow Street and Mandeville Trailhead area. Figure 4-23 shows the typical section concerns along Lafitte Street.



Figure 4-22: Poor Connectivity Near Woodrow Street/Trailhead (Lafitte Street)



Figure 4-23: Typical Section Issues (Lafitte Street)

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4.7.5 US 190

US 190 is the major east-west corridor in the study area with mostly commercial land use throughout the length that was included in the field inventory. The roadway for most of this stretch is a 5-lane section with sidewalks on both the north and south side of the highway. Figure 4-24 shows the conditions of US 190 from the field review.

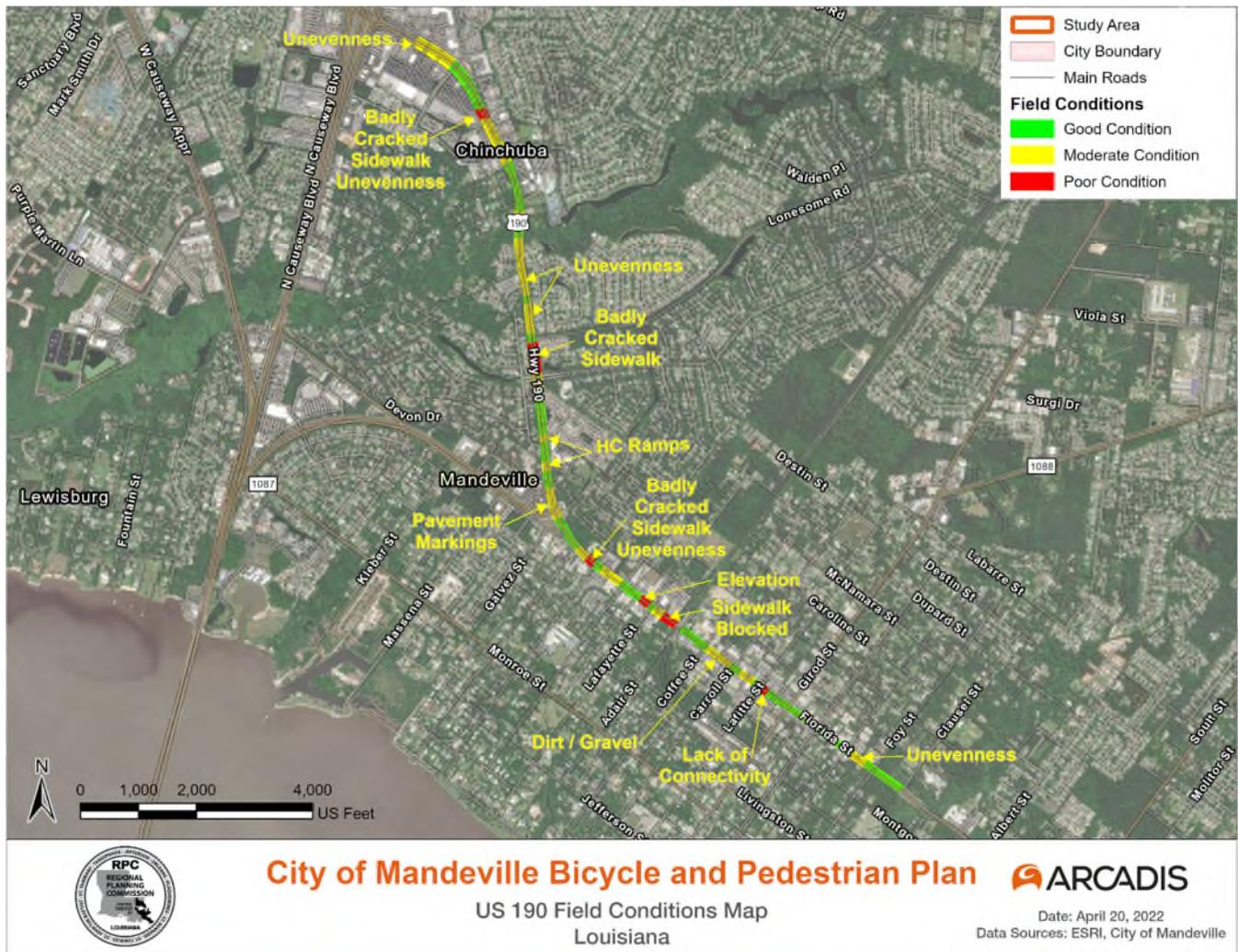


Figure 4-24: US 190 Field Conditions

US 190 has sidewalk on both sides for quite a distance but there are several minor to moderate issues that need maintenance. These include deficiencies such as uneven panels, dirt on handicap ramps and walkways, and updated pavement markings. The following discussion will focus on the major issues of concern. US 190 has a few locations where the sidewalk is completely blocked, or several concrete sidewalk panels are missing. There are also a few locations where the sidewalk is severely cracked and uneven, far exceeding a normal differential settlement between two slabs. Also, near Liz’s Where Y’at Diner along the southside of US 190, there are significant side slope issues causing a safety concern.. Figure 4-25 shows debris blocking the sidewalk along the southside of the roadway near Tender Years Day Care Center. Figure 4-26 shows the missing sidewalk near the Walgreens on the southside of US 190. Figure 4-27 shows a picture of badly cracked sidewalk along US 190 and Figure 4-28 shows the side slope concerns in front of Liz’s Where Y’at Diner.

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Figure 4-25: Debris Blocking Sidewalk (US 190)



Figure 4-26: Sidewalk Connectivity (US 190)



Figure 4-27: Badly Cracked Sidewalk and Elevation Differential (US 190)



Figure 4-28: Side-slope Concerns (US 190)

4.7.6 Jackson Avenue

Jackson Avenue is another north-south connector on the eastern limits of the city and study area. Jackson Avenue has a multi-use path on the west side of the street and is a two-lane roadway with one lane in each direction. Jackson Avenue has destinations near the Lake that include a Splash Park, Pontchartrain Yacht Club, Harbor Pavilion, Harbor Field baseball field, and Mandeville Boat Launch. Figure 4-29 shows the conditions of Jackson Avenue from the field review.

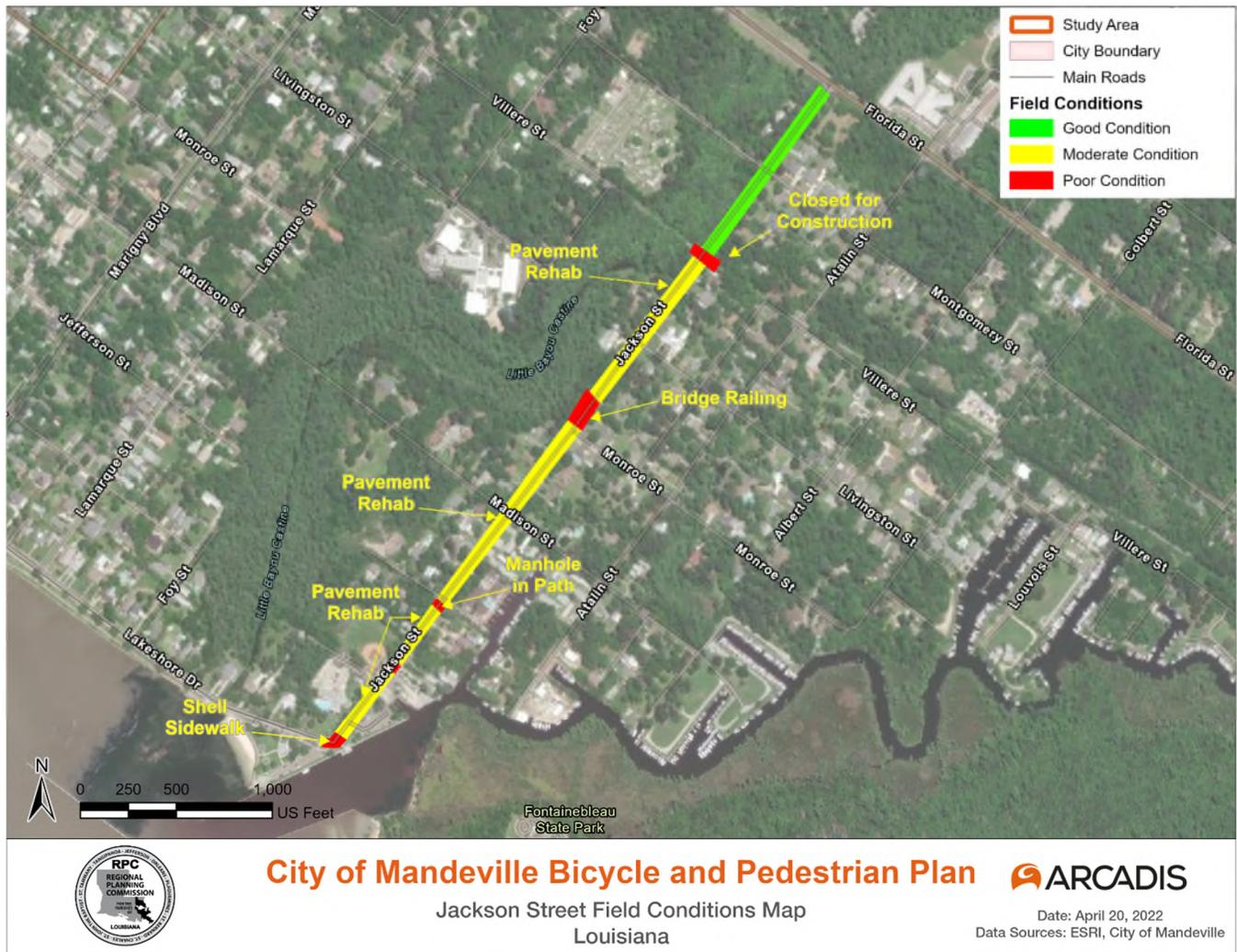


Figure 4-29: Jackson Avenue Field Conditions

The field review of Jackson Avenue found that between the Tammany Trace and Lakeshore Drive, the overall condition of the asphalt for the multi-use path is deteriorated. While some patches need attention sooner than others, the entire section needs to be repaved and restriped. A few locations of greater concern include the construction along the path at the Tammany Trace (as it is currently dug up and inaccessible), the poor railing condition on the bridge near Monroe, and locations at the southern limits that include shell being used for sidewalk connectivity to Lakeshore Drive. Figure 4-30 shows the typical condition of the asphalt pavement for the multi-use path along Jackson Avenue. Figure 4-31 shows the bridge railings at the path bridge along Jackson Avenue.

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Figure 4-30: Jackson Avenue Typical Path Condition



Figure 4-31: Bridge Railing (Jackson Avenue)

4.7.7 Mandeville High School Area

Near Mandeville High School, there are a series of streets that create a loop around the area with sidewalk and provide access to the W Causeway Approach as well. The streets include Purple Martin Lane, Skipper Drive, and Mandeville High School Boulevard. Figure 4-32 shows the conditions of the area near Mandeville High School from the field review.

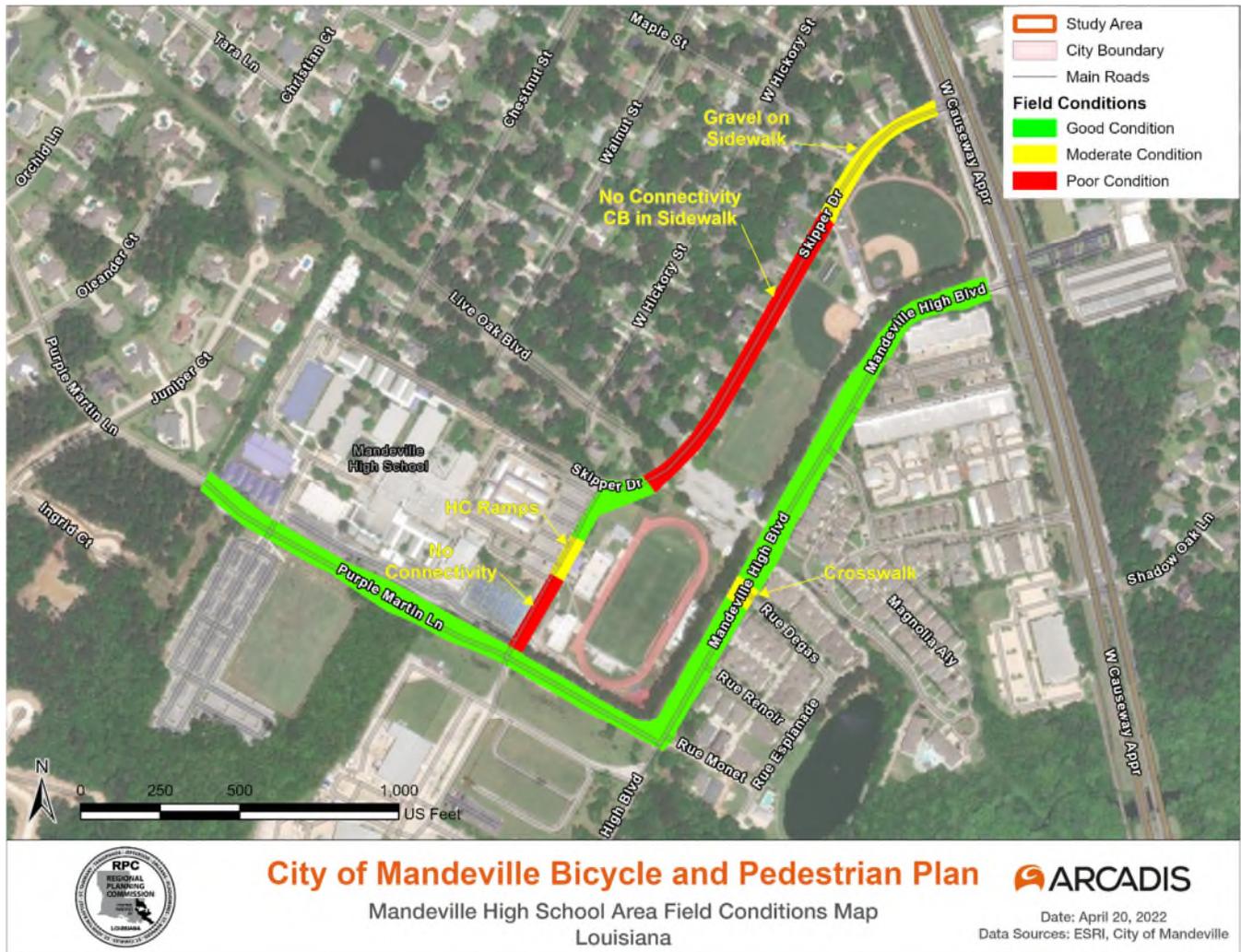


Figure 4-32: Mandeville High School Area Field Conditions

The overall condition of the sidewalks along the streets in this area are good. However, the main concern is a lack of connectivity along Skipper Drive. There is no connectivity between the football and baseball fields along Skipper Drive and no connectivity between Purple Martin Lane and Skipper Drive. This area is likely to have several pedestrians during events and the current facilities may require them to walk in the roadway because of the lack of connectivity. Figure 4-33 shows the lack of connectivity between the football and baseball fields.



Figure 4-33: Lack of Connectivity (Mandeville High School Area)

4.7.8 West Causeway Approach

The West Causeway Approach provides access from LA 22 to the Causeway Bridge for the western parts of Mandeville. The roadway has a path on the south side of the road. The typical section of the roadway is a divided four-lane roadway with two lanes in each direction with shoulders. West Causeway Approach provides main entrance access to Mandeville High School, Tchefuncte Middle School, Pontchartrain Elementary School, and the City of Mandeville Public Works Department. There is also quite a bit of commercial retail along the corridor. Figure 4-34 shows the conditions along West Causeway Approach from the field review.

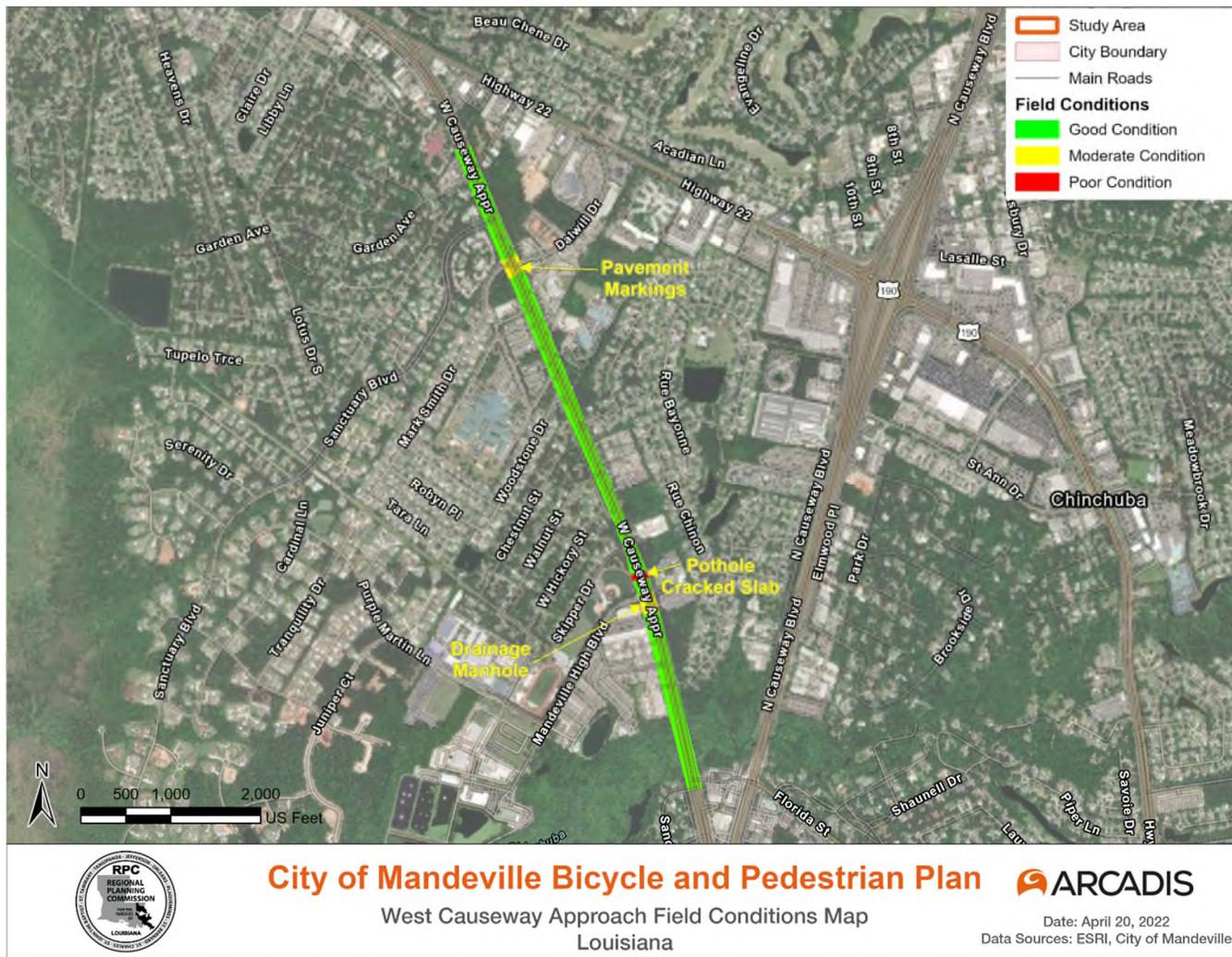


Figure 4-34: West Causeway Approach Field Conditions

The West Causeway Approach is in overall good condition. Some minor maintenance is needed concerning the refreshing of pavement markings near cross streets and driveways. There is one location with some more severe concrete panel cracking near the Mandeville High School Baseball Field. A drainage manhole is in the path near La Carreta restaurant. The path along West Causeway Approach ends near Lovers Lane and a frontage road continues to Causeway Boulevard. The frontage road provides narrow pavement markings for bicyclists, but there are no accommodations for pedestrians.

4.7.9 Girod Street

Girod Street acts as the gateway to the Old Mandeville Area of the City as LA 59 intersects with US 190. Girod Street in this section is a two-lane roadway with one lane in each direction and sidewalk on both sides of the street. Girod Street runs north-south and provides access to the Lakefront like many roadways in the area. It has more pedestrian activity than the other routes as the Mandeville Trailhead Entrance is on Girod Street, along with many restaurants and retail along the street. Figure 4-35 shows the conditions along Girod Street from the field review.

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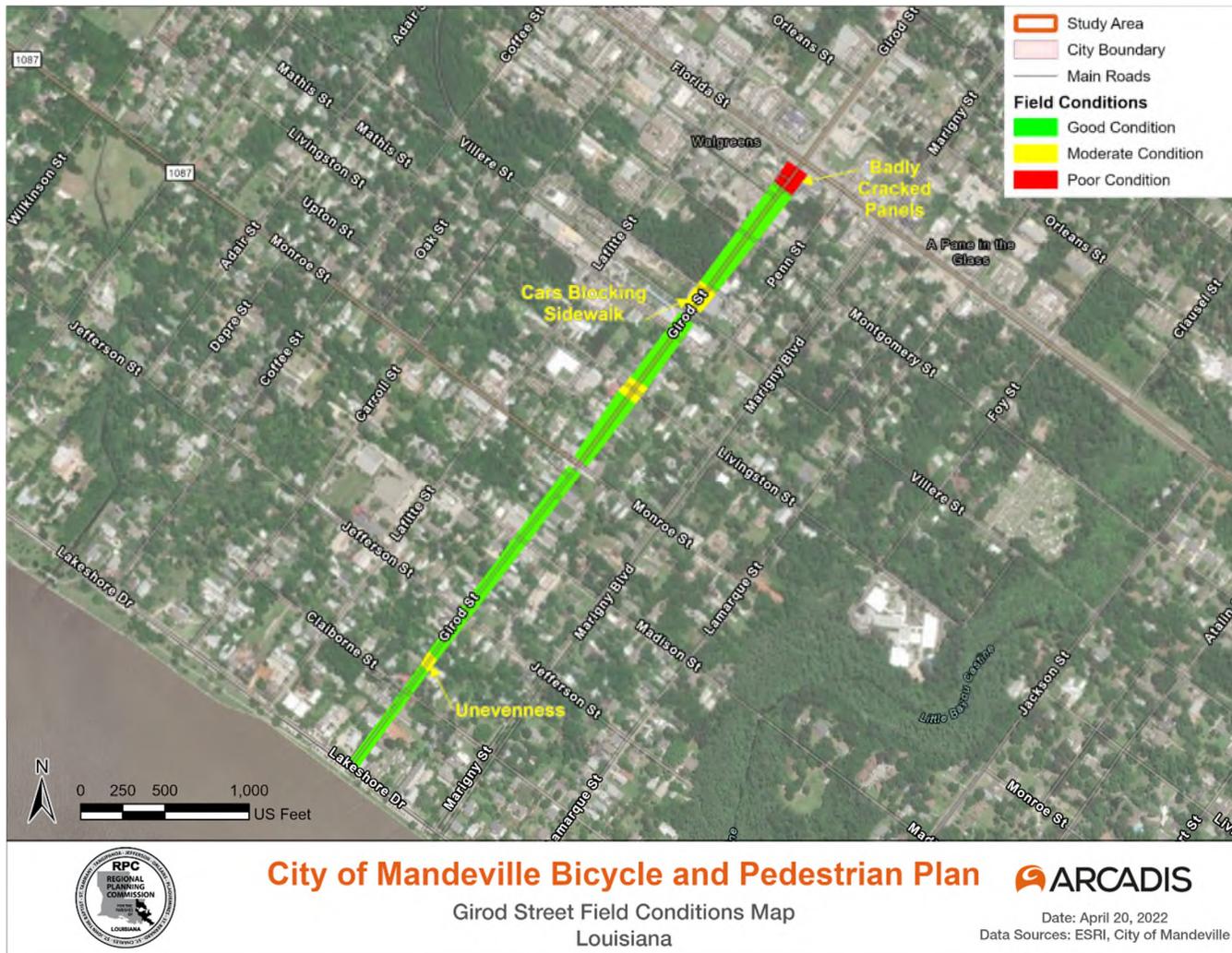


Figure 4-35: Girod Street Field Conditions

The sidewalks along Girod Street are in overall good condition and provide ADA compliant handicap ramps at crossings and intersections as needed. However, two locations were noted as areas of concern. The first was at the intersection of Girod Street with US 190. There are several severely cracked concrete sidewalk panels that cause an elevation differential. The second is near the Tammany Trace where some business parking blocks the sidewalk. There are other locations along Girod with some minor concrete sidewalk panel displacement. Figure 4-36 displays the severely cracked panels near US 190.



Figure 4-36: Giron Street Cracked Sidewalk Panels

4.8 Volume Count Data Collection

4.8.1 Count Location Analysis and Verification

For this study, volume counts took place at a total of 11 locations: 8 locations with 7-day, 24-hour counts in which all modes of transportation were recorded, including motorized vehicles, bikes, and pedestrians and 3 other locations with 7-day, 24-hour counts in which only pedestrians and bikes were counted.

Table 4-3 describes the location as well as the type of count. Figure 4-37 displays the locations of the counts with blue stars.

Table 4-3: Count Locations

Count Location ID	Description	Type of Count	
		Full	Ped-Bike Only
1	LA 22 between Beau Chene Blvd. and Heavens Dr. (Beau Chene CC)	x	
2	Judge Tanner Blvd. btwn. Lakeview Dr. and Lakeview Cir. (Lakeview Medical Center)	x	
3	W Causeway Approach between Chestnut St. and Walnut St. (Mandeville HS, Tchefuncte MS, Pontchartrain Elem.)	x	
4	Monroe St. between Marilyn Dr. and Antibes St.	x	
5	LA 59 between Hurricane Alley and Bulldog Dr. (Fontainebleau HS)	x	
6	Northern Trail on Tammany Trace near Lonesome Rd.		x
7	US 190 between Carroll St. and Lafitte St.	x	
8	Giron St between Gen Pershing St. and Woodrow St.		x

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City of Mandeville Pedestrian and Bicycle Plan
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Count Location ID	Description	Type of Count	
		Full	Ped-Bike Only
9	Girod St. between Claiborne St. and Lakeshore Dr.	x	
10	Jackson Ave. between Lakeshore Dr. and Claiborne St.	x	
11	Tammany Trace near Rapatel St. (Fontainebleau SP and Pelican Park)		x

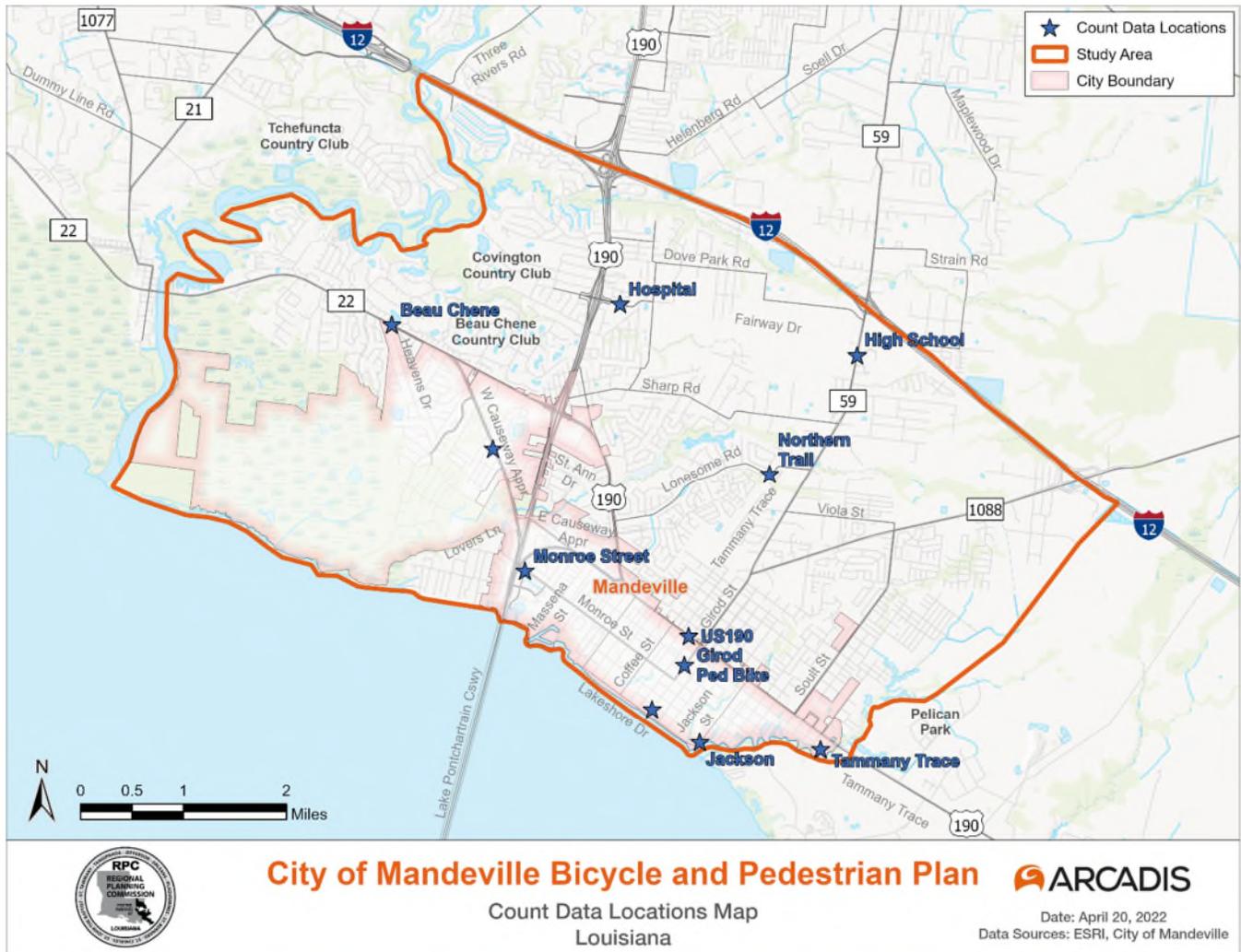


Figure 4-37: Map of Count Data Locations

Data was collected between April 29 and May 6, 2022 by automated video camera. The data collected was verified by comparing to previously collected data in the area at similar locations to those shown in Figure 4-37. The previous data used for comparison was provided by the City Engineer from counts taken in 2021, as well as the Louisiana Department of Transportation and Development (LADOTD) historical count data website. Table 4-4 shows a comparison of the ADTs from the newly collected data and the historical data, as well as other relevant information including the peak hour and heavy vehicle percentage.

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Table 4-4: Count Location Results and Validation (Vehicles)

SI.No	Location	2022 ADT	Historical ADT	% difference w.r.t ADT	Peak Hour		HV%		Remarks
					AM Peak	PM Peak	AM Peak	PM Peak	
1	LA-22 Bet. Beau Chene Blvd & Heavens Dr (Beau Chene CC)	25682	26033 (2021)	-1.4%	10:00 AM - 11:00 AM	2:45 PM – 3:45 PM	2.0%	2.6%	Site validated with only -1.4% ADT Difference.
2	Judge Tanner Blvd Bet. Lakeview Ln & Lakeview Ct	5834	N/A		7:45 AM - 8:45 AM	4:15 PM – 5:15 PM	1.6%	1.5%	Closest available data at US 190 Off Ramp. No comparable data available.
3	W Causeway Approach Bet. Rue Chantilly & Walnut St	15019	13635 (2005)	9%	6:45 AM - 7:45 AM	2:30 PM – 3:30 PM	3.2%	3.3%	Only 2005 Historical AADT is available. Historical location near LA 22, growth rate of 5%. Current value within 10%.
4	Monroe St Bet. E Causeway Approach & Antibes St W	7545	N/A	-	7:00 AM - 8:00 AM	4:30 PM – 5:30 PM	2.9%	0.8%	The historic ADT data point is on west side of intersection with Causeway, does not paint accurate picture. That count location little far from count has ADT value of 705 (2022) and AADT value of 1311 (2005)
5	LA-59 Bet. Bulldog Dr & Hurricane Alley	18249	17781 (2005)	3%	7:45 AM - 8:45 AM	4:30 PM – 5:30 PM	5.4%	2.1%	No historic ADT data point on LA 59. Closest historical count station is near Fountains Park Blvd which is AADT from 2005, growth rate at 7%. Current value within 10%.
6	Tammany Trace & Lonesome Rd	-			-	-	-	-	
7	Lafitte St & US-190	30927	24294 (2021)	21%	8:00 AM - 9:00 AM	4:00 PM – 5:00 PM	2.6%	1.6%	Historic ADT Value is taken from US 190 Project, count location near Lafayette. Historical ADT has value of 29,865.
8	Girod St & Woodrow St	-			-	-	-	-	
9	Girod St Bet. Claiborne St & Lakeshore Dr	2458	1900 (2022)	23%	10:00 AM - 11:00 AM	6:30 PM – 7:30 PM	2.5%	0.3%	Historical ADT taken on a weekday, weekend ADTs quite a bit larger so a 7-day ADT results in a larger number due to this.

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SI.No	Location	2022 ADT	Historical ADT	% difference w.r.t ADT	Peak Hour		HV%		Remarks
					AM Peak	PM Peak	AM Peak	PM Peak	
10	Jackson Ave Bet. Claiborne St & Lakeshore Dr	1560	1569 (2005)	-1%	9:45 AM – 10:45 AM (10:00 AM - 11:00 AM)	4:45 PM - 5:45 PM (5:15 PM – 6:15 PM, 6:00 PM – 7:00 PM)	1.7%	1.0%	Only 2005 Historical AADT is available. Location near US 190. No Growth rate.
11	Molitor St & Tammany Trace	-			-	-		-	

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A validation at each location was performed and remarks are shown in Table 4-4, each location is discussed further below.

- **LA 22 near Beau Chene** – the difference between the 2022 ADT and the historical ADT from 2021 was only 1.4%, anything within 10% is usually considered acceptable due to fluctuations in traffic. This small of a percentile difference on a busy roadway validates the vehicle count data at this location.
- **Judge Tanner** – there is no historical count location along Judge Tanner. The closest location is at the northbound off ramp from N Causeway Blvd. With no historical data to compare, a brief video review was completed to verify data at this location.
- **West Causeway Approach near MHS** – the historical count location is roughly a mile north along West Causeway Approach near LA 22. The historical value is from 2005, is an AADT, and states a growth rate of 5%. With that growth rate applied, it would result in a value of over 29,000 vpd. Looking closer at how this growth rate was calculated, it was found the rate was determined using the difference between historical data from 1986 and 2005. This growth rate appears to be unrealistic along this stretch. Based on this and the distance between the count location and the historical count location, the two are not comparable. A brief video review was completed to verify data at this location.
- **Monroe near Causeway** – the count location was located on the eastern side of N Causeway Boulevard and the only historical count location was located along the western side of N Causeway Boulevard for Monroe Street. Monroe on the eastern side is considerably more active than the western side and thus a comparison cannot be made between this count location and the historical count location. A brief video review was completed to verify data at this location.
- **LA 59 near Fontainebleau HS** – there is no historical ADT along LA 59, but there is a historical AADT near LA 59 and Fountains Park Boulevard. The historical ADT is from 2005 and is roughly 2 miles away from the count location. The growth rate was calculated from a difference between historical data from 1986 and data collected in 2005. This growth rate appears to be unrealistic along this stretch. Based on this and the distance between the count location and the historical count location, the two are not comparable. A brief video review was completed to verify data at this location.
- **US 190 and Lafitte Street** – the initial comparison was from the count data provided by the City from counts taken in 2021 along US 190 near Lafayette Street. This comparison showed a rather large gap of almost 6000 vpd. A historical count location on the LADOTD website was at the same Lafayette Street location and was consulted for comparison. This comparison showed count data from August of 2021 with an ADT of 29,865. This comparison shows that the count location and historical count location comparison is well within 10% and validates the vehicle count data at this location.
- **Girod Street near Lakeshore** – the count location and historical count location were close in location for verification purposes. The historical count data was taken in 2021 but the comparison showed a percentile difference of 23%, and a value of just under 600 cars. Further investigation of the data discovered that the peak day for traffic on Girod Street at this location is on the weekend, while the historical count location ADT was taken on a weekday. Including the higher weekend totals in the 7-day ADT results in a higher ADT. Taking this into account would validate this location.
- **Jackson Avenue near Lakeshore** – the historical count location only provides an AADT near Jackson and US 190. No growth rate was provided with this data. The count location and historical count location data are very comparable, but due to the distance between these locations, a brief video review was completed to verify data at this location.

Pedestrian and bicycle volume data was collected at all the previous 8 locations discussed, as well as three additional locations. Pedestrian and bicycle count data for these locations is shown in Table 4-5.

City of Mandeville Pedestrian and Bicycle Plan
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Table 4-5: Count Location Results and Validation (Pedestrians and Bicycles)

SI. No	Location	Total Volume (7 Days)	ADT	E-W	W-E	N-S	S-N	Peak Hour
1	LA-22/Emerald Rd Bet. Beau Chene Blvd & Heavens Dr	39	6	24	15	-	-	6:00 AM – 7:00 AM (1:15 PM -2:15 PM, 1:30 PM – 2:30 PM, 6:30PM – 7:30 PM)
2	Judge Tanner Blvd Bet. Lakeview Ln & Lakeview Ct	59	8	31	28	-	-	11:30 AM – 12:30 PM
3	W Causeway Approach Bet. Rue Chantilly & Walnut St	739	106	-	-	366	373	4:45 PM – 5:45 PM
4	Monroe St Bet. E Causeway Approach & Antibes St W	578	83	291	287	-	-	7:00 PM – 8:00 PM
5	LA-59 Bet. Bulldog Dr & Hurricane Alley	10	1	-	-	3	7	10:45 AM -11:45 AM (11:00 AM -12:00 AM, 11:15 AM -12:15 AM, 2:15 PM -3:15 PM, 2:30 PM – 3:30 PM, 2:45 PM – 3:45 PM, 3:00 PM – 4:00 PM)
6	Tammany Trace & Lonesome Rd	1505	215	-	-	764	741	5:30 PM – 6:30 PM
7	Lafitte St & US-190	300	43	96	108	16	19	9:00 AM – 10:00 AM
8	Girod St & Woodrow St	2287	327	-	-	1143	1144	11:30 AM – 12:30 PM
9	Girod St Bet. Claiborne St & Lakeshore Dr	3070	439	-	-	1497	1573	11:45 AM – 12:45 PM
10	Jackson Ave Bet. Claiborne St & Lakeshore Dr	3849	550	89	107	1884	1769	5:15 PM – 6:15 PM
11	Molitor St & Tammany Trace	2385	341	1176	1209	-	-	4:45 PM – 5:45 PM

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The pedestrian results show significant pedestrian and bicycle activity in Old Mandeville. The count locations along the Trace show volumes increasing as the Trace goes through Old Mandeville, and the count stations along Girod and Jackson near the Lakefront show significant pedestrian activity. The second highest activity level is along West Causeway approach near Mandeville High School, which may be expected as a school would drive alternative modes of transportation. The satellite locations along Judge Tanner, LA 22, and LA 59 showed very light pedestrian and bicycle traffic, which is expected due to minimal current facilities. A brief video review of all locations was performed to validate the results. The results were also compared to two permanent count locations that are maintained by the University of New Orleans. These count stations are measured by infrared camera. Figure 4-38 shows the location of these permanent count locations. The northern location is along the Tammany Trace near Coffee Street and the southern location is along the Lakefront multi-use path on Lakeshore Drive. The results from the permanent count locations are shown in Table 4-6.



Figure 4-38: Permanent Count Data Locations

Table 4-6: Permanent Count Location Results (Pedestrians and Bicycles)

Site	Location	Total Volume (7 Day)	ADT	Peak Hour
1	Tammany Trace	3404	486	5:00 PM – 6:00 PM
2	Lakeshore	5830	833	6:00 PM – 7:00 PM

The results show that the of the three locations along the Tammany Trace, the most active is the Coffee Street location compared to the Lonesome Drive and Molitor Street locations. This is expected as Coffee Street is closer to Old Mandeville, and the other locations are outliers to the area. The Lakeshore count location showed extensive use of the path along the Lake.

4.9 Data Collection Conclusion

The information gathered guided Strategy Development and helped to establish goals for the plan to achieve. The demographic information allowed for identification of users that may be more prone to walking or biking as a mode of transportation and how close they are to existing facilities. The existing safety and crash data allowed for identification of troublesome areas and improvements and countermeasures to aid in a reduction of these safety issues. The existing field inventory identified important maintenance project locations. The volume data collected identified what existing routes and infrastructure is currently being used and to what degree.

This existing data drove the proposed plan and more importantly the matrix and ranking of projects by priority for both existing infrastructure/maintenance projects as well as identifying potential new routes for future projects that will provide connectivity or new routes.

5 Active Transportation Network Identification Methodology

This section presents a comprehensive vision for walking and bicycling in Mandeville. The intent of this methodology is to create a system of accessible pathways to ensure pedestrians and bicyclists of all ages and abilities have opportunities to safely walk and bike to destinations across the City of Mandeville. This methodology is based on information gathered during the existing conditions analysis, the Project Management Committee meetings, and national best practices for the design of pedestrian and bicycle facilities.

Building a successful bicycle and pedestrian network in the City of Mandeville will require a particular focus on safety and connectivity, as well as creating friendly bicycling and pedestrian environments. Below is a list of the methodologies employed in the development of the active transportation network:

Existing Routes:

- Recognition of destinations that attract non-motorized transportation.
- Connectivity and directness of the network, to reduce major deviations or gaps that could translate into compromising safety and/or route choice.
- Prioritization of projects by safety/access issues found, count data collected, and areas with a high volume of users.
- Connectivity to the Tammany Trace.
- Evaluation of roadways with higher vehicle speeds and higher vehicle traffic volumes that will require greater separation between bicyclists and vehicles.
- Identification of crossings that compromise pedestrians' and bicyclists' safety, to make improvements to existing intersections, aiming to create a safer and more comfortable experience for pedestrians and bicyclists.
- Focus on accessibility concerning the Americans with Disabilities Act (ADA) compliance.

New Facilities:

- Focus on land use and clusters near bicycle/pedestrian routes.
- Emphasis on the directness of the route that will improve safety, cost, and encourage use.
- Connectivity to reduce gaps in the network and expansion of the network to locations outside of the plan limits.
- Evaluation of crash history along routes, providing favorable crossing locations to guarantee safety avoiding areas/routes with high traffic volumes, high traffic speeds, narrow rights of way, and major intersections.
- Revision of the suggested routes to evaluate feasibility, directness, and safety.

Other considerations for the citywide mobility network:

- Upgrade and maintenance of signage for motorized and non-motorized travel.
- Building facilities that minimize the climate effects (closed drainage facilities, sheltered bicycle parking, shaded rest areas)
- Implementation of public bike-share in Old Mandeville Area.
- Installation and management of visible bicycle parking.
- Inclusion of facilities in areas with a high number of householders with zero vehicles. Figure 5-1 shows the areas of Mandeville by the number of households with zero vehicles.

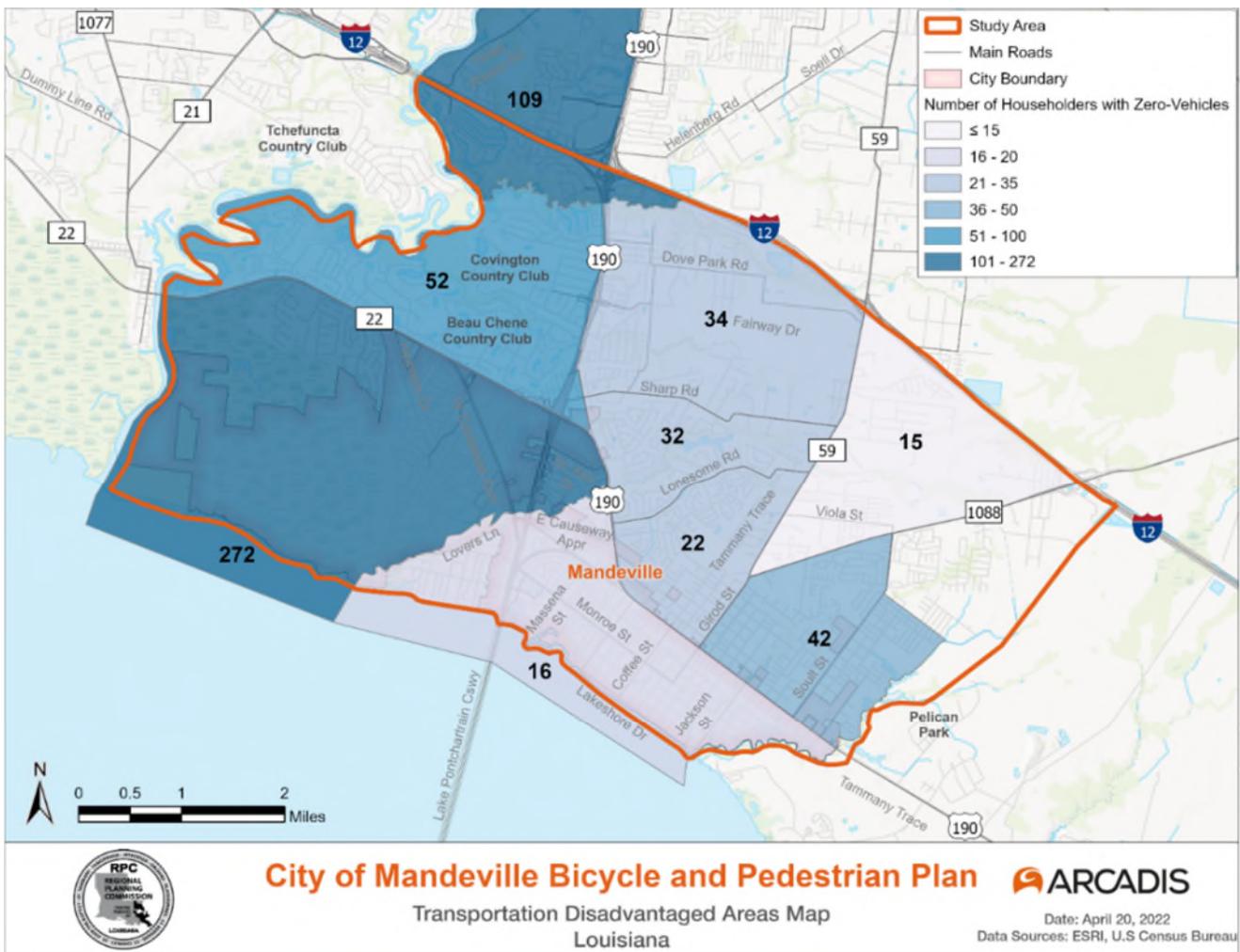


Figure 5-1: Transportation Disadvantaged Areas Map

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6 Program of Projects

6.1 Existing Routes Projects

As part of the existing conditions and data collection, the team performed existing facility field inventories of many routes within the plan limits (See Section 4.7). The inventory was not extensive to all facilities in the plan limits but focused on main routes. These inventories rated the existing facility conditions on a scale of good, fair, and poor. Figure 6-1 shows the conditions of the existing facility within the plan limits, the following color coding was used: green – good, yellow – fair, and red – poor.

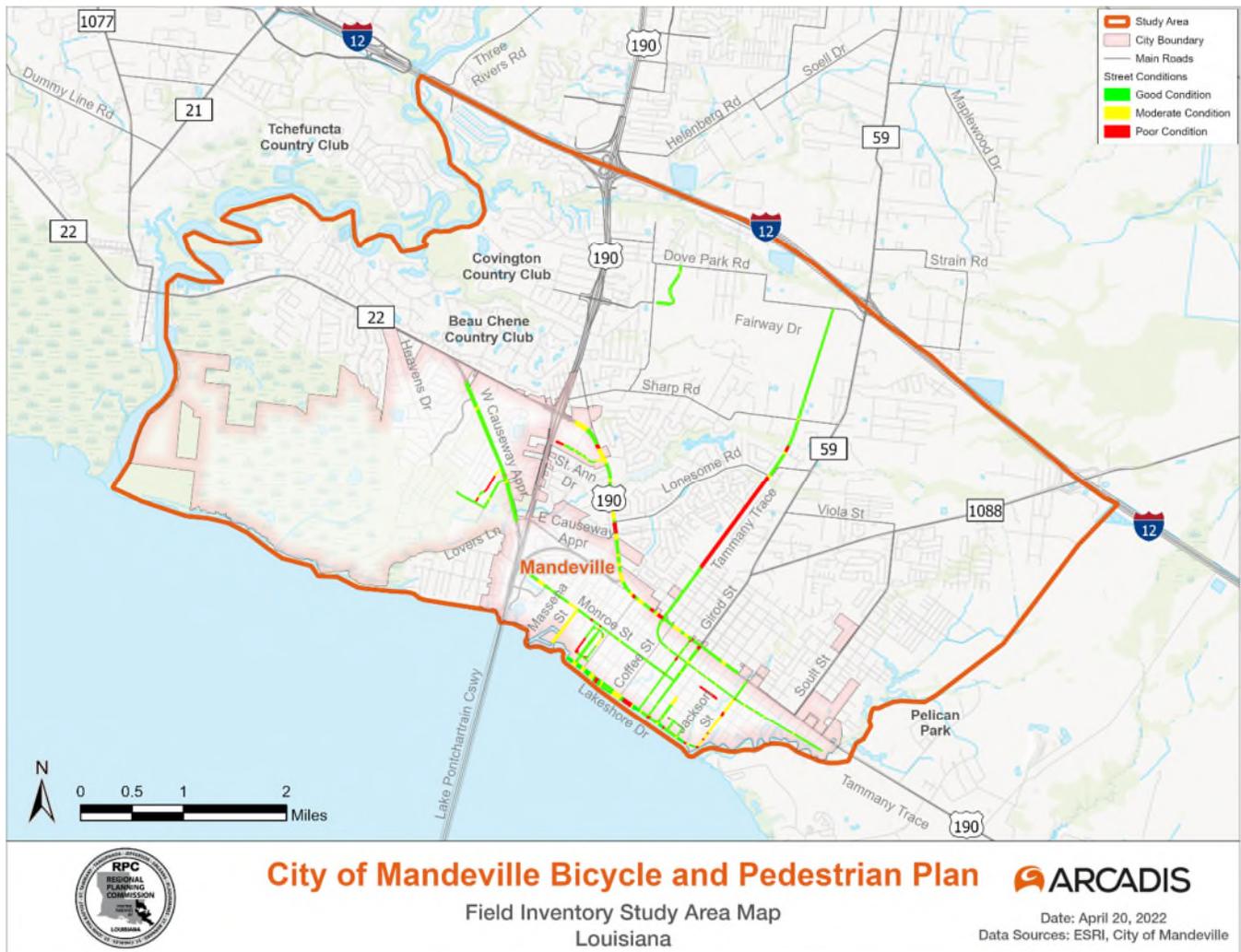


Figure 6-1: Field Inventory Plan Area Map

Providing upkeep and maintenance to the existing system will be critical to accomplishing the goals of this plan for safety, accessibility, and connectivity. A list of recommended projects by street/corridor are shown in Table 6-1. This table includes the limits of the proposed project, the current identified deficiency, and a description of the proposed project to improve the deficiency. Appendix D – Existing Network Projects List includes more information on the identified deficiencies including photographs concerning the proposed project.

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Table 6-1: Existing Network Project Descriptions

Project Location	From	To	Deficiency	Project Description
Claiborne Street				
Claiborne Street Concrete Panel Replacement	Lamarque St	Marigny St	Existing concrete sidewalk slabs in poor conditions near 1724 Claiborne.	Replace deficient concrete slabs.
East Street				
East Street Concrete Panel Replacement	North St	Center St	Existing concrete sidewalk broken or raised in many locations. Very poor conditions due to tree roots, etc.	Replace concrete sidewalk between North St. and Center St.
Girod Street				
Girod Street Concrete Panel Replacement and ADA Ramp Rehabilitation	US 190	Claiborne St	Cracked and sunken concrete sidewalk panels near intersection with US 190. Cracked and dirty ADA ramps.	Repair concrete sidewalk panels. Repair ADA ramps at intersection of Girod and Livingston.
Girod Street Parking Enforcement	Montgomery St	Tammany Trace	Cars parking on existing sidewalk.	Have enforcement of parking on sidewalk.
Jackson Avenue				
Jackson Avenue Path Repaving and Path Bridge	Tammany Trace	Lakeshore Dr.	Existing multi-use pavement is in poor condition (ex: potholes and cracked pavement). Existing pedestrian bridge is missing wood railing in several locations.	Repave and restripe the existing multi-use path along Jackson Ave. Special consideration needed at manhole currently in existing path near Jefferson St. Bridge structure needs to be checked for full replacement, but this assumes a replacement of deficient bridge railing.
Lakeshore Drive				
Lakeshore Drive General Maintenance	W Beach Pkwy	Jackson Ave	Sand and gravel on multi-use path	General maintenance along multi-use path
Lakeshore Drive and Path Improvements	W Beach Pkwy	Foy St	No ADA acceptable handicap ramps at many intersections along Lakeshore Drive.	New ADA Handicap Ramp installation at Lakeshore Drive intersections with W Beach Pkwy, Carondelet St., Wilkinson St., Lafayette St., Coffee St., Carroll St., Laffite St., Marigny Ave., Lamarque St., and Foy St.
Lakeshore Drive Curb Parking Enforcement	Girod St	Girod St	Parking spot curb blocking sidewalk.	Remove perpendicular parking and convert to parallel parking. Provide curb as separation between cars and pedestrians.
Lakeshore Drive and Path Improvements	Lafayette St	Coffee St	Poor Multi-use path condition.	Repave Lakeshore Park Multi-use Path.
Lakeshore Drive Path Widening	W Beach Pkwy	Jackson Ave	Multi-use path is not wide enough to accommodate pedestrians and bicyclists	Widen Lakeshore Drive Multi-use path to 10 ft throughout and add striping to create pedestrian and bicycle lanes.
Lafitte Street				
Lafitte Street General Maintenance	Claiborne St	Lakeshore Drive	Vegetation near vacant lot growing on sidewalk.	General maintenance along the sidewalk path.
Lafitte Street Sidewalk Improvements	US 190	Montgomery St	Lack of sidewalk connectivity from US 190 to existing sidewalk in front of Walgreens.	Add new sidewalk to connect existing sidewalk on Lafitte to Existing sidewalk on US 190. (To be included as part of a future project)
Lafitte Street Sidewalk Improvements	Woodrow St	Livingston St	ADA compliant ramps are missing at the intersection with Woodrow and there is no adequate connectivity between existing sidewalk near Tammany Trace Trailhead and Livingston St.	Construct ADA compliant ramps at the intersection with Woodrow. Construct adequate connectivity between sidewalk along Lafitte between Woodrow and Livingston. (To be included as part of a future project)
Lafitte Street Sidewalk Improvements	Livingston St	Jefferson St	The existing typical section places the sidewalk adjacent to the roadway with no buffer or curb. This occurs between Jefferson and Madison and between Livingston and Monroe.	Set back the sidewalk to provide adequate buffer. Right-of-way likely required, may need to remove sidewalk in this section or consider closed drainage. The section between Livingston and Madison has on-street parking that could be removed at minimum on one side of the street to create adequate buffer. (To be included as part of a future project)

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Project Location	From	To	Deficiency	Project Description
Lafitte Street Sidewalk Improvements	Montgomery St	General Pershing St.	ADA compliant ramps are missing at the intersections of Lafitte at Montgomery and Lafitte at General Pershing.	Construct ADA compliant ramps at the intersections of Lafitte with Montgomery and General Pershing. (To be included as part of a future project)
Livingston Street				
Livingston Street Sidewalk Realignment	Lamarque St	Clausel St	Sidewalk adjacent to roadway with no buffer or separation.	Setback sidewalk as there is room in front of Woodlake Elementary. (Will be included as a proposed project for the addition of sharrows to connect to the Tammany Trace),
Mandeville High School Area				
Skipper Drive General Maintenance	W Causeway Approach	Baseball Field	Gravel on sidewalk.	General maintenance on sidewalk path.
Skipper Drive to US 190 Sidewalk	Baseball Field	Football Stadium	No connectivity between Baseball Field and Football Stadium. Existing sidewalk terminates at Baseball Field.	Provide sidewalk along fence line entire length, modify parallel parking. (To be included as a proposed project.)
Mandeville High Blvd Pavement Markings	Rue Degas	Rue Degas	Existing crosswalk pavement markings in poor condition. No proper warning signs.	Apply new pavement markings and proper signage for crosswalk. (To be included as a proposed project.)
Marigny Street				
Marigny Street Panel Replacement	Monroe St	Lakeshore Dr	Cracked and uneven concrete sidewalk panels.	Repair concrete sidewalk panels.
Monroe Street				
Monroe Street General Maintenance	E Causeway Approach	Lafitte St	Gravel and sand on sidewalk in multiple locations. Barricade blocking sidewalk near Lafitte.	General maintenance along sidewalk path.
Monroe Street Drainage and Sidewalk Improvements	Galvez St	W Beach Pkwy	Catch basin located in the middle of the sidewalk.	Consider providing curb and gutter in this section to allow for a catch basin at the gutter line. Will require regrading of sidewalk to avoid drainage issues along sidewalk.
Monroe Street Drainage and Sidewalk Improvements Realignment	W Beach Pkwy	Carondelet St	Power pole located in sidewalk.	There is sufficient space to route the sidewalk around the power pole. Reroute sidewalk around power pole.
Monroe Street Drainage and Sidewalk Improvements	Antibes St	Massina St	Cracked and uneven concrete panels along Monroe Street.	Replace concrete panels as needed between Antibes and Massina.
Monroe Street Drainage and Sidewalk Improvements	Carondelet St	Wilkinson St	ADA ramp missing at Carondelet and upkeep needed on existing ramp at Wilkinson.	Construct new ADA ramps at the intersection of Monroe and Carondelet and improve the existing ADA ramps at the intersection of Monroe and Wilkinson.
Monroe Street Drainage and Sidewalk Improvements	Carondelet St	Adair St	Several cracked and uneven concrete slabs along Monroe Street.	Replace concrete panels as needed between Carondelet and Adair.
St. Ann Drive				
St. Ann Drive Improvements	Frontage Rd	US 190	Cracked and uneven concrete sidewalk panels.	Repair concrete sidewalk panels.
St. Ann Drive Improvements	St. Joseph St	St. Joseph St	No ADA compliant ramps	Construct compliant ADA ramps at intersection
Tammany Trace				
Tammany Trace Pavement Markings	Carroll St	Molitor St.	Poor pavement marking conditions at intersection crossings in Old Mandeville	Reapply pavement markings at each intersection along the Tammany Trace. It is assumed that this will fall under the program of Trace improvements under St. Tammany Parish.
Tammany Trace	Destin St	Lonesome Rd	Poor pavement conditions. Cracking and uneven pavement.	St. Tammany has stated that the Trace has portions resurfaced every year. It is assumed that this project will fall under that program and not included as part of this plan.
US 190				
US 190 General Maintenance	Frontage Rd	Foy St	Gravel on sidewalk, trees and debris blocking sidewalk, and tree limbs providing low clearance.	General Maintenance along sidewalk path.
US 190 Sidewalk Improvements	Frontage Rd	St. Ann St.	Cracked and uneven panels on both sides of US 190.	Repair and replace concrete panels.

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Project Location	From	To	Deficiency	Project Description
US 190 Sidewalk Improvements	Chinchuba Gardens Dr	Greenleaves Blvd	Cracked and uneven panels on both sides of US 190.	Repair and replace concrete panels.
US 190 Sidewalk Improvements	Leah Dr	Oakwood St	Missing ADA compliant ramps at Mandeville Police Department and Church driveways.	Install ADA compliant ramps at these locations.
US 190 Sidewalk Improvements	East Causeway Approach	East Causeway Approach	Pavement markings for crosswalk at intersection of US 190 and East Causeway Approach in poor condition.	Reapply pavement markings at the intersection.
US 190 Sidewalk Improvements	Park Ave	Carondelet St	Cracked and uneven panels on both sides of US 190.	Repair and replace concrete panels.
US 190 Sidewalk Improvements	Ramon St	Lafayette St	Elevation difference with steep backslope from sidewalk down to building/property near Liz's Diner.	Install handrail along elevation difference, keep driveway opening.
US 190 Sidewalk Improvements	Carroll St	Lafitte St	Water meter in middle of sidewalk.	Move water meter outside of sidewalk concrete slab.
US 190 Sidewalk Improvements	Lamarque St	Foy St	Cracked and uneven panels on both sides of US 190.	Repair and replace concrete panels.
West Causeway Approach				
W Causeway Approach Path Improvements	Mark Smith Dr	Mark Smith Dr	Poor pavement marking conditions for crosswalk at Mark Smith Dr.	Remarking of crosswalk at Mark Smith Dr. Intersection.
W Causeway Approach Path Improvements	Skipper Dr	Mandeville High Blvd	Cracked and sunken concrete panels between Skipper Dr. and Mandeville High Blvd.	Repair cracked and sunken concrete slabs.
West Beach Parkway				
W Beach Parkway Panel Replacement	North St	South St	Cracked and uneven concrete sidewalk panels.	Repair concrete sidewalk panels.

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6.2 Proposed Routes Projects

The bicycle and pedestrian routes recommended in this Plan strive to create a safe, well-connected, and accessible biking and pedestrian environment for users of all ages and abilities. Recommendations are considered planning-level, meaning that they should be used as a guide in selecting projects for implementation and provide general guidance on implementation. For all recommended projects, more detailed design studies will be required to examine specific site conditions and develop designs that reflect local conditions and constraints.

Figures 7-3 to 7-4 show the proposed projects for new facilities to be developed in the City of Mandeville. Figure 6-3 shows the proposed new on-street and off-street bicycle facilities as well as the existing bicycle facilities in the plan area. Figure 6-4 shows the proposed new pedestrian facilities in the plan area. The figures have numbers by each route to match the descriptions for each route on the following pages. Several projects recommend potential traffic calming solutions. Each project with its limits (outlined in red) are shown with each project.

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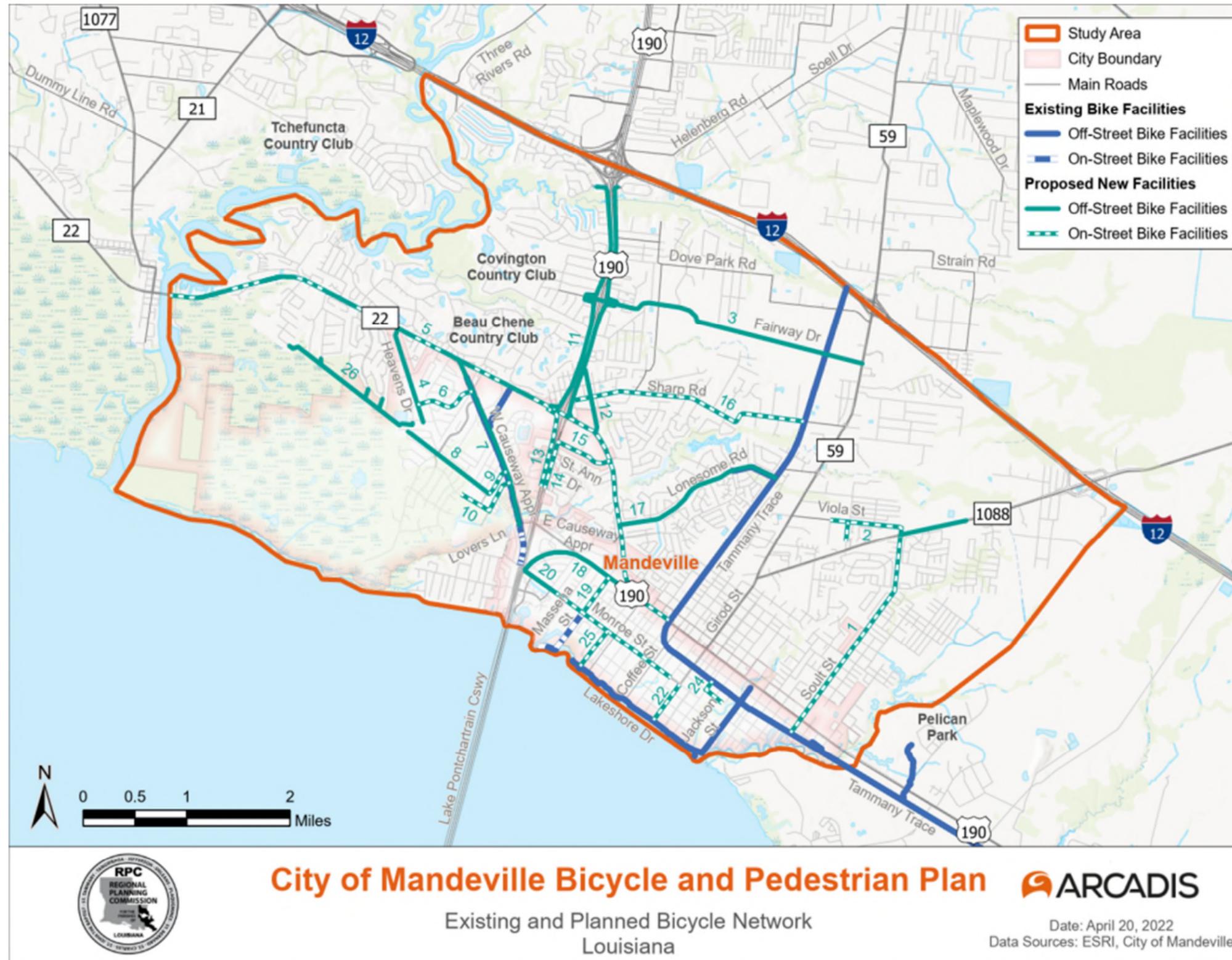


Figure 6-2: Existing and Planned Bicycle Network

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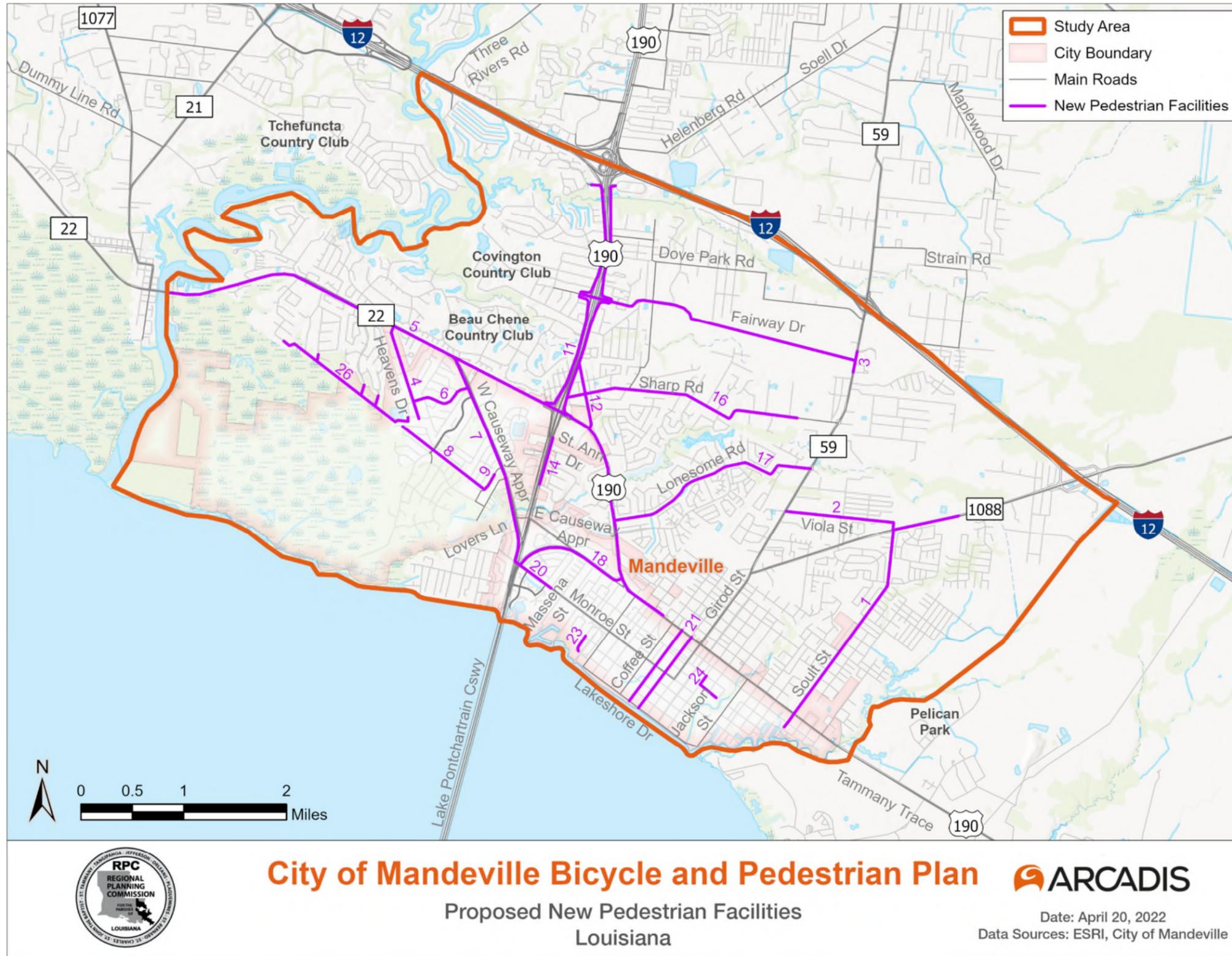


Figure 6-3: Proposed New Pedestrian Facilities

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6.2.1 Soutl Street and LA 1088 Improvements

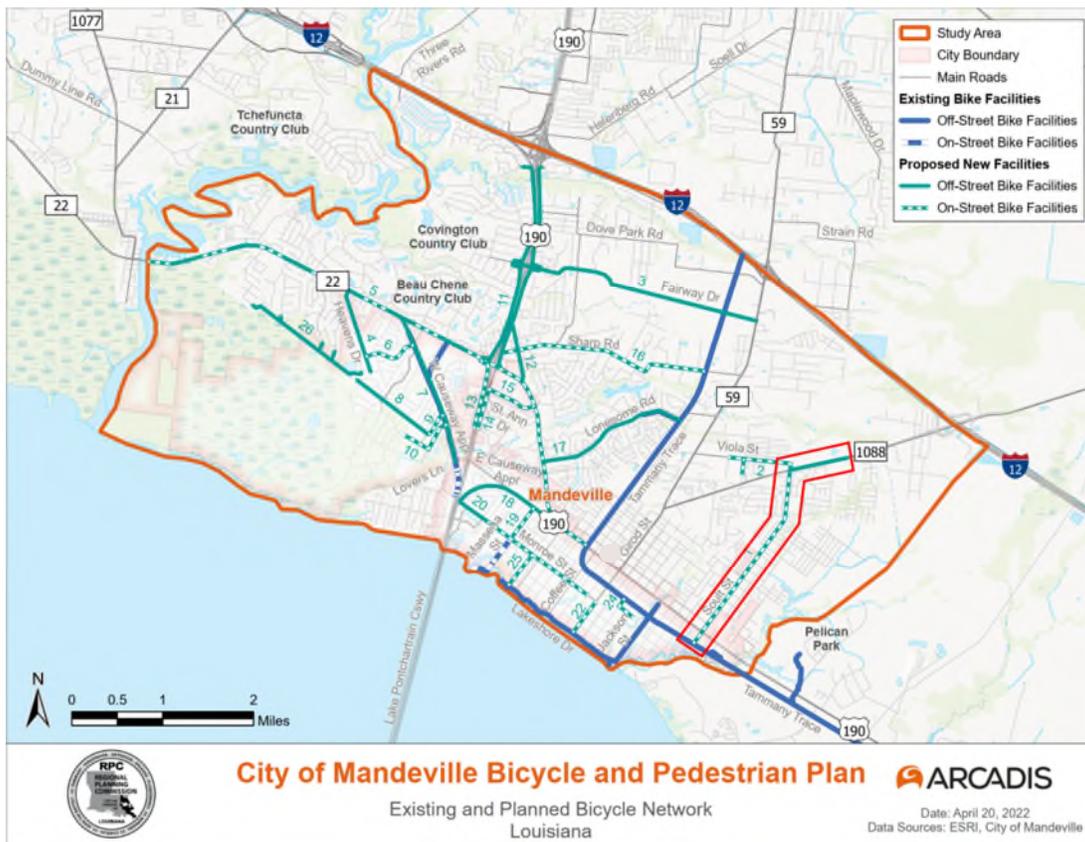


Figure 6-4: Soutl Street Sharrow and Sidewalk Location

Existing Conditions

Soutl Street is a local two-lane road with a 30-mph limit. Soutl Street is located on the east side of Mandeville and runs from north to south from the Tammany Trace to LA 1088. Soutl Street is currently seeing subdivision improvements along the roadway with a conversion to closed drainage for the areas near the intersections with US 190 and LA 59. LA 1088 is a two-lane roadway with a 45-mph speed limit with open drainage.

Proposed Improvements

Provide sidewalks on both sides of Soutl Street, as well as sharrow pavement markings (example shown in Figure 8-4) on the existing roadway between the Tammany Trace and LA 1088 for bicyclists. A multi-use path will also be constructed on the south side of LA 1088 from Soutl Street to the Mandeville Sports Complex. Due to the large number of subdivisions on Soutl Street, traffic calming devices (Table 8-7) are recommended at strategic locations to provide safe pedestrian and bicycle crossings.

Project Reasoning/Methodology

Soutl Street has a lower speed than LA 59 and LA 1088 which are signed at 45-mph for most of their length in the plan limits. The lower speed along Soutl Street will allow for a shared facility between vehicles and bikes. The multi-use path on LA 1088 will remove users from the roadway due to the higher speeds but will be under a half-mile in length, which is a requirement under the **Louisiana Department of Transportation and Development Design Guidelines** if multi-use paths are not to be provided on both sides of the roadway. Taking advantage of the current construction along Soutl Street to install closed drainage infrastructure will provide the opportunity to

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include sidewalks at a lower cost than other nearby facilities. As shown in Figure 5-1, the neighborhoods in this area have a moderately high number of users that do not have access to motor vehicles. Therefore, a dedicated route will provide access to the neighborhoods adjacent to Soutl Street, so that they can access restaurants and shopping centers to the South and West via the Tammany Trace. This route will also provide direct access to the Mandeville Sports Complex for other users in the plan area.

6.2.2 Viola Street Improvements

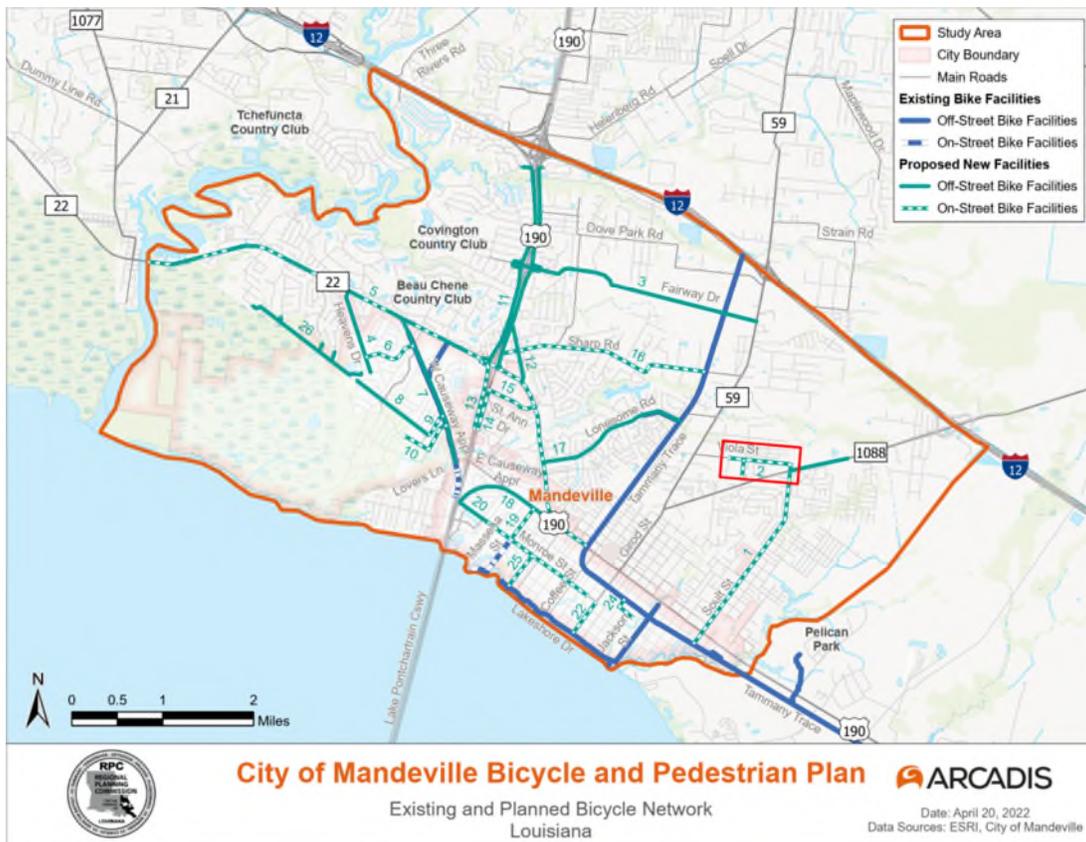


Figure 6-5: Viola Street Sharrow and Sidewalk Location

Existing Conditions

Viola Street is a local two-lane street with a 25-mph speed limit and open drainage. The street does not have any existing bicycle or pedestrian facilities. Viola Street is mainly a residential area with two elementary schools (Magnolia Trace Elementary and Marigny Elementary) and one middle school (Lake Harbor Middle) along the roadway.

Proposed Improvements

Provide sharrow pavement markings on the existing roadway and extend the construction of sidewalks on both sides of Viola Street between the intersection at LA 1088 and the pedestrian crossing at Marigny Elementary School. A crosswalk will be installed at the intersection of LA 1088 at Viola/Soutl Street with ADA ramps to take advantage of the All-Way Stop Controlled intersection that is currently located there. It is also recommended that the pedestrian crossing at Marigny Elementary be renovated into a raised crossing as shown in Table 8-7.

Project Reasoning/Methodology

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This project will provide connectivity from Soutl Street and LA 1088 to the three Schools located along Viola Street, as well as a direct connection with Tammany Trace via Soutl Street.

6.2.3 Fairway Drive/Judge Tanner Boulevard Multi-use Path

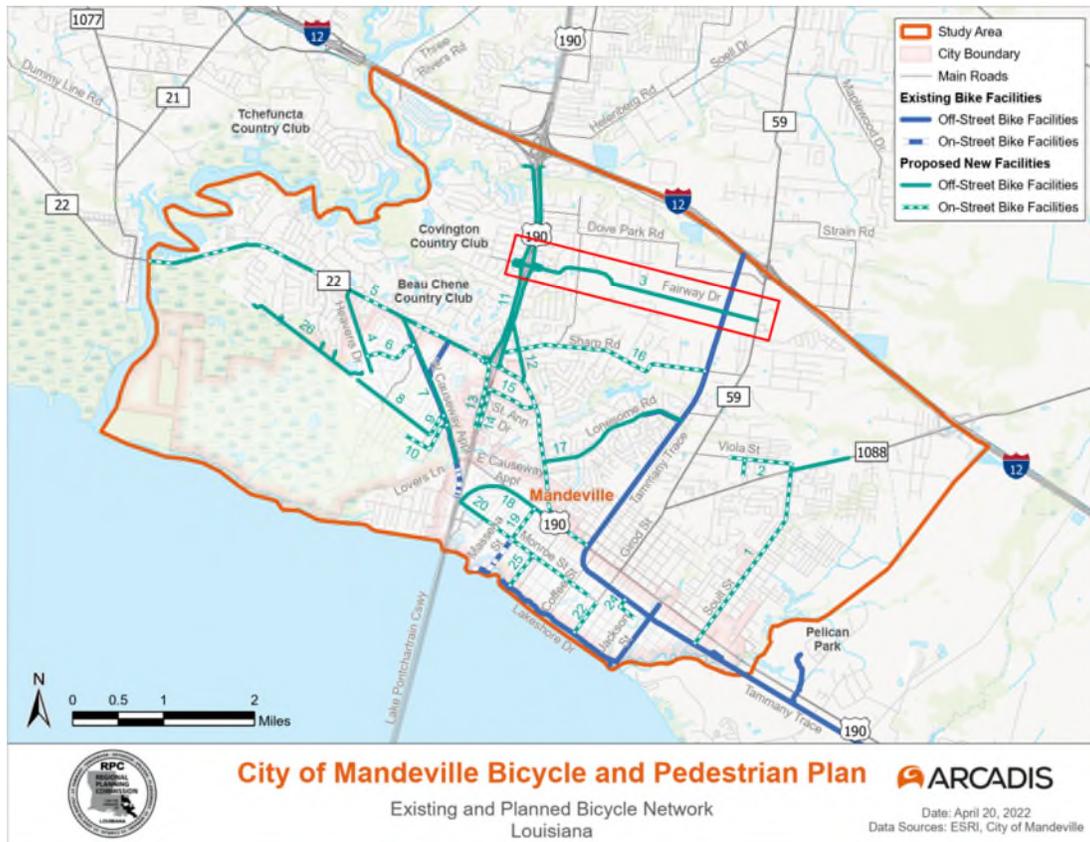


Figure 6-6: Judge Tanner Boulevard Multi-Use Path Location

Existing Conditions

There is currently a proposed multi-use path from the previous plan that will connect LA 59 to North Causeway Boulevard via a multi-use path. There is currently undeveloped land from Holy Trinity Church on Judge Tanner Boulevard to LA 59. Judge Tanner Boulevard from Holy Trinity Church to Lakeview Regional Medical Center is a two-lane roadway with a median, progressing west from Lakeview Regional Medical Center to Causeway Boulevard, where Judge Tanner Boulevard becomes a separate four-lane facility with a median. The current speed limit on Judge Tanner Boulevard is 25-mph.

Proposed Improvements

A multi-use path will be constructed along Judge Tanner Boulevard between North Causeway Boulevard and Holy Trinity Church. Moving eastward after this point, the path will continue as a standalone multi-use path that runs through undeveloped property until it intersects LA 59 near Fontainebleau High School and Junior High School. To increase access and safety to both schools, a high visibility crosswalk will be placed at the intersection of the multi-use path and LA 59. Additionally, a sidewalk will be installed along the east side of LA 59 between Hurricane Alley and Bulldog Drive.

Project Reasoning/Methodology

The project will provide direct connectivity to Lakeview Regional Medical Center for points to the south, as the path will intersect with proposed improvements along N Causeway Boulevard Frontage Roads, as well as intersecting with the existing Tammany Trace multi-use path. The route also provides access to Fontainebleau High School. This route will provide east-west connectivity between users residing in the eastern portions of Mandeville along LA 59 near Fontainebleau High School and the larger commercial and residential areas along North Causeway Boulevard.

6.2.4 Heavens Drive Improvements

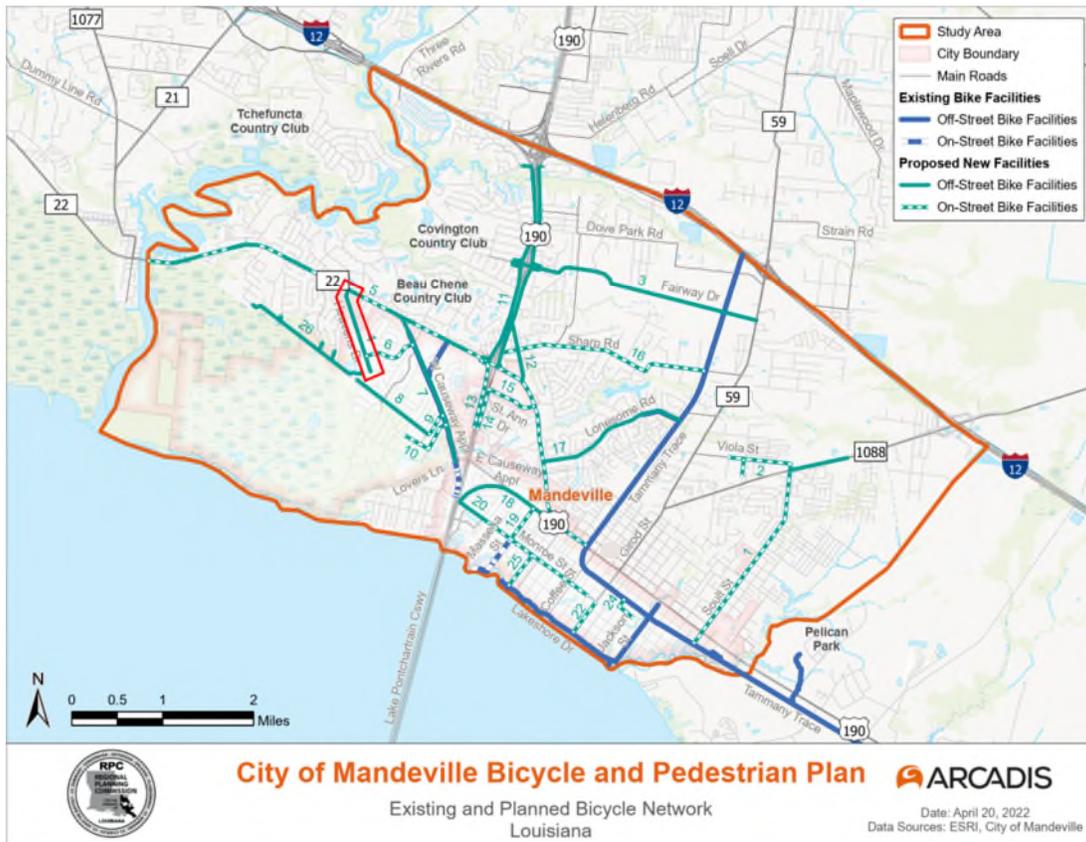


Figure 6-7: Heavens Drive Multi-use Path Location

Existing Conditions

Heavens Drive is a local two-lane roadway with a 25-mph speed limit, closed drainage, and a wide right-of-way. The area is currently residential with a sidewalk on the west side of Heavens Drive from Elizabeth Drive to Libra Street with closed drainage on both sides of the street. There are no current pathways. Drainage is open south of Libra Street along Heavens Drive.

Proposed Improvements

There is currently a proposed multi-use path from the City of Mandeville Bicycle and Pedestrian Master Plan (2007) that will connect LA 22 to Garden Drive via a multi-use path along Heavens Drive. The proposed project will construct a multi-use path along Heavens Drive from LA 22 to Dorado Drive. The multi-use path will intersect a proposed project along Garden Avenue. The multi-use path will be for pedestrians and bicyclists.

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Project Reasoning/Methodology

The project will provide connectivity between the residential areas around Heavens Drive to the commercial corridor along LA 22, the Neighborwoods Park trailhead, and the proposed project along Garden Ave. The proposed path will be a 10 ft wide asphalt path, approximately 4,800 ft long.

6.2.5 LA 22 / US 190 Improvements

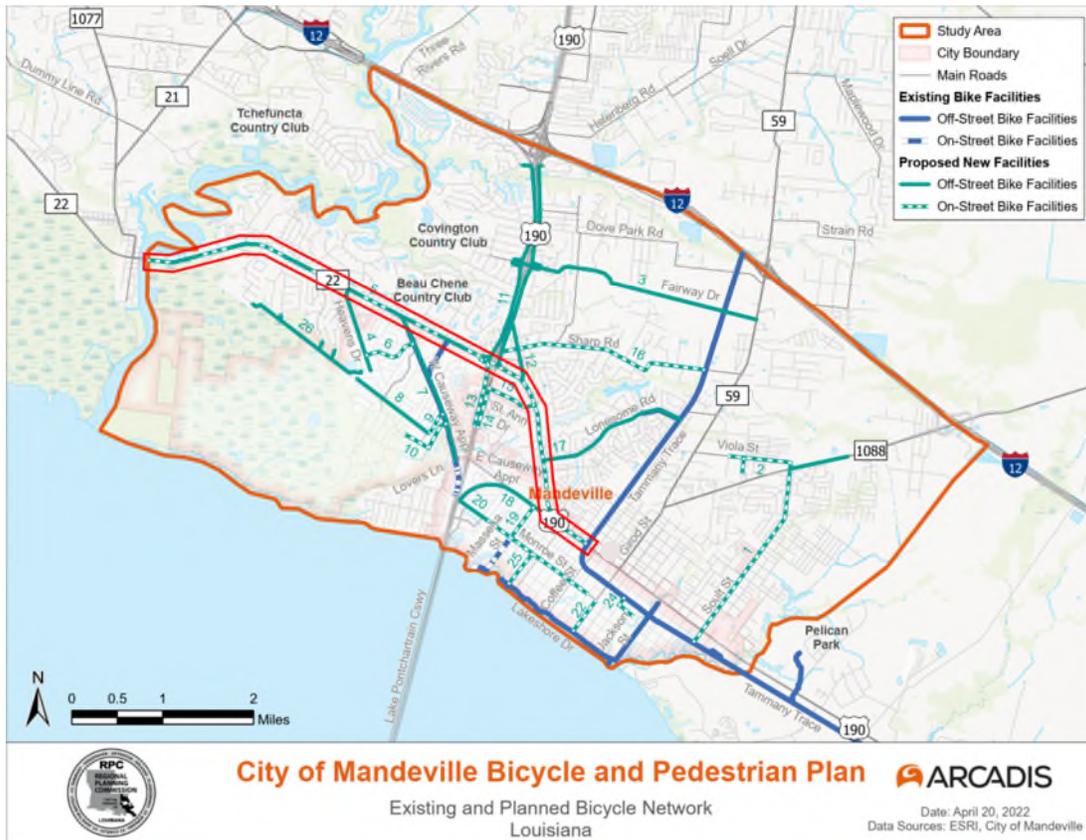


Figure 6-8: LA 22/ US190 Improvements Location

Existing Conditions

Louisiana Highway 22 is a state route that is a three-lane roadway with a dedicated center turn lane from Marina Del Ray Drive to Marina Boulevard and is a three-lane roadway with two lanes headed westbound from Marina Boulevard to West Causeway Approach. LA 22 has a speed limit ranging between 40-mph and 55-mph with open drainage. LA 22 has one of the higher ADT's (Average Daily Traffic) in the city (26,000 vehicles per day).

US 190 is a 4-lane US route divided by a median from North Causeway Boulevard to Carondelet Street. From Carondelet Street to Tammany Trace, it transitions into a 4-lane roadway divided by a two-way left turn lane. It has a speed limit of 45-mph from N Causeway Boulevard to Leah Drive, where it reduces to 40 mph. There is closed drainage throughout the area of interest. US 190 has one of the higher ADTs in the city with approximately 32,000 vehicles per day. LA 22 and US 190 have a wide variety of land uses along the facility including rural, residential, and commercial sections.

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Proposed Improvements

The improvements along LA 22 will be termed short term and long term. LA 22 is a vital corridor for east-west movement and the cost of a full long-term improvement will be daunting. The short-term and long-term improvements are discussed below.

Short-Term: Proposed improvements along LA 22 include the addition of a multi-use path along the southside of LA 22 from the Fairview-Riverside State Park to Lovers Lane. This will require a design exception since the length of the multi-use path along one side of the roadway will exceed ½ mile with no path on the opposite side, which does not meet LADOTD Design Guidelines. A high visibility pedestrian crossing will be needed at the entrance to Fairview Riverside State Park. Due to the intersection geometry, the intersection at W Causeway Approach and LA 22 creates a problem area for pedestrian traffic. To address this, the multi-use path will continue eastward along the W Causeway Approach exit to Lotus Drive. The path will then run parallel to Lotus Drive until it intersects LA 22 again and will continue eastward from this point. The traffic signal at the intersection of LA 22 and W Causeway Approach will be replaced to create a signalized pedestrian crossing at W Causeway Approach and Lotus Drive.

Long-Term: Proposed improvements along LA 22 and US 190 include bike lanes and sidewalks on both the north and south side of the roadway from Lovers Lane to the Tammany Trace overpass. The north side will continue with a bike lane and sidewalk between Lovers Lane and the Fairview-Riverside State Park, while the south side will utilize the multi-use path constructed as part of the short-term improvements. Due to high summer temperatures and heavy rainfall in the region, the installation of thoughtfully placed benches and shaded rest areas along this path is recommended. The proposed improvement will span approximately 6 miles. The existing roadway will need to be widened to accommodate the addition of bike lanes and sidewalk added where there are portions missing on both sides of the roadway. The bike lane will need to be offset from the roadway in the higher speed locations of LA 22.

Project Reasoning/Methodology

This project represents the major east-west connection for the entire proposed system. Adding the proposed facilities will provide connectivity to the southwest Mandeville area, where there is the highest concentration of households without access to a motor vehicle. These improvements will furnish accessible commuting opportunities for transportation disadvantaged communities to reach the city center and the many destinations it provides. This will in turn create new opportunities for commerce and employment. The project will also provide transportation connectivity from the Mandeville/Madisonville border to the Tammany Trace Trail.

6.2.6 Garden Avenue Improvements

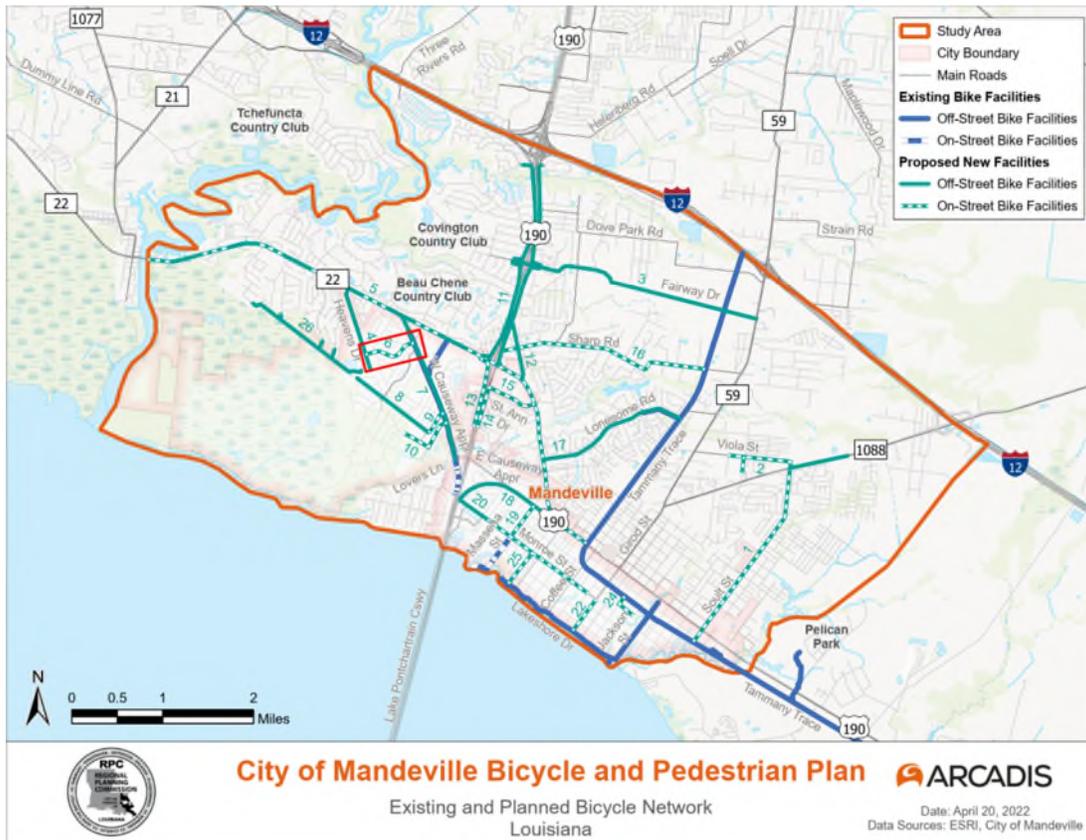


Figure 6-9: Garden Avenue Sharrow and Sidewalk Location

Existing Conditions

Garden Avenue is a local two-lane roadway with a 25-mph speed limit and closed drainage. The land use for the surrounding area is residential.

Proposed Improvements

Provide sharrow pavement markings on the existing roadway and extend the construction of sidewalks along Garden Avenue, connecting the proposed multi-use path along Heavens Drive to the existing multi-use path along West Causeway Approach.

Project Reasoning/Methodology

The project will provide connectivity between the residential areas around Garden Avenue to the commercial corridor along LA 22 and West Causeway Approach, the Neighborwoods Park trailhead, and the proposed multi-use path along Heavens Drive.

6.2.7 West Causeway Approach Multi-use Path on North Side

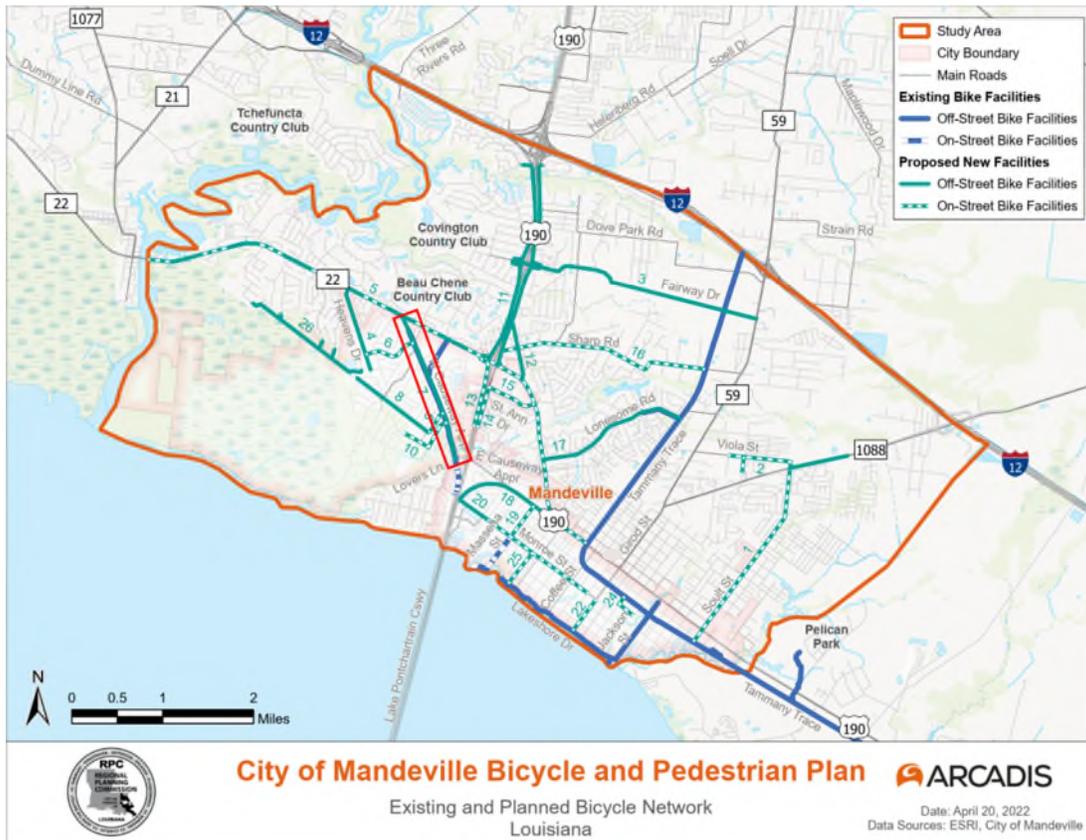


Figure 6-10: West Causeway Approach Multi-Use Path Location

Existing Conditions

West Causeway Approach is a local 4-lane road divided by a median, with open drainage and a speed limit of 45-mph. There is currently a multi-use path on the south side of West Causeway Approach from just north of Garden Avenue to Sandra Lee Drive, where it intersects an existing sharrow installation down the W Causeway Approach Service Road.

Proposed Improvements

A multi-use path will be constructed on the north side of West Causeway Approach to match the multi-use path along the south side of the road. Several crossings along West Causeway Approach will be constructed to connect the north and south side multi-use paths. Suggested high visibility crossing locations include: near the north by Heritage Manor, Mary Queen of Peace Catholic Church, Mandeville High Boulevard, and Florida Street.

Additionally, the existing multi-use path along the south side of W Causeway Approach will be extended to the north to Lotus Drive. There it will intersect with the proposed crossing for the LA 22 multi-use path.

Project Reasoning/Methodology

The multi-use path will connect multiple subdivisions and residential areas to schools, churches, and commercial areas, providing safe and accessible transport alternatives. The path will provide a connection via the proposed improvements at LA 22 to the existing sharrows on the Service Road.

6.2.8 Live Oak Boulevard/CLECO ROW Multi-use Path

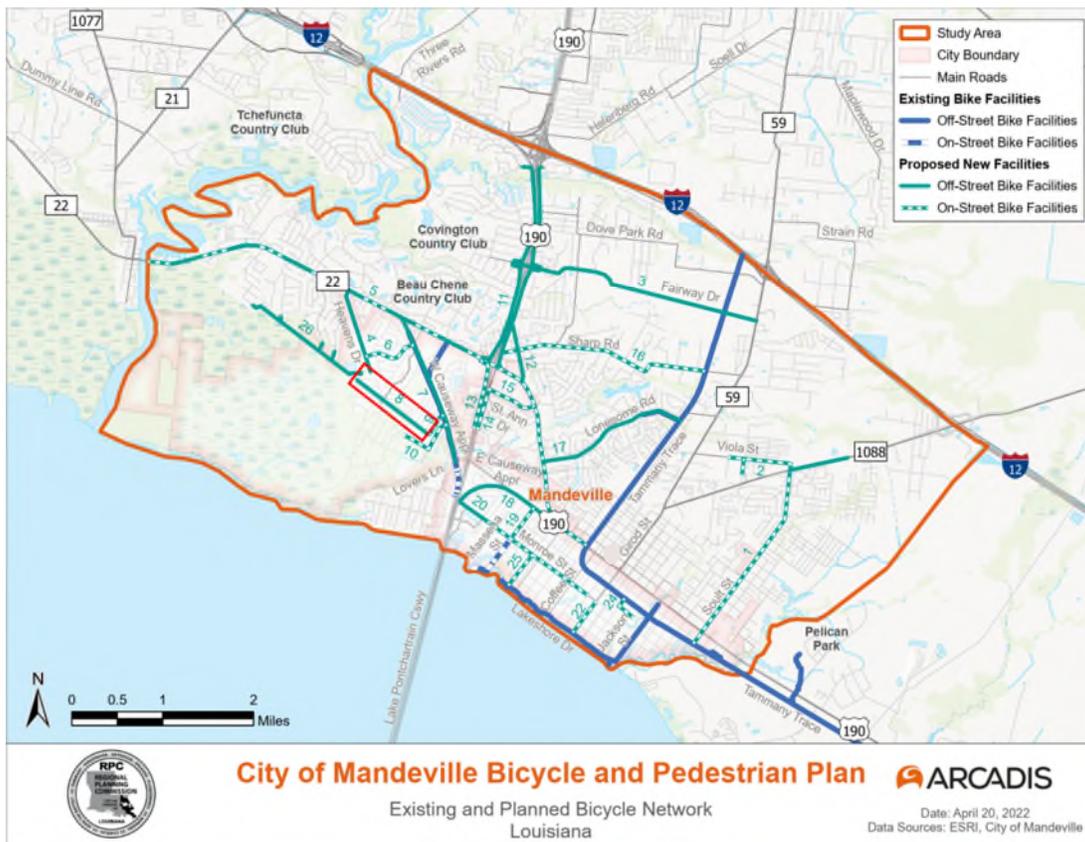


Figure 6-11: Live Oak Boulevard/CLECO ROW Multi-Use Path Location

Existing Conditions

Live Oak Boulevard is a two-lane divided street with closed drainage and a speed limit of 20-mph. There is currently a power utility company right-of-way extending from the eastern end of Live Oak Boulevard to LA 22.

Proposed Improvements

A multi-use path will be constructed that connects Skipper Drive to Live Oak Boulevard following the CLECO right-of-way/easement. The multi-use path will continue following this easement past the end of Live Oak Boulevard until it connects to Cardinal Drive.

Project Reasoning/Methodology

Utility rights-of-way are natural avenues for bicycle and pedestrian paths. The CLECO right of way runs roughly east-west connecting Mandeville High School and the Woodstone, the Sanctuary, and Chateau Village residential neighborhoods. The proposed multi-use path will also provide connectivity from the high school and adjacent neighborhoods to West Causeway Approach via Skipper Drive.

6.2.9 Skipper Drive Improvements

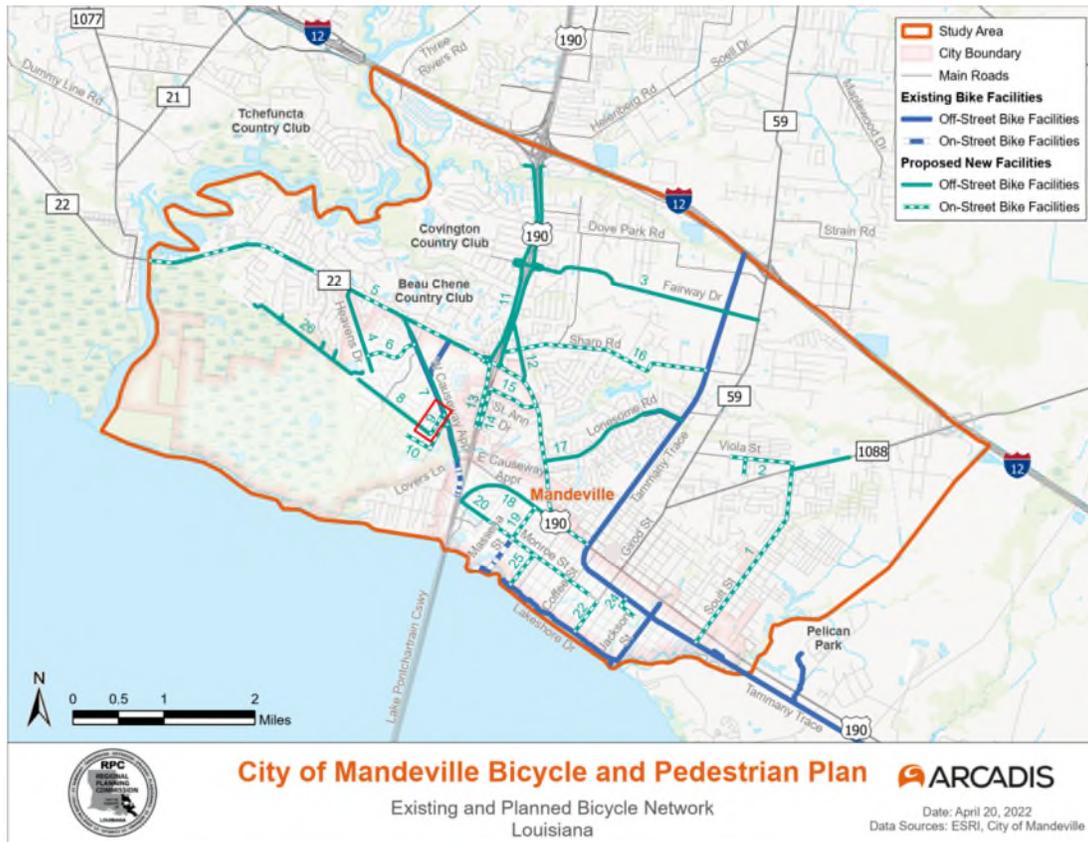


Figure 6-12: Skipper Drive Location

Existing Conditions

Skipper Drive is a local two-lane road with a speed limit of 20-mph that runs alongside Mandeville High School. There is closed drainage along Skipper Drive except for a roughly 300-foot section on the west side of the street near the proposed crossing at Live Oak Boulevard. There are existing sidewalks starting at the proposed crossing at Live Oak Boulevard and continuing to the field house at Sidney Theriot Stadium.

Proposed Improvements

The existing sidewalk will be extended both south and north to reach Purple Martin Lane and West Causeway Approach, respectively. Additionally, sharrow pavement markings will be added to Skipper Drive from West Causeway Approach to the multi-use path at Live Oak Boulevard.

Project Reasoning/Methodology

The proposed sidewalk improvements will serve to connect Mandeville High School with the school's sports complex. The addition of the Skipper Drive sharrow and sidewalk extensions will also provide connectivity to the multi-use paths along CLECO ROW/Live Oak Boulevard and West Causeway Approach. These improvements will link the surrounding residential areas along West Causeway Boulevard and Live Oak Boulevard to Mandeville High School.

6.2.10 Mandeville High Boulevard and Purple Martin Lane Improvements

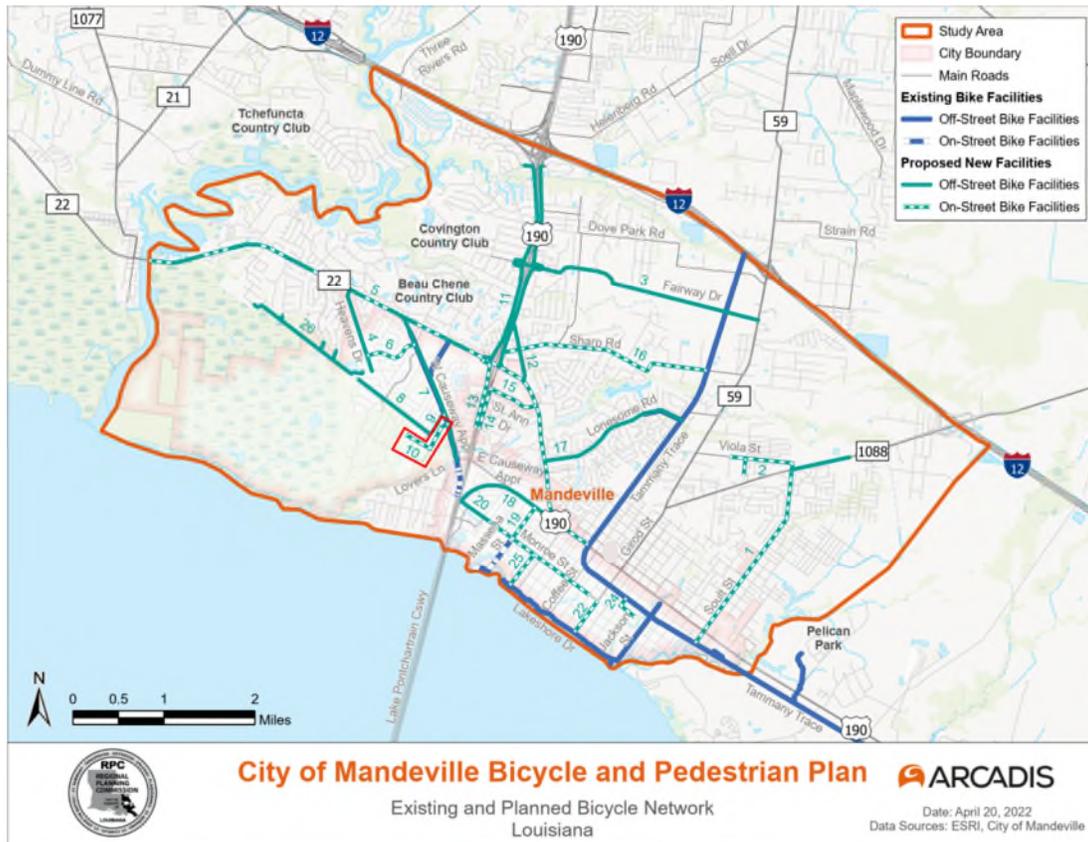


Figure 6-13: Mandeville High Boulevard and Purple Martin Lane Location

Existing Conditions

Mandeville High Boulevard is a two-lane local road with a speed limit of 25-mph and closed drainage. Purple Martin Lane is a two-lane local road with a speed limit of 25-mph and open drainage on the south side of the street and closed drainage along the north side of the street. Both Mandeville High Boulevard and Purple Martin Lane are adjacent to Mandeville High School and have existing sidewalks extending from the Sanctuary subdivision to West Causeway Approach.

Proposed Improvements

In addition to the existing sidewalks, sharrow pavement markings will be added along Mandeville High Boulevard and Purple Martin Lane from West Causeway Approach to the Sanctuary subdivision.

Project Reasoning/Methodology

Due to the lower speeds along both Mandeville High Boulevard and Purple Martin Lane, sharrow markings will be added along both streets. This will provide bicycle access to Mandeville High School to and from West Causeway Approach and the Sanctuary residential area.

6.2.11 North Causeway/US 190 Frontage Road Improvements

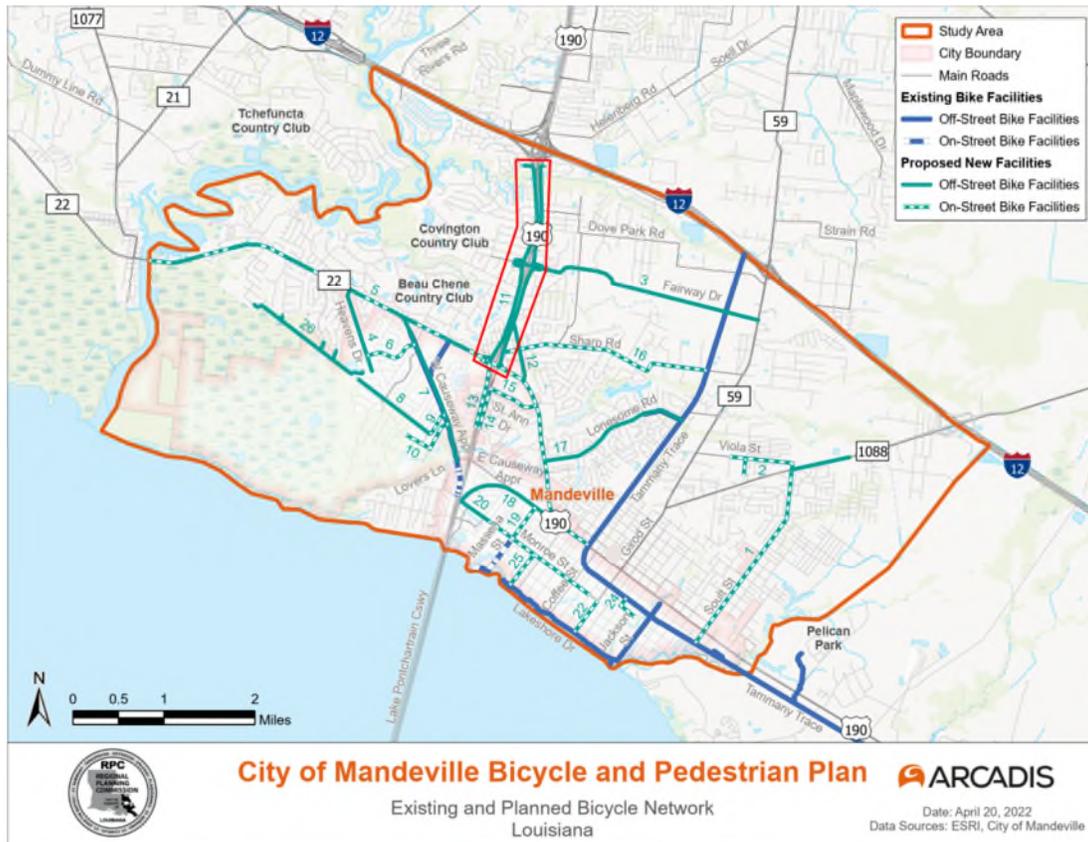


Figure 6-14: North Causeway/ US 190 Frontage Road Location

Existing Conditions

North Causeway/US 190 Frontage Road is a two-lane roadway with a speed limit of 45-mph and open drainage. North Causeway/US 190 Frontage Rd is a residential area except for areas near the intersections of Judge Tanner Boulevard and LA 22. There are currently no pedestrian or bicycle accommodations.

Proposed Improvements

Multi-use paths will be constructed along the west side of North Causeway/US 190 West Frontage Road from LA 22 to River Oaks Drive, and along the east side of North Causeway/US 190 East Frontage Road from Asbury Drive to Ponchitolawa Drive.

Project Reasoning/Methodology

The proposed multi-use paths along North Causeway/US 190 Service Roads will provide connectivity from the residential areas east and west of North Causeway Boulevard to the proposed improvements along LA 22 and Judge Tanner Boulevard. The improvements will also give residents access to the business hubs at the interchanges of US 190 at LA 22 and Judge Tanner Boulevard. This will provide connectivity to the system for users in the northern portion of the plan area and provide access to routes both north-south as well as east-west.

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6.2.12 Asbury Drive Multi-use Path

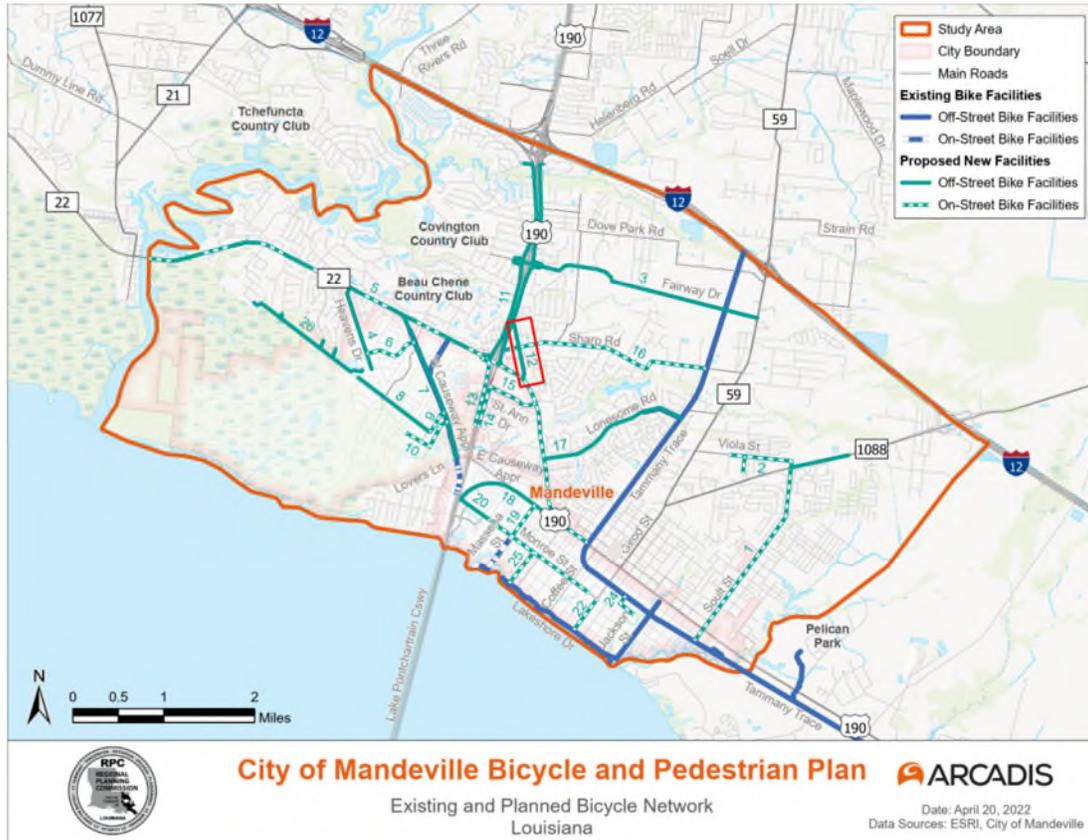


Figure 6-15: Asbury Drive Multi-Use Path Location

Existing Conditions

Asbury Drive is a two-lane Parish route with a dedicated two-way left turn lane, a speed limit of 40-mph, and open drainage. There are no existing sidewalks or bike paths along Asbury Drive. The land use along Asbury Drive is predominantly commercial.

Proposed Improvements

A multi-use path will be constructed along the east side of Asbury Drive from US 190 East Service Road to Marquette Street. At this point, the multi-use path will transition to the west side of Asbury Drive from Marquette Street to Sharp Road. Due to inadequate setback past this point, a 4-way pedestrian crossing will be installed at the intersection of Asbury Drive and Sharp Road, and the multi-use path will continue along the east side of Asbury Drive from Sharp Road to US 190.

Project Reasoning/Methodology

The multi-use path along Asbury Drive will provide a necessary connection between N Causeway/US 190 East Frontage Road, Sharp Road, and US 190. This connectivity will give users access to the large number of businesses in the area.

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6.2.13 Lovers Lane Improvements

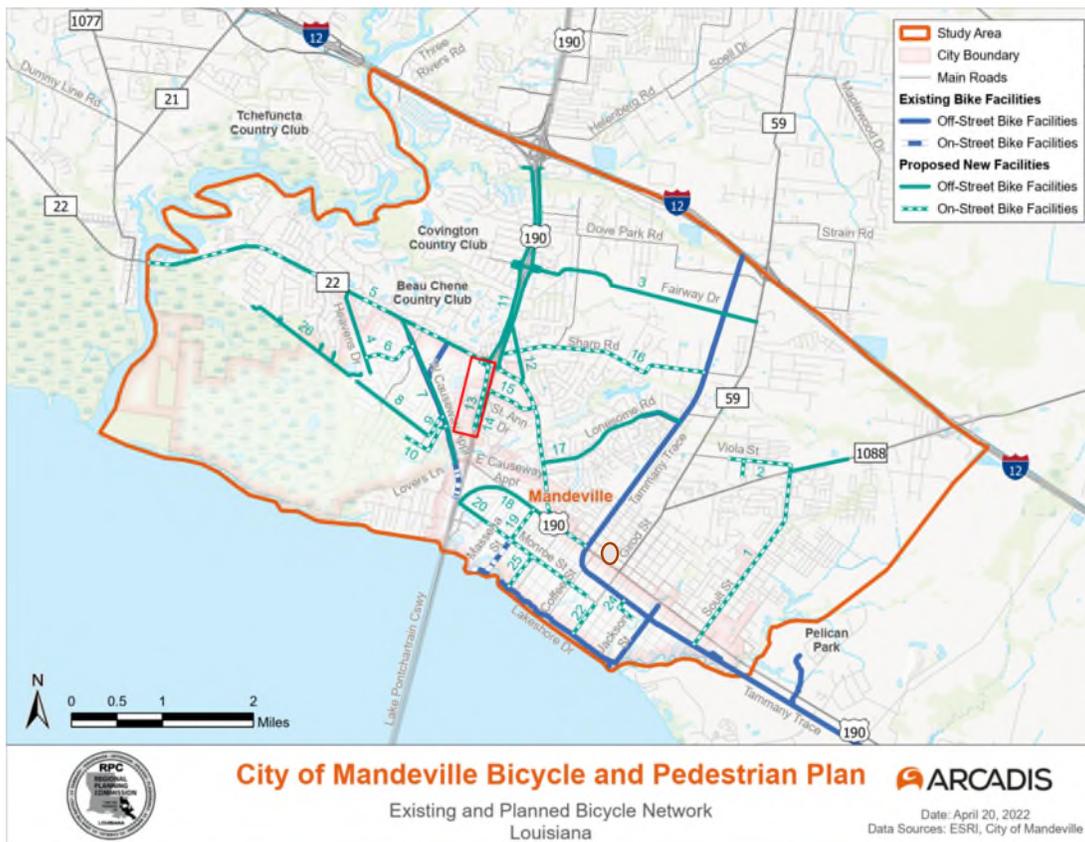


Figure 6-16: Lovers Lane Location

Existing Conditions

Lovers Lane is a local two-lane road with a speed limit of 25-mph and open drainage. There are existing sidewalks between Brookside Drive and LA 22. Lovers Lane is a mixture of residential and commercial areas.

Proposed Improvements

Due to the lower speed limit along Lovers Lane, sharrow pavement markings will be added down the Lovers Lane portion of the Frontage Road to the intersection with Brookside Drive. A crosswalk will be installed at the signal of North Causeway Boulevard and Brookside Drive to allow access across North Causeway Boulevard.

Project Reasoning/Methodology

The proposed sharrow markings will improve existing access from the Fontainebleau residential areas to businesses along the west side of North Causeway Boulevard and the Northlake shopping center.

6.2.14 Elmwood Place Improvements

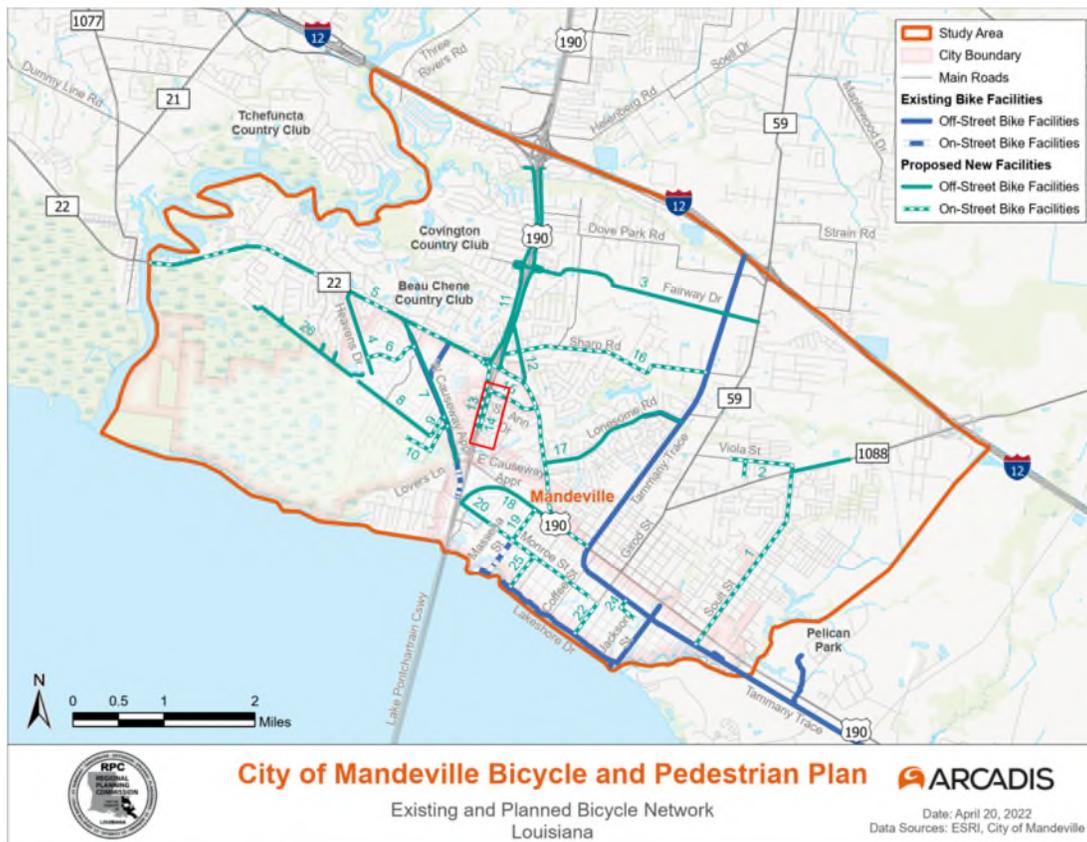


Figure 6-17: Elmwood Place Location

Existing Conditions

Elmwood Place is a local two-lane road with a speed limit of 40-mph and open drainage. It does not have any existing pedestrian or bike paths and provides a mixture of residential and commercial access.

Proposed Improvements

Bike lane and sidewalks will be installed along the east side of Elmwood Place from the crossing at Brookside Drive to the proposed sharrow installation along St. Ann Drive. The proposed improvements may require right-of-way to be purchased or utilities be relocated in select areas.

Project Reasoning/Methodology

The proposed improvements will add bike and pedestrian access from residential areas to the businesses along the east side of North Causeway Boulevard and the Premier Centre shopping center via the proposed St. Ann Drive improvements. Improvements along Elmwood Place will differ from those proposed on its' opposing twin, Lovers Lane. This is due to the higher speed limit of 40-mph along Elmwood Place, making a sharrow arrangement like the one proposed on Lovers Lane impractical.

6.2.15 St. Ann Drive Improvements

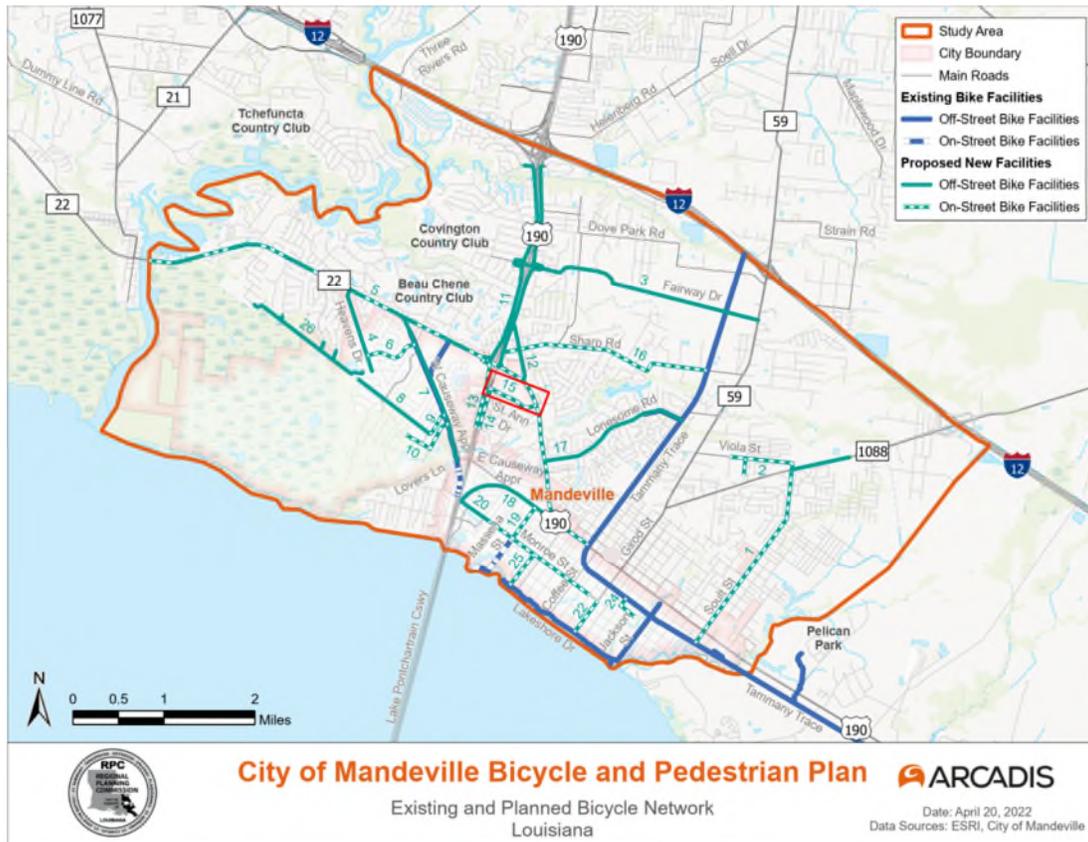


Figure 6-18. St. Ann Drive Location

Existing Conditions

St Ann Drive is a local two-lane road with a speed limit of 25-mph and closed drainage. It has sidewalks on the south side of the road connecting North Causeway Boulevard with US 190.

Proposed Improvements

Sharrow pavement markings will be added to the existing roadway beginning at US 190 and will connect to the proposed bike lane and sidewalk along Elmwood Place.

Project Reasoning/Methodology

The project will provide additional access from the facilities along US 190 to businesses and residential areas along St. Ann Drive, most notably Premier Centre and Botanica Apartments. It will also create a necessary connection to the proposed improvements along Elmwood Place, and subsequently to the protected crossing to the west side of North Causeway Boulevard at Brookside Drive.

6.2.16 Sharp Road Improvements

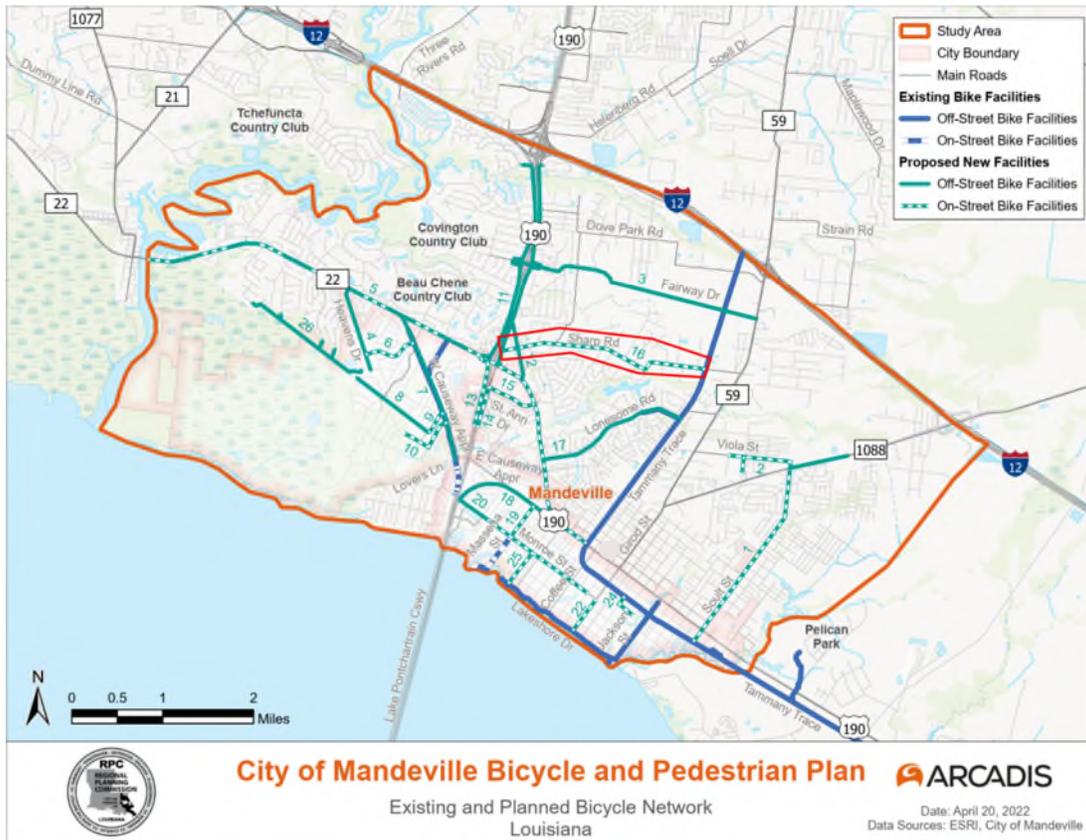


Figure 6-19: Sharp Road Location

Existing Conditions

Sharp Road is a local two-lane road with a speed limit of 35-mph and open drainage. The road does not have facilities for pedestrians and/or cyclists.

Proposed Improvements

A dedicated bike lane and sidewalks will be added to both sides of Sharp Road from Asbury Drive to the Tammany Trace. In order to accomplish this, right-of-way (~0.25 miles in length total) may need to be purchased to provide the adequate clearance. Additionally, strategically placed pedestrian and bicycle crossings will need to be placed at, or near, all neighborhood entrances and at St. Michaels Episcopal Church. It is also highly recommended that traffic calming tools like those shown in Table 8-7 be utilized to add additional safety at these crossings.

Project Reasoning/Methodology

The project will provide residential areas along Sharp Road safe access to land uses to the South, West, and North by accessing the Tammany Trace and US 190 East Service Road via the multi-use path along Asbury Drive.

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6.2.17 Lonesome Road Improvements

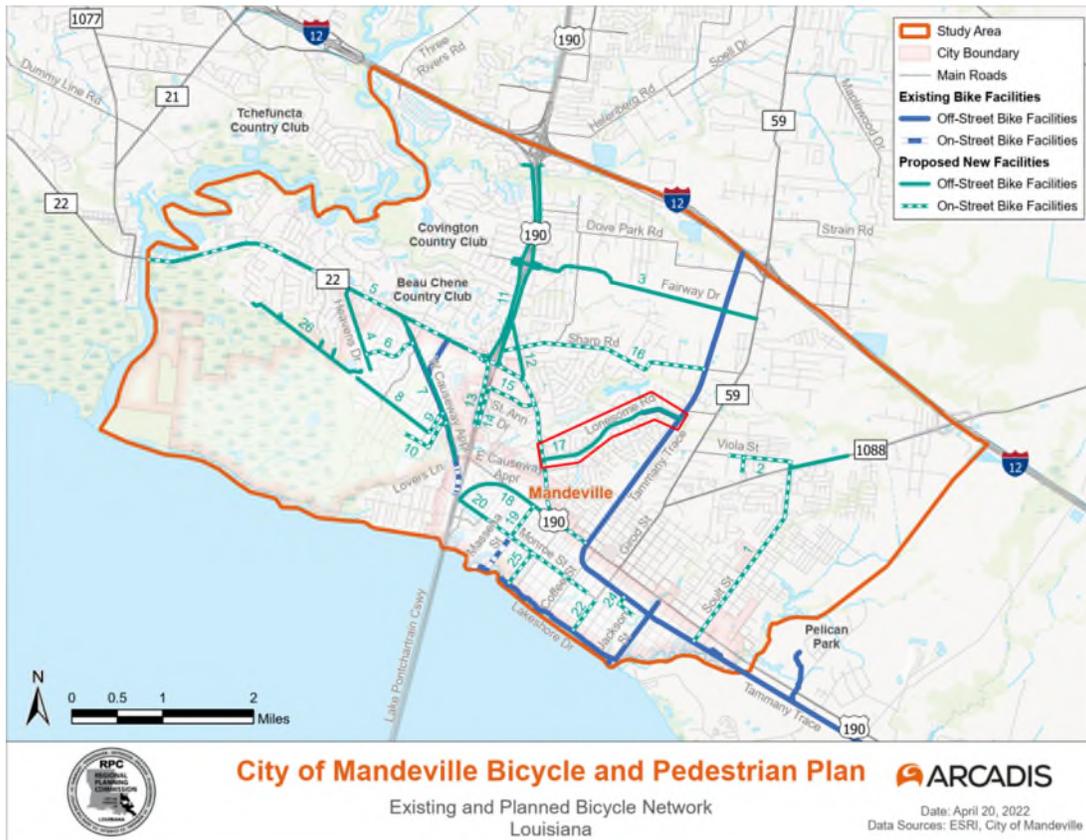


Figure 6-20: Lonesome Road Location

Existing Conditions

Lonesome Road is a local two-lane road with a speed limit of 35-mph and open drainage. The road has sidewalk facilities along the northern side of the road between Morningside Drive and Greenleaves Boulevard, and along the southern side of the road from Greenleaves Boulevard to the Tammany Trace.

Proposed Improvements

A multi-use path will also be installed along the southern edge of Lonesome Road from US 190 to the Tammany Trace. To provide additional safety and access to the proposed path, raised crossings are suggested where Lonesome Road intersects large residential neighborhoods on the northern side. These include Laurel Boulevard, Timbercreek Lane, Greenleaves Boulevard, Morningside Drive and Evergreen Drive. Additionally, if drainage is closed along the south side of Lonesome Road, bulb outs at these crossings may also be an effective traffic calming tool with additional aesthetic possibilities.

Project Reasoning/Methodology

The project will provide connectivity to the adjacent neighborhoods from the local business located along US 190 to the Tammany Trace.

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6.2.18 East Causeway Approach Improvements

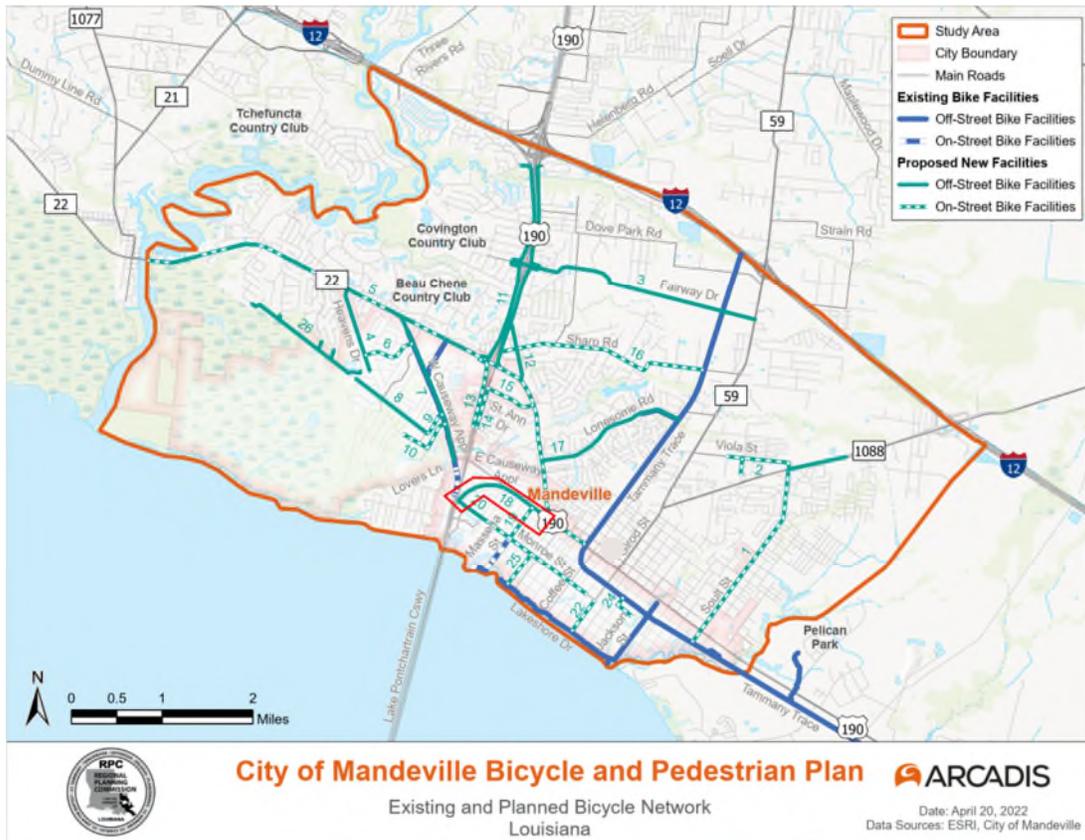


Figure 6-21: East Causeway Approach Location

Existing Conditions

East Causeway Approach is a 4-lane road divided by a grass median, with open drainage and a speed limit of 45-mph. It connects North Causeway Boulevard to US 190. The road has a wide right of way and many local destinations are located along this road, including the Mandeville City Hall. The City currently has plans in place to install a sidewalk along the south side of East Causeway Approach.

Proposed Improvements

A dedicated bike lane will be installed on both sides of the road to connect North Causeway Boulevard with US 190, providing access for the residents and visitors to local destinations. Due to the 45-mph speed limit along East Causeway Approach, the existing shoulder will be sacrificed, and additional striping will be placed between the bike lane and travel lanes. A sidewalk will also be installed on the north side of East Causeway Approach to compliment the current City project to construct a sidewalk along the south side. At minimum, signalized crosswalks will be placed at the crossings of Monroe Street, US 190, and Florida Street. However, an additional high visibility crosswalk is recommended near Lisa Lane to improve access and safety.

Project Reasoning/Methodology

The project will provide safe bicycle and pedestrian access to several local destinations and will contribute to the economic development adjacent to the road.

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6.2.19 Massena Street Improvements

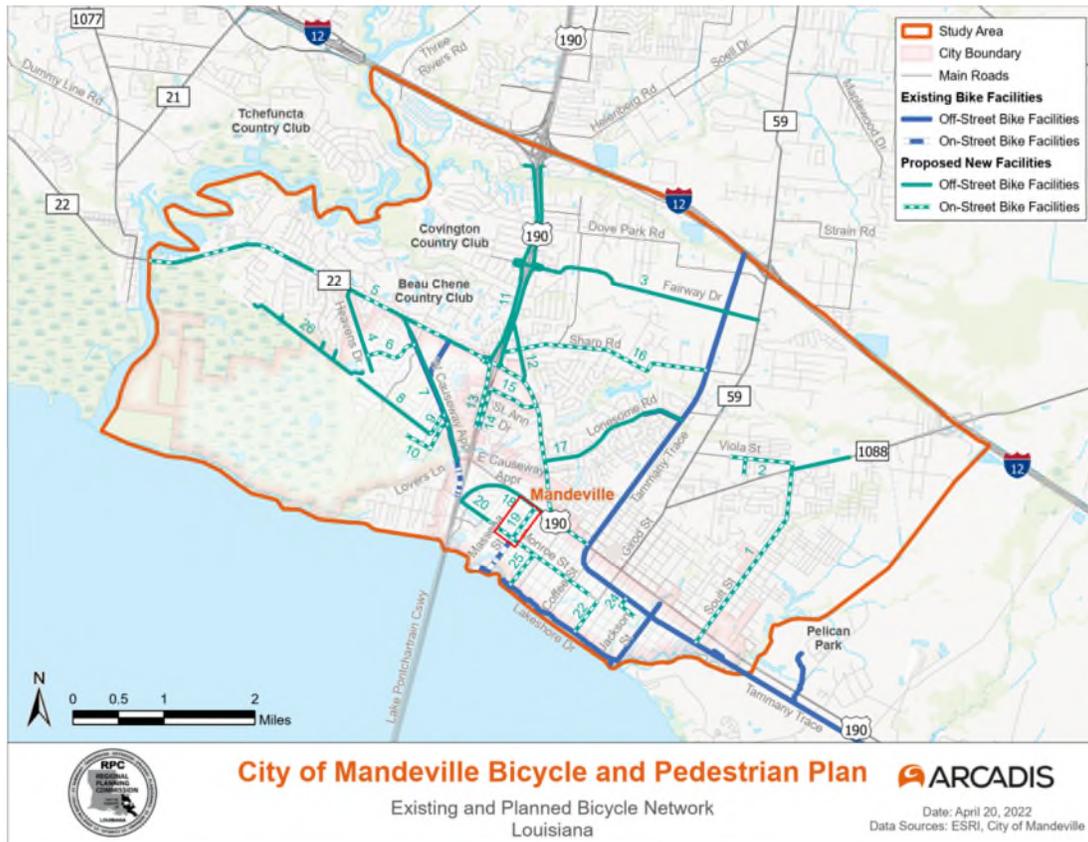


Figure 6-22: Massena Street Location

Existing Conditions

Massena Street is a local two-lane road with a speed of 25-mph and open drainage. It has bicycle shared lanes starting at Sunset Point Park and ending at the intersection with Monroe Street, as well as sidewalks on the east side of the road between Monroe Street and East Causeway Approach. Mandeville Elementary School is located between East Causeway Approach and Monroe Street.

Proposed Improvements

The project will provide improvement to the existing bicycle pavement marking and extend the route via sharrow pavement markings between Monroe Street and the intersection with East Causeway Approach.

Project Reasoning/Methodology

The project will provide connectivity between Sunset Point Park along Massena Street to the Mandeville Elementary School and the destinations along the East Causeway Approach.

6.2.20 Monroe Street Improvements

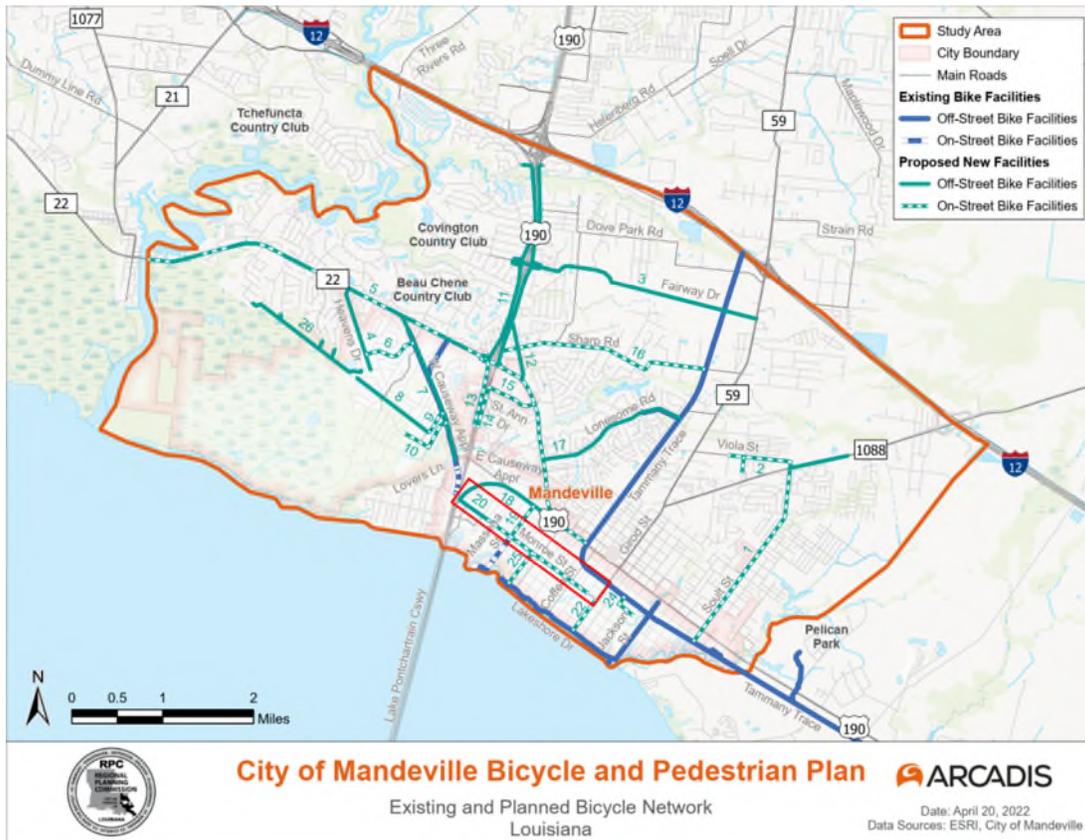


Figure 6-23: Monroe Street Improvements Location

Existing Conditions

Monroe Street is a two-lane arterial with a speed limit of 30-mph. It currently has sidewalks on the south side starting at North Causeway Boulevard, switching to the north side of the street at the intersection with Barbara Place. The crossing is currently unmarked. The sidewalk continues on the north side until the intersection at Massena Street where sidewalks are present on both sides of the street until the intersection at Park Avenue. The sidewalk remains on the north side of Monroe Street between Park Avenue and Girod Street. There are currently no dedicated bicycle facilities along Monroe Street.

Proposed Improvements

The proposed improvements along Monroe Street include renovating the existing sidewalk along the south side of the street into a multi-use path that will extend from East Causeway Approach to Barbara Place. Past this point, the eastbound lane of Monroe Street will be widened to accommodate the installation of a two-way cycle track extending to Coffee Street. Delineators between the cycle track and travel lanes are also suggested for added driver awareness and safety, but this may prove impractical due to the large number of driveways and intersections along Monroe Street. Moving east past Coffee Street, the cycle track will transition into a sharrow until terminating at Lafitte Street. Advanced signing before Coffee Street will be necessary to warn drivers and cyclists of the ending cycle track and imminent merge. A 4-way stop control and appropriate crosswalk markings will need to be installed at Coffee Street to accommodate westbound cyclists leaving the sharrow and entering the cycle track.

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Additionally, the sidewalk along the north side of Monroe Street will be extended from Barbara Place to East Causeway Approach. At the intersection of Barbara Place, installation of a raised crosswalk is suggested to give pedestrians at the end of the multi-use path safe access to the sidewalk along the north side of the street. This will also aid with traffic calming as bicycle users enter the cycle track from the multi-use path. These facilities are also suggested at Massena Street and Carondelet Street, to accommodate pedestrians traveling to and from Mandeville Elementary and Mandeville Junior High.

To improve safety conditions and connectivity at the junction of Monroe Street, E Causeway Approach, W Causeway Approach, and N Causeway Boulevard, pedestrian signal heads will be implemented for the crossing parallel to E Causeway Approach. It is also recommended that the intersection at W Causeway Approach Service Road and Monroe Street be signalized, including pedestrian signal heads and countdown timers. These improvements will significantly increase connectivity between the W Causeway Approach, the E Causeway Approach bike lanes and sidewalks, and the Monroe Street multi-use path, as well as increase user safety.

Project Reasoning/Methodology

Having dedicated bike facilities on Monroe Street will create a major east-west connector for the bicycle system in Old Mandeville. The facility will also provide access from the west side of the plan area to areas in Old Mandeville. Furthermore, the installation of raised crosswalks at strategic intersections will provide increased safety for pedestrians and bike users by acting as a traffic calming device.

6.2.21 Carroll Street and Lafitte Street Sidewalk Improvements

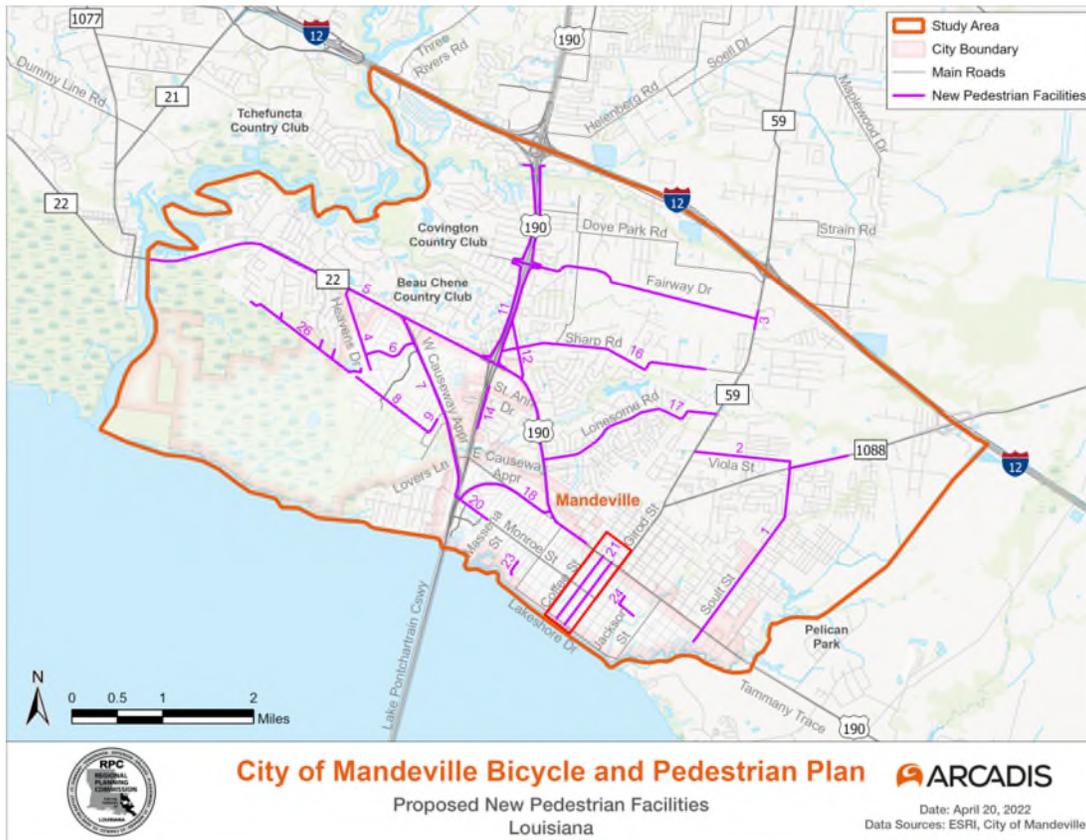


Figure 6-24: Carroll Street and Lafitte Street Sidewalk Improvement Location

Existing Conditions

Lafitte Street is a local two-lane road with a speed limit of 25-mph and closed drainage. The street has existing sidewalks from Lakeshore Drive to near US 190, however, the sidewalk alternates from one side to the other in several locations and has typical section issues in many areas. There are 2 schools (Our Lady of the Lake Elementary and the David C. Treen Technology Center) along Lafitte Street. There is a lack of connectivity with no sidewalk from US 190 to the existing sidewalk in front of Walgreens along Lafitte St.

Carroll Street is a local two-lane roadway with a speed limit of 25-mph and closed drainage. The roadway has existing sidewalks along the west side from US 190 to Tammany Trace, and from Woodrow Street to Jefferson Street. The roadway has typical section issues in many areas.

Proposed Improvements

Sidewalks will be renovated along Lafitte Street to address typical section issues, and new sidewalks will be constructed where needed along Lafitte Street and Carroll Street from Lakeshore Drive to US 190.

Project Reasoning/Methodology

Installing continuous sidewalks and addressing the typical section issues along Carroll and Lafitte Street will provide users with safe access from US 190 to Lakeshore Drive, as well as to the Tammany Trace, schools and surrounding residential areas.

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6.2.22 Girod Street Improvements

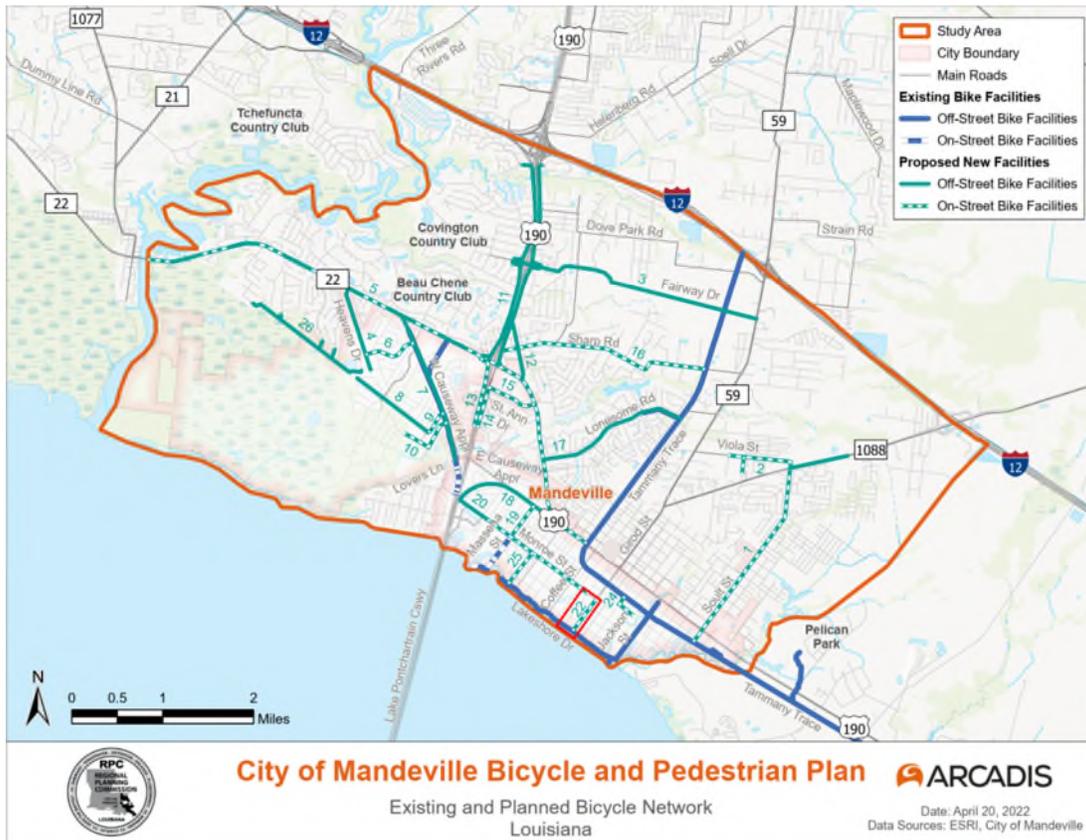


Figure 6-25: Girod Street Improvements Location

Existing Conditions

Girod Street is a local two-lane road with a 20-mph speed limit from Lakeshore Drive to Monroe Street, and a 30-mph speed limit from Monroe Street to US 190. Girod Street has closed drainage and sidewalks on both sides of the street for the entire length of the road. It is located in the Old Mandeville region and runs north and south from Lakeshore Drive to US 190. Past US 190, Girod Street becomes LA 59. Girod Street has primarily residential and commercial land uses.

Proposed Improvements

Girod Street will be transformed into a southbound one-way street from Lakeshore Drive to Monroe Street. It will be reduced to a single lane, and a two-way cycle track will be installed along the east side. Narrow streets in combination with speed bumps or tables will be implemented in order to ensure drivers maintain a safe speed while traveling near bike users. Where possible, vertical lane dividers and concrete curbs will be used to separate bicyclist from the travel lanes. Existing parking on the east side will need to be reconfigured or removed in order to safely implement the cycle track.

Project Reasoning/Methodology

Adding dedicated bike lanes along Girod Street will give users a dedicated bike route near the center of Old Mandeville that travels between Monroe Street and Lakeshore Drive. It will also provide safe bicycle access to the many restaurants, bars, short-term rentals, and other commercial land uses located along Girod Street.

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It should be noted that Girod Street is currently used as one of the main truck routes for deliveries to local businesses in the area. Therefore, it is recommended that a traffic study of the area be conducted, and alternate truck routes be identified before improvements are implemented.

6.2.23 West Street Sidewalk

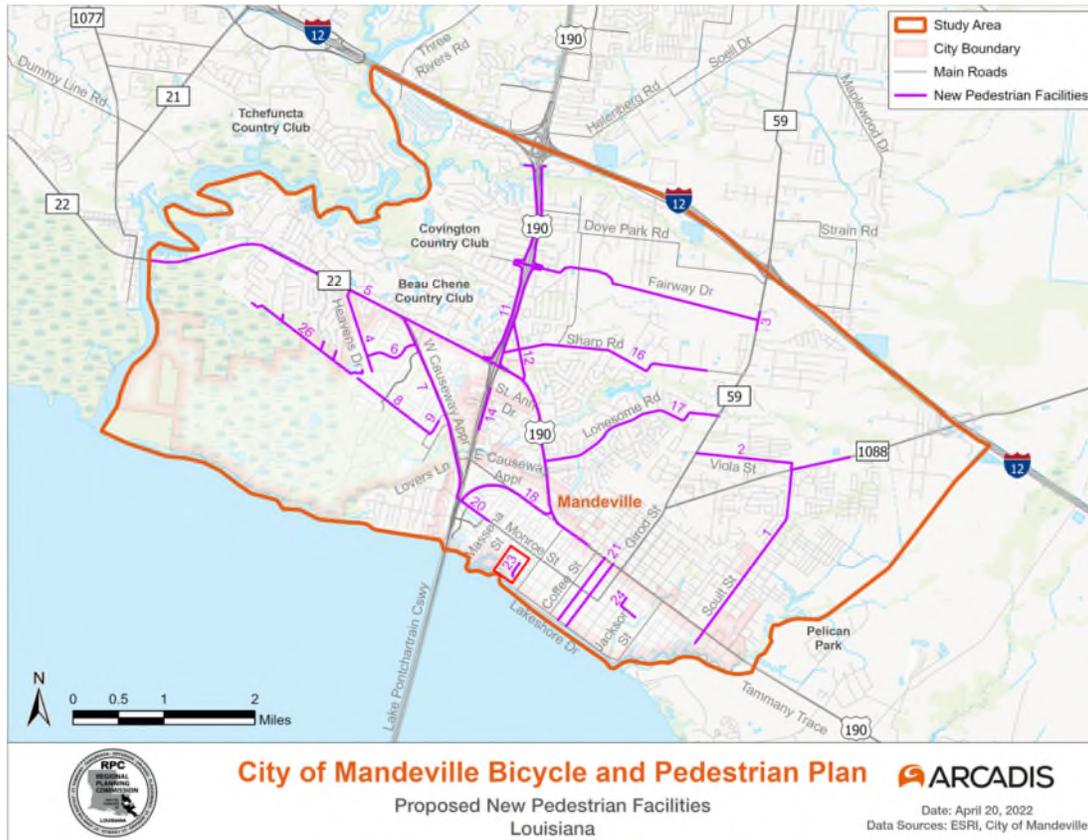


Figure 6-26: West Street Sidewalk Location

Existing Conditions

West Street is a local two-lane road with a speed limit of 25-mph and closed drainage. There are existing sidewalks from North Street to Center Street, but no connectivity between Center Street and South Street.

Proposed Improvements

New sidewalks will be constructed, connecting existing sidewalks at West Beach Parkway to the sidewalks along West Street at Center Street.

Project Reasoning/Methodology

The proposed sidewalk will provide connectivity to the residents on West Street to the sidewalk system and trails along Lakeshore Drive and West Beach Parkway.

6.2.24 Lamarque Street and Livingston Street (Woodlake Elementary School) Improvements

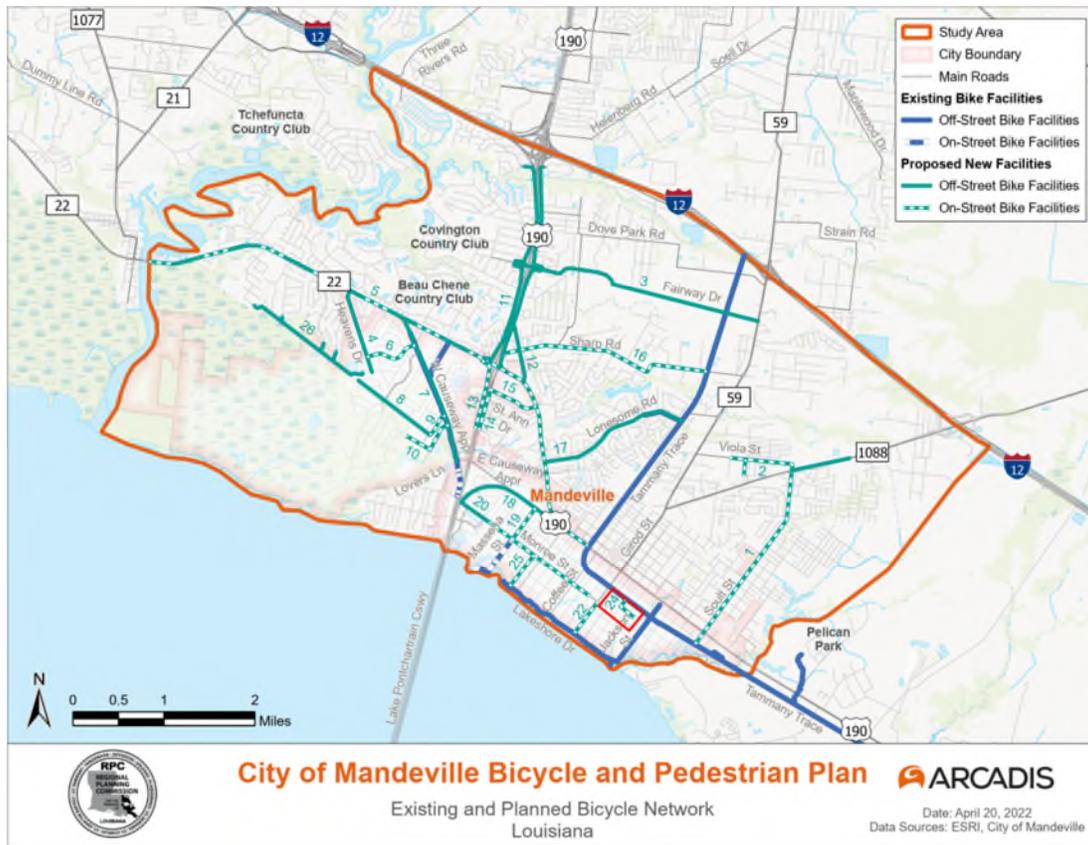


Figure 6-27: Lamarque Street and Livingston Street Sharrow and Sidewalks Location

Existing Conditions

Lamarque Street is a local two-lane road with a speed limit of 25-mph and open drainage. Livingston Street is also a local two-lane road with a speed limit of 25-mph and open drainage. There are sidewalks next to the roadway with no buffer or separation, making the sidewalk unsafe for users seeking access to Woodlake Elementary School located along Livingston Street.

Proposed Improvements

Sharrow pavement markings will be added to the existing roadway from the Tammany Trace along Lamarque Street to Livingston Street, and along Livingston Street in front of Woodlake Elementary School. Sidewalks will be constructed as well, and the existing sidewalk reconstructed to provide the proper buffer for pedestrians from the roadway. Installation of traffic calming devices (Table 8-7) such as traffic humps or bulb outs near Woodlake Elementary School is also recommended for additional safety.

Project Reasoning/Methodology

The project will provide access to the elementary school and from the Tammany Trace, as well as improve safety to the roadway along Livingston Street.

6.2.25 W Beach Parkway Sharrows

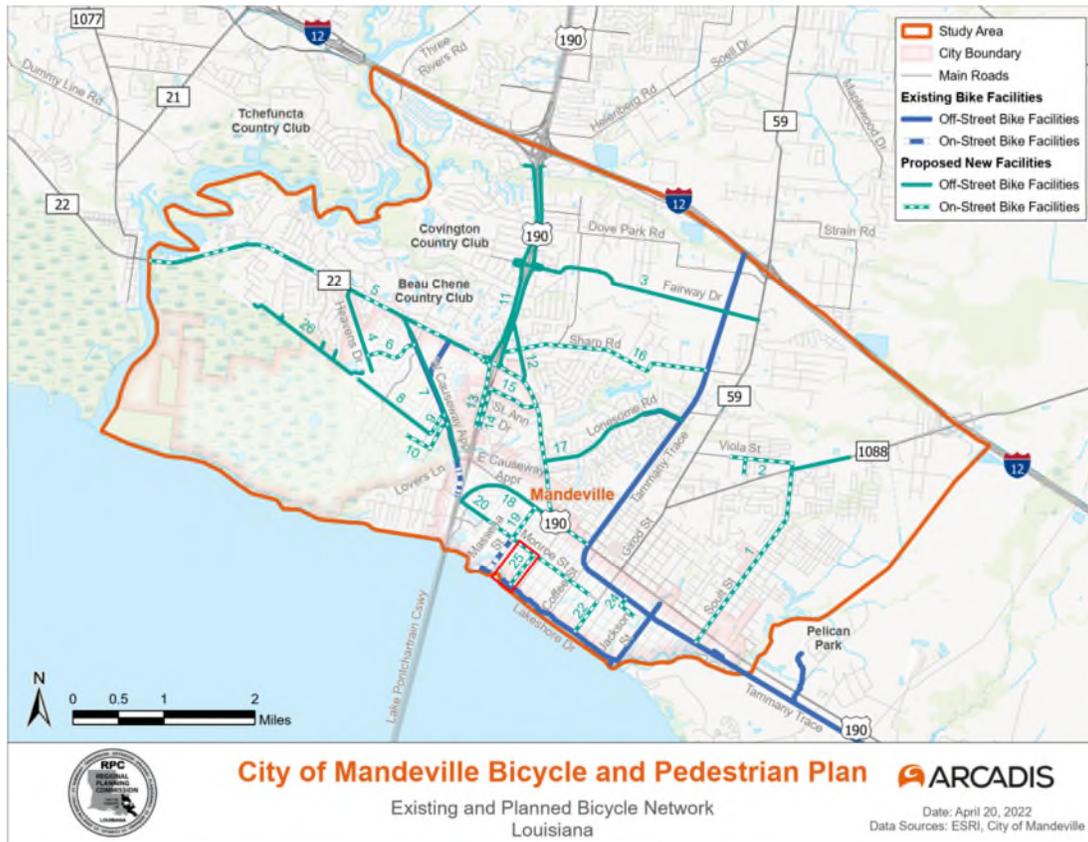


Figure 6-28: W Beach Parkway Sharrows Location

Existing Conditions

W Beach Parkway is a local two-lane divided street with closed drainage and a speed limit of 25 mph. It has sidewalks along both sides of the street.

Proposed Improvements

Sharrow markings will be added to the existing roadway from Lakeshore Drive to Monroe Street.

Project Reasoning/Methodology

The proposed sharrows will provide bicyclists with access between Monroe Street to Lakeshore Drive on the west side of Old Mandeville.

6.2.26 CLECO ROW Multi-use Path From Shady Oaks Lane to Cardinal Lane

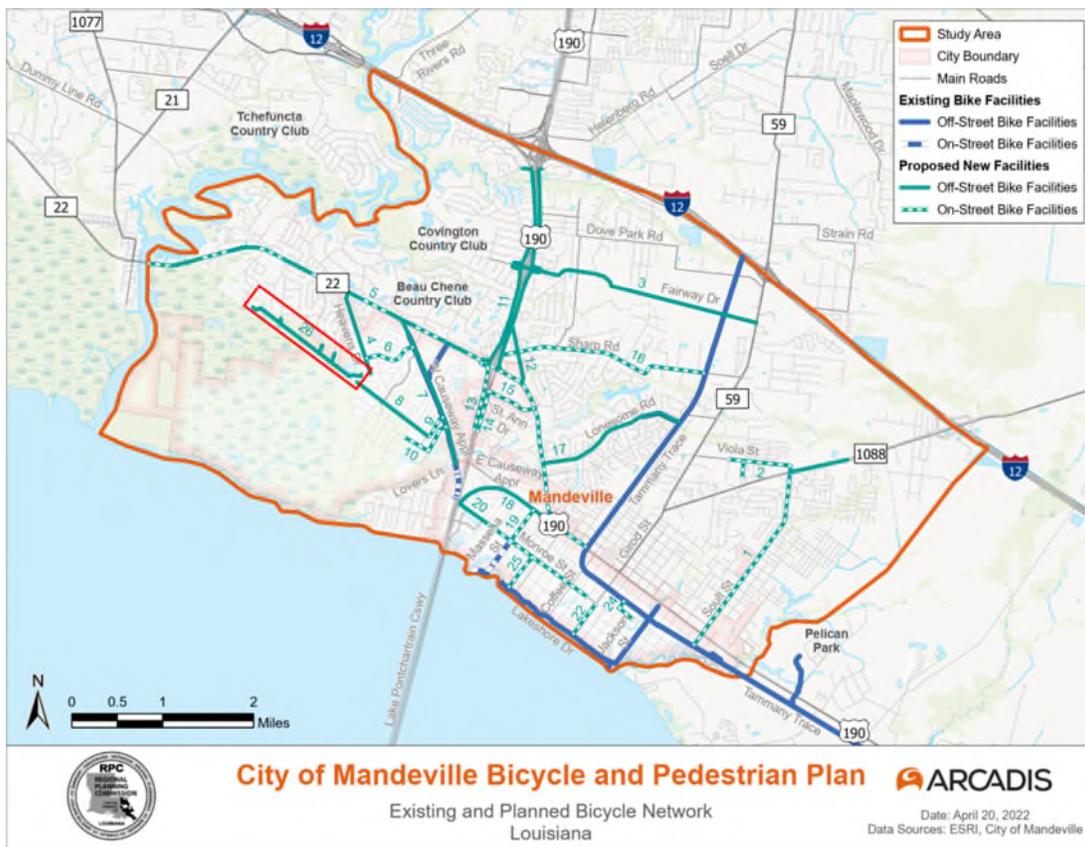


Figure 6-29: CLECO ROW Multi-Use Path Location

Existing Conditions

The CLECO ROW is a power utility company right-of-way that extends from LA 22 to Skipper Drive. The section of interest of the right-of-way passes through an undeveloped region just north of the Tchefuncte River delta.

Proposed Improvements

A multi-use path will be constructed from the dead-end at Shady Oaks Lane and terminate at Venus Drive. The path will be connected by three arterials at Scotchpine Drive, Woodridge Boulevard, and Willow Oak Lane.

Project Reasoning/Methodology

Utility rights-of-way are natural avenues for bicycle and pedestrian paths. The proposed multi-use path along the CLECO right of way runs roughly east-west providing connections at Shady Oaks Lane, Scotchpine Drive, Woodridge Boulevard, and Willow Oak Lane before terminating at Venus Drive and Tupello Trace. These connections provide safe and accessible pathways from the transportation disadvantaged areas shown in Figure 5-1 to Mandeville High School and Tchefuncte Middle. The multi-use path would also serve as a bypass for the proposed bike lane and sidewalk along LA 22 for travelers who wish to avoid a busy thoroughfare, and as an alternative exercise path and nature trail to Tammany Trace for residents on the west side of Mandeville.

7 Program of Projects Ranking Methodology

As part of the proposed plan, projects were prioritized based on several different ranking factors addressed in the plan. The ranking factors included the goals identified earlier in the plan that include Safety, Accessibility, and Connectivity. An additional ranking factor that was considered is Construction. Each ranking factor received a numeric rating. Each ranking factor is described in further detail below:

Safety – This factor looked at each project’s impact to safety. Impacts were assessed by considering the area or facility’s current condition, projected usage, projected users, and crash history. Projects providing greater vehicle and pedestrian/bicycle separation were generally rated higher than projects that do not provide as much separation, depending on the speed, type of facility, and crash history. Projects with a lower projected impact on safety received a lower rating while projects with a higher expected impact on safety were rated higher.

Accessibility – This factor looked at the socioeconomic data of the area around each project and presence of existing facilities. Priority is to provide safe walking and biking facilities to communities and areas that possess a disproportionately higher number of households without access to a motor vehicle. Figure 5-1 below shows a map of the transportation disadvantaged areas by number of households with zero motor vehicles by area, this map was consulted in rating the projects concerning accessibility. Projects that run through communities with existing access to bike and pedestrian routes received lower ratings than those that transect through communities that lack access to safe bike and pedestrian facilities.

Connectivity – This factor considered the land uses and places of interest surrounding each project, the project’s ability to connect the bike and pedestrian network to new parts of the city, and the project’s ability to connect to other existing or proposed projects within the system. Projects that provide less connectivity to the overall proposed network or less attractive land uses/places of interest received lower ratings while projects that provide more connectivity to the overall proposed network and more attractive land uses/places of interest received higher ratings. For example, a project that provided connectivity between major routes such as the Tammany Trace or LA 22/US 190 received a higher rating than a project that connected between more local facilities. Also, if a proposed project connects land use/places of interest that expected more pedestrian and bicycle activity, like a school or commercial property, that project received a higher rating than a project that connected between just two communities without many places of interest along said route.

Construction – This factor considered the ease of implementation for each project. This included the expected cost and level of effort required, impact to adjacent homes and businesses, and expected impact to existing users of the facility. Projects that are expected to be easier to implement with less impacts received higher ratings than projects that are expected to be expensive and more difficult to implement.

Each ranking factor was assigned a weight between 1 and 5 for each project, with 5 being the greatest impact or more favorable rating. These ratings were developed based on some of the existing quantitative and geospatial data discussed above but also the qualitative judgement of the consultant. These ratings were developed by the consultant and reviewed by the Project Management Committee.

Each ranking factor was also weighted based on the level of emphasis that has been discussed in previous Project Management Committee meetings and feedback. The proposed weights are as follows – Safety -5, Accessibility – 4, Construction – 3, and Connectivity – 2. This weighting ensured that projects that received higher ratings in the higher weighted categories received a higher overall project prioritization.

The ratings for each ranking factor (Safety, Accessibility, Construction, and Connectivity) were multiplied by its respective ranking factor weight and summed to create an overall numeric value for each project. The projects

were ranked in ascending order based on their overall numeric value. The project with the highest overall numeric value received a ranking of 1 with the remaining projects following, an example is shown in Table 7-1.

Table 7-1: Example Project Ranking Matrix

Project #	Project Name	Weight Factor: Project Description	Ranking Criteria				Rating	Ranking
			5	4	3	2		
		Safety	Accessibility	Construction	Connectivity			
1	Project 1	Improvements: Sidewalk on both sides and Sharrows Cost: ~\$2.3 Million Right of way to purchase: 0 sqft	3	5	4	5	57	2
2	Project 2	Improvements: Multi-use Path Cost: ~\$3 Million Right of way to purchase: 0 sqft	5	4	3	5	60	1
3	Project 3	Improvements: Bike lane and sidewalk on both sides Cost: ~\$9.1 Million Right of way to purchase: 1903 sqft	4	4	1	5	49	3

7.1 Existing Network Projects

The existing network projects as described in the Table 6-1 were ranked using the methodology described above. These projects were then split into Short-Term and Long-Term categories (Tables 7-2 and 7-3, respectively) based on severity of the deficiency, the importance of the route to the overall network, and ease of implementation. A map of the existing projects is shown in Figure 7-1.

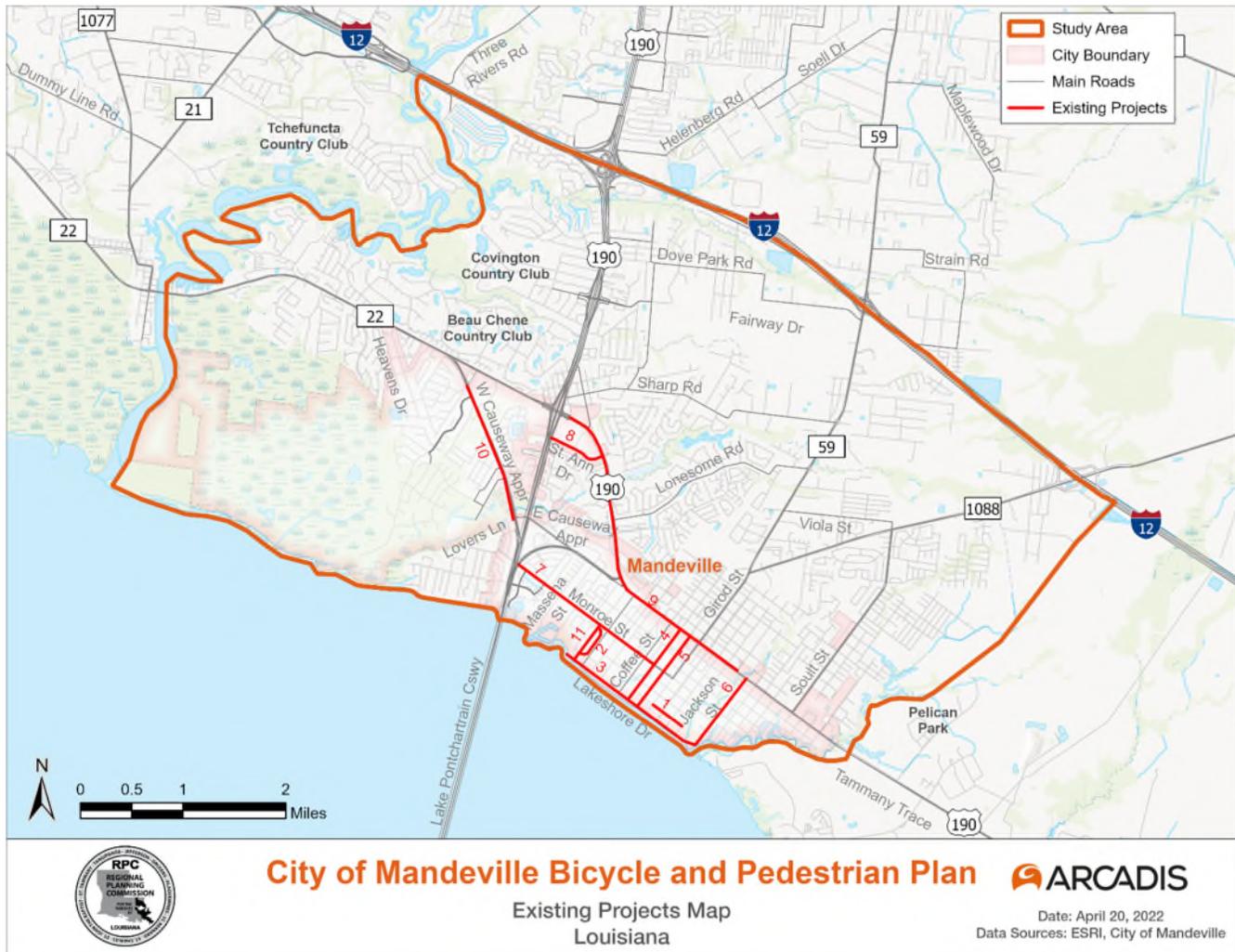


Figure 7-1: Map of Existing Projects on Existing Network

7.1.1 Short-Term Existing Network Projects Summary

Lakeshore Drive (3) ranked highest on the list of short-term projects. The multi-use path along the south side of Lakeshore Drive is a major east-to-west pedestrian and bicycle route that is in overall good condition. However, there are multiple issues that need to be addressed, as detailed in Table 7-2.

- The improvements listed in Table 7-2 will moderately increase the overall **Safety** of the path and therefore garnered a **3** in this category.
- This project was given a **5** in **Construction** as the improvements should be relatively easy to implement, and they will only affect traffic and pedestrian activity in a minor capacity.
- The sidewalks and multi-use path along Lakeshore Drive were given a **4** in **Accessibility**, but a **2** in **Connectivity**, as they provide access for a large number of users to residential and commercial areas in the Old Mandeville region, but do not provide any major new connections to the overall network.

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East Street (2) ranked just below Lakeshore Drive on the list of short-term projects. The sidewalk on the west side of East Street is in complete disrepair at the intersection of South Street and there are multiple locations on both sides where trees have displaced sidewalk panels. These deficiencies pose a considerable safety concern.

- The proposed improvements represent a major increase in the overall **Safety** of the path and were given a **5** in this category.
- This project was given a score of **3** in all other categories.
 - The sidewalk improvements will moderately increase the **Accessibility** and **Connectivity** of the overall network by providing a safe path to the facilities and land uses on Lakeshore Drive and Monroe Street.
 - **Construction** will pose a moderate challenge as the improvements will require removing trees and replacing sidewalks in a tight corridor.

The second to last ranked short-term project was **W Causeway Approach** (10).

- The deficiencies along W Causeway Approach do not pose a high **Safety** risk and was therefore given a **2** in that category.
- W Causeway Approach was given a **4** in **Accessibility** since it provides access to multiple schools, residential areas, and commercial businesses.
- **Construction** for this project was given a score of **2**, as the improvements require relocating a drainage manhole cover which may prove challenging.
- W Causeway Approach was also given a **2** in **Connectivity**. While it provides access to multiple land uses, currently it only provides minor connections to the overall network.

The short-term project that ranked at the bottom of the priority list was and **Claiborne Street** (1).

- The deficiencies along Claiborne Street do not pose a high **Safety** risk, so it was given a **1** in that category.
- Claiborne Street received a score of **1** in both **Accessibility** and **Connectivity**, as it only provides users with access to the immediate residential area and does not provide any meaningful connections to the overall network.
- **Construction** to improve the condition of the sidewalk should be a minor challenge, and therefore received a **5** in this category.

7.1.2 Long-Term Existing Network Projects Summary

All three of the top existing long-term projects scored relatively high ratings, especially in terms of potential safety improvements and importance to connectivity. The multiuse path along **Jackson Avenue** (6) was ranked as the highest priority for the long-term existing projects.

- The multi-use path was given a **5** for **Safety**, as it is in need of heavy maintenance or replacement in many locations, and the pedestrian bridge will need to be replaced entirely.
- The Jackson Avenue project was given a **4** in **Accessibility** as it is the only existing north-south pedestrian and bicycle facility in the area.
- This path was given a **5** in **Connectivity** as it is essential to the north-south connectivity in Old Mandeville and provides access to both the Tammany Trace trail and the Lakeshore Drive facilities.
- **Construction** of this project will be a considerable undertaking due to the bridge replacement and the potential need to relocate drainage and utilities currently placed in the path. However, the large offset of

the path from the road will prevent construction from significantly impacting residents and traffic, so it received a **3** in this category.

The second highest ranked long-term existing project was **Monroe Street (7)**

- Monroe Street was given a **5** in **Connectivity** as it is a major east-west pedestrian connector; however, the current facilities need to be addressed to improve safety and accessibility.
- Potential **Safety** improvements for Monroe Street were scored at a **5**. The sidewalks along Monroe Street are missing ADA compliant ramps in multiple locations, and have utilities and drainage located in the sidewalk path. There are also multiple areas where the sidewalk is cracked and uneven.
- The facilities along Monroe Street provide access to multiple schools and businesses and a large residential area, so it was given a **4** in **Accessibility**.
- The project was given a score of **2** in **Construction** since efforts to fix these issues will present a major challenge due to the large number of driveways and high traffic volume along Monroe Street.

The third ranked long-term existing project was **US 190 (9)**,

- US 190 is an extremely important east-west connector that provides access to many residents and land uses, as well as connections to a large number of pedestrian facilities. It was therefore given a **4** in both **Accessibility** and **Connectivity**.
- The existing sidewalks have multiple areas where general maintenance and safety improvements are needed (see Table 1-3). Improvement of these deficiencies would significantly increase the overall safety along US 190, garnering a score of **5** in **Safety**.
- **Construction** was given a score of **1** for this project, as implementing these improvements will be a considerable challenge due to the high ADT along US 190, and the many driveways and businesses that will be impacted by construction.

The lowest ranked long-term project is the long-term plan for the **Lakeshore Drive (3)** multi-use path.

- The current path is between 7 and 8 ft wide, which is too narrow to accommodate both pedestrians and bicyclists simultaneously. Therefore, the multi-use path will be widened to 10 ft throughout. Widening the path will make it more convenient for pedestrians and bicyclists to share the multi-use path, but will not significantly increase the overall **Safety** on this route, and was therefore given a **2** in this category.
- The multi-use path along Lakeshore Drive was scored at a **4** for **Accessibility** as it provides access for a large number of users to residential and commercial areas in Old Mandeville.
- This project was ranked at a **2** for **Construction**, as widening the multi-use path will require it to be closed off in sections during improvements, limiting accessibility to the surrounding land uses and disrupting the access of regular users.
- The multi-use path does not provide any major new connections to the overall network, so was given a **2** in **Connectivity**.

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Table 7-2: Short-Term Existing Network Projects

Project #	Project Name	Weight Factor: Project Description	Ranking Criteria				Rating	Ranking
			5 Safety	4 Accessibility	3 Construction	2 Connectivity		
3	Lakeshore Drive (Short-Term)	<p>Deficiencies:</p> <ul style="list-style-type: none"> (Lakeside Multi-use Path) Cracked and uneven multi-use path, gaps in pedestrian bridge railing (Streetside sidewalk) cracked and uneven sidewalk slabs, ramps do not meet ADA specifications, parking spot curb blocking sidewalk at Girod Street <p>Improvements:</p> <ul style="list-style-type: none"> (Lakeside Multi-use Path) Renovate Multi-use Path where needed, close in bridge railing gaps, add striping to separate bicyclists and pedestrians (Streetside sidewalk) Renovate sidewalk where needed Install ADA ramps where needed Remove perpendicular parking at Girod Street and convert to parallel parking <p>Cost: \$112,572</p>	3	4	5	2	50	1
2	East Street	<p>Deficiencies: Sidewalk in complete disrepair at corner of South and East Street, multiple cracked and uneven sidewalk slabs, trees displacing sidewalk slabs</p> <p>Improvements: Renovate sidewalks where needed, replace sidewalk near corner of South and East Street, remove trees or relocate sidewalk where necessary</p> <p>Cost: \$23,184</p>	4	3	3	3	47	2
4	Girod Street	<p>Deficiencies: Cracked and uneven sidewalk panels, cracked ADA ramps, cars parking on existing sidewalk</p> <p>Improvements: Renovate Sidewalks and replace ramps where needed, enforce parking ban on sidewalks</p> <p>Cost: \$41,436</p>	3	4	3	3	46	3
11	W Beach Pkwy	<p>Deficiencies: Cracked and uneven concrete sidewalk panels.</p> <p>Improvements: Renovate sidewalks from North St. to South St.</p> <p>Cost: \$8,064</p>	3	3	3	3	42	4
8	St Ann Drive	<p>Deficiencies:</p> <ul style="list-style-type: none"> Ramps do not meet ADA specifications at several locations. Cracked and uneven concrete sidewalk panels. Sidewalk covered by dirt, debris, or gravel. Overgrown vegetation <p>Improvements:</p> <ul style="list-style-type: none"> Install ADA ramps where needed. Renovate sidewalks where needed. Clear away dirt, debris, or gravel covering sidewalk at several locations. Clear away overgrown vegetation at several locations. <p>Cost: \$114,966</p>	2	3	4	2	38	5
5	Marigny Street	<p>Deficiencies: Cracked and uneven sidewalk panels throughout, poor ADA ramp condition at Jefferson Street and Claiborne Avenue</p> <p>Improvements: Renovate sidewalks where necessary, replace ADA ramps at Jefferson Street and Claiborne Avenue</p> <p>Cost: \$12,726</p>	2	2	5	2	37	6

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Project #	Project Name	Weight Factor: Project Description	Ranking Criteria				Rating	Ranking
			5 Safety	4 Accessibility	3 Construction	2 Connectivity		
10	W Causeway Approach	Deficiencies: • Cracked and uneven concrete sidewalk panels. • Poor pavement marking conditions. • Drainage manhole in sidewalk Improvements: • Repair cracked and sunken concrete slabs from Skipper Dr. to Mandeville High Blvd. • Remark pedestrian crosswalk at Mark Smith Dr. intersection and Mandeville High Blvd intersection. • Relocate manhole Cost: \$14,028	2	3	2	2	32	7
1	Claiborne Street	Deficiencies: Existing sidewalk slabs in poor condition Improvements: Renovate sidewalks where necessary Cost: \$1,638	1	1	5	1	26	8

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Table 7-3: Long-Term Existing Network Projects

Project #	Project Name	Weight Factor: Project Description	Ranking Criteria				Rating	Ranking
			5 Safety	4 Accessibility	3 Construction	2 Connectivity		
6	Jackson Avenue	Deficiencies: <ul style="list-style-type: none"> Cracked and uneven sections on multi-use path, raised drainage and utility access points in middle of path Existing pedestrian bridge in disrepair Improvements: <ul style="list-style-type: none"> Remove and replace multi-use path and relocate utilities Remove and replace pedestrian bridge Cost: \$836,760	5	4	3	5	60	1
7	Monroe Street	Deficiencies: <ul style="list-style-type: none"> Cracked and uneven sidewalk panels throughout Catch basins and utility pole in middle of sidewalk ADA ramps missing or in disrepair in multiple locations Improvements: <ul style="list-style-type: none"> Renovate sidewalks where needed Replace or repair ADA ramps Relocate utilities and drainage Cost: \$20,664	5	4	2	5	57	2
9	US 190	Deficiencies: <ul style="list-style-type: none"> Existing sidewalk slabs in poor condition. Poor pavement marking conditions at Greenleaves Blvd. Drainage manholes and water meters in sidewalk at several locations. Drainage is eroding under the sidewalk slab near Coffee St. intersection Ramps do not meet ADA specifications at First Baptist Church. Lacking connectivity on SB side near corner of Lafitte Street Sidewalk covered by dirt, debris, or gravel at several locations. Overgrown vegetation at several locations. Steep embankment with no railing at corner of Lafayette Street Improvements: <ul style="list-style-type: none"> Renovate sidewalks where needed. Remark pedestrian crosswalk at Greenleaves Boulevard intersection. Relocate manholes and utilities. Correct drainage erosions issues near Coffee St. intersection Install ADA ramps at First Baptist Church. Correct connectivity issue near corner of Lafitte Street Clear away dirt, debris, or gravel covering sidewalk at several locations. Clear away overgrown vegetation at several locations. Install railing at corner of Lafayette Street Cost: \$275,808	5	4	1	4	52	3
3	Lakeshore Drive (Long Term)	Deficiencies: <ul style="list-style-type: none"> Width does not meet regulation width of 10ft Improvements: <ul style="list-style-type: none"> Widen path throughout to 10ft Cost: \$244,934	2	4	2	2	36	4

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7.2 Proposed Projects

The proposed projects as described in Section 6.2 were ranked using the methodology described above. These projects were then split into Short-Term and Long-Term categories (Tables 7-4 and 7-5, respectively) based on severity of the deficiency, the importance of the route to the overall network, and ease of implementation. Maps of the proposed pedestrian and bicycle projects are shown in Figures 7-2 and 7-3, respectively.

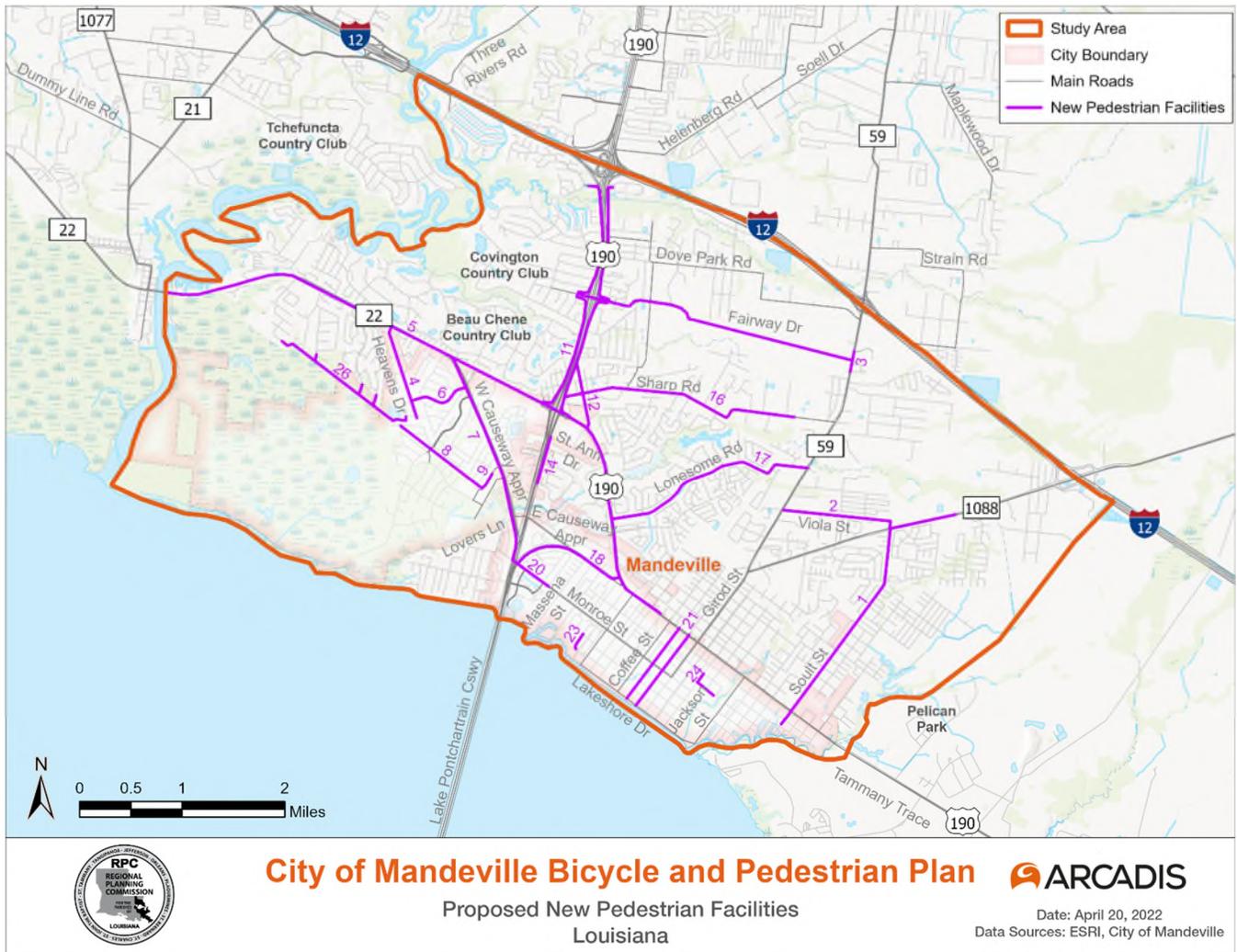


Figure 7-2: Proposed Pedestrian Projects

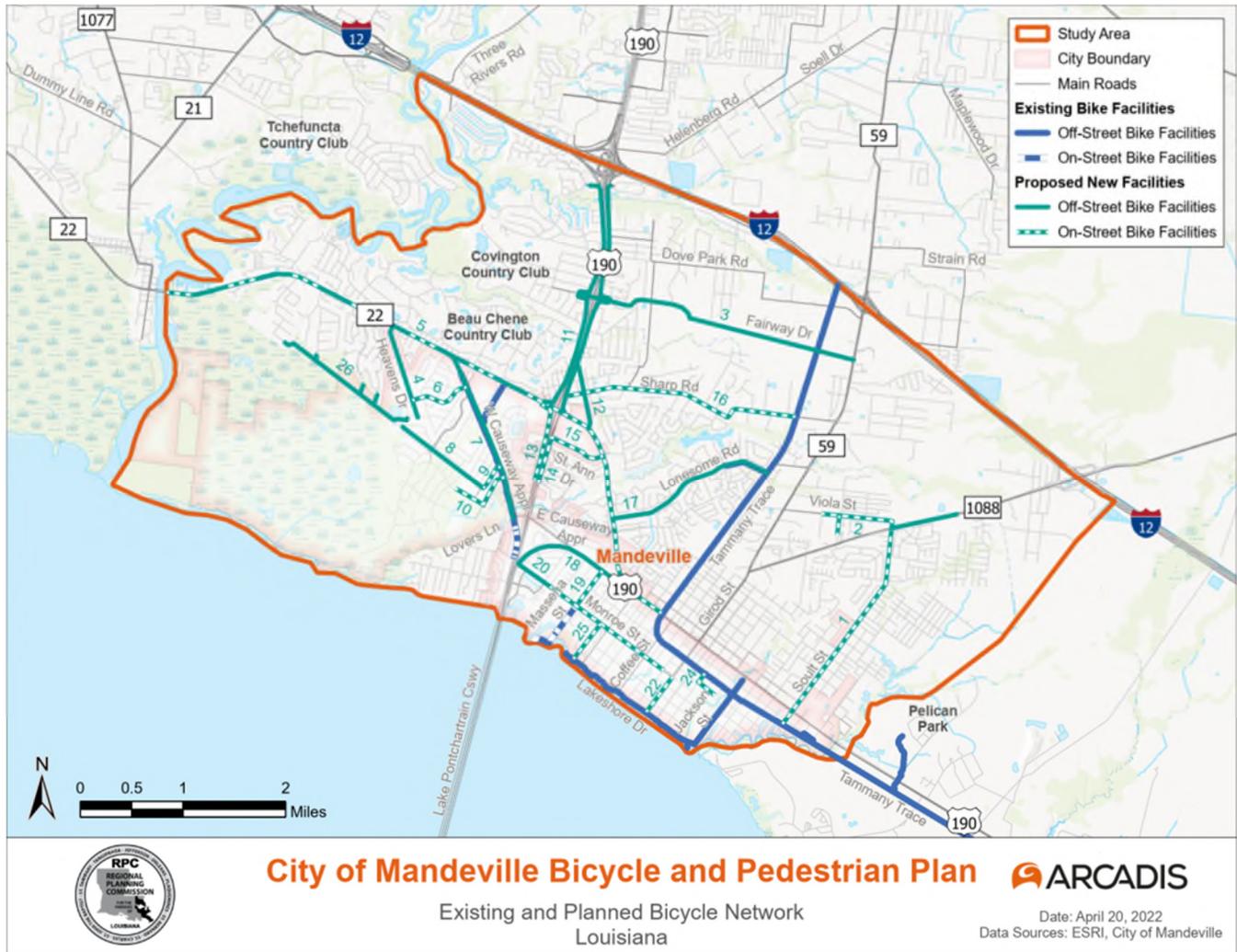


Figure 7-3: Proposed Bicycle Projects

7.2.1 Short-Term Proposed Projects Summary

The highest ranked short-term proposed project was the short-term plan for **LA 22 and US 190 (5)**.

- LA 22 and US 190 are the major east-west connectors for the proposed pedestrian and bicycle plan, and therefore scored a **5** in both **Accessibility** and **Connectivity**.
- Since there are no current bicycle facilities along LA 22, adding the proposed multi-use path would provide a dedicated path for both pedestrians and bikes from Fairview State Park to N Causeway Boulevard, thus greatly increasing **Safety** and garnering a score of **5** in that category.
- **Construction** of this multi-use path was scored at a **3**, as it will be a moderate challenge due to the high ADT along LA 22, the large number of driveways, and the need to gain a DOTD exception for a single sided multi-use path before proceeding.

The second highest ranked short term proposed project was the proposed bike lane and sidewalks for **E Causeway Approach (18)**.

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- E Causeway Approach scored a **5** in **Safety**, as there are no existing pedestrian or bike facilities. Therefore, installing the proposed bike lanes and sidewalks removes the risk of pedestrians and bicyclists being on or near travel lanes.
- Since there are no other major east-west facilities in the area, E Causeway Approach was given a **4** in **Accessibility**.
- In the short term, E Causeway Approach is essential for east-west **Connectivity** while the proposed long-term projects along Monroe Street and US 190 are being planned and constructed. In the long-term, the facilities will maintain their usefulness as they provide access to multiple grocery stores, the Ochsner Health Center, as well as City Hall. Therefore, it was given a score of **5** in this category.
- This project was given a score of **3** in **Construction**, as it will pose a moderate challenge since the proposed plan requires the installation of signalized crossings in multiple locations. However, the existing wide shoulders on E Causeway Approach can be easily converted into dedicated bike lanes by removing and replacing striping, without the need for pavement widening.

The second-to-lowest ranked short-term proposed project is the proposed sharrow along **W Beach Parkway** (25)

- W Beach Parkway scored a **2** in **Accessibility** since it will moderately improve access to the west side of Old Mandeville.
- This project also scored a **3** in **Connectivity**, as it will provide connections to the facilities along Monroe Street and Lakeshore Drive, but does not directly connect the surrounding residential areas to any new land uses.
- W Beach Parkway is a low speed, residential street with pedestrian facilities on both sides. The proposed sharrow will not improve the existing **Safety** conditions, and was therefore scored at a **1**.
- **Construction** was scored at a **5** for this project, as it only involves the installation of sharrow markings along the street.

The project that received the lowest priority ranking for short-term proposed projects was the new sidewalk installation along **West Street** (23).

- West Street is low speed, residential street with pedestrian facilities located on both sides. Since it does not pose a significant **Safety** issue to pedestrians or bicyclists, it garnered a **2** in that category.
- It received a **3** in the **Construction** category as the improvements are likely to be a moderate challenge due to restrictive space along West Street.
- The proposed improvements along West Street will only slightly impact residents in the immediate vicinity in terms of **Accessibility** and **Connectivity**, and was therefore only given a **2** in these categories.

7.2.2 Long-Term Proposed Projects

The highest ranked long-term proposed project is the **Judge Tanner Boulevard** (3) multi-use path.

- The proposed multi-use path from N Causeway Boulevard to LA 59 along Judge Tanner Boulevard was scored at a **5** for **Connectivity**, as it is a major east-west connector for the northern part of the study area, linking the proposed multi-use path along N Causeway Boulevard to the Tammany Trace trail.
- Since there are few pedestrian facilities and no bike facilities along Judge Tanner Boulevard the proposed multi-use path will remove potential users from the travel lanes, increasing **Safety** significantly and garnering a score of **5** in that category.

- The path will provide users access to both the Lakeview Regional Medical Center, Trinity Catholic Church, and both the Fontainebleau Junior High and High Schools, thus the project was given a **4** in **Accessibility**.
- Construction of the multi-use path from Trinity Catholic Church to LA 59 will require considerable clearing and grubbing of undeveloped land, and thus the project is subject to potential unknowns. Due to these factors, the project was ranked at a **3** in **Construction**.

The **CLECO ROW** (26) multi-use path was the second highest ranked long-term proposed project. It provides users in southwest Mandeville with an alternative route to LA 22 and US 190.

- This project will be a standalone facility away from any major thoroughfares and will serve as an alternative to the path along LA 22. As such it will be a much safer option for younger or inexperienced users and was given a **5** in **Safety**.
- The path was given a **4** in **Accessibility**, as it passes through the area with the lowest vehicle-to-household ratio and provides access from the neighborhoods south of LA 22 to Tchefuncte Middle School and Mandeville High School.
- The CLECO ROW multi-use path follows a utility right-of-way through otherwise undeveloped land and is subject to potential unknowns. Thus, it was given a **3** in **Construction**.
- The multi-use path was given a **5** in **Connectivity**, as it will provide connections to all the major neighborhoods south of LA 22, as well as connecting the Live Oak/CLECO and Heavens Drive multi-use paths.

The third ranked long-term proposed project was the proposed long-term improvements along **LA 22 and US 190** (5). These improvements include installing dedicated bike lanes and sidewalks along the north side of the road from Fairview State Park to the Tammany Trace trail, and along the south side of the road from N Causeway Boulevard to the Tammany Trace trail. It is assumed that the multi-use path proposed in the short-term LA 22 and US 190 improvements will already be constructed before the long-term plan begins development, therefore no bike lanes or sidewalks will need to be constructed along the south side of LA 22 from Fairview State Park to N Causeway Boulevard.

- In terms of **Connectivity**, these improvements represent the lynchpin for the entire proposed pedestrian and bicycle route system, earning a **5** in this category.
- The project was ranked at a **5** for both **Safety** and **Accessibility**, as creating dedicated bike lanes and a fully connected sidewalk system will greatly increase user safety along a dangerous route; and provide users in the areas with the highest number of transportation disadvantaged households access to the rest of the network.
- Construction of these improvements will be a considerable challenge due to the high ADT along LA 22 and US 190, the large number of driveways and businesses that will be impacted, removal and replacement of multiple traffic signals, possible right-of-way purchase, and renovation of the Bayou Chinchuba Bridge. These challenges, along with the extensive length of the project, and the need for considerable monetary investment earned this project a rank of **1** in **Construction**.

The lowest ranked long-term project was the **W Causeway Approach** (7) multi-use path.

- As there are no facilities currently on the northeast side of W Causeway Approach, the proposed multi-use path will considerably increase the safety of users seeking the land uses there. Therefore, the project was given a **4** in **Safety**.

- It was given a **4** in **Accessibility**, as it provides access to users in area with the lowest vehicle-to-household ratio and provides users to the north with access to Tchefuncte Middle School and Mandeville High School.
- The project does not provide significant new **Connectivity** to the overall network and was thus given a **2** in this category.
- **Construction** was scored at a **2** for these improvements. While the multi-use path should be relatively easy to construct, the installation of a pedestrian bridge over the bayou that runs perpendicular to W Causeway Approach will be a costly and considerable challenge.

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Table 7-4: Short-Term Proposed Projects

Project #	Project Name	Weight Factor: Project Description	Ranking Criteria				Rating	Ranking
			5 Safety	4 Accessibility	3 Construction	2 Connectivity		
5	LA 22/US 190	<p>Short Term: Deficiencies:</p> <ul style="list-style-type: none"> • LA 22 lacks continuous pedestrian facilities, no bike facilities • US 190 lacks connectivity to other pedestrian facilities, no bike facilities, many areas of sidewalk that need to be replaced due to damage, pedestrian ramps that do not meet ADA requirements <p>Improvements:</p> <ul style="list-style-type: none"> • (LA22) Close drainage where needed, remove existing sidewalk and install multiuse path (south side only) from Fairview Riverside State Park to Lovers Lane • Install high visibility pedestrian crossing at Fairview Riverside State Park • Replace signal at intersection of LA 22@W Causeway Approach to create pedestrian friendly crossing at W Causeway Approach and Lotus Drive <p>Cost: ~\$6.9 Million Right of way to purchase: 0 sqft</p>	5	5	3	5	64	1
18	E Causeway Approach	<p>Deficiencies: No existing pedestrian facilities Improvements:</p> <ul style="list-style-type: none"> • Close drainage where needed, widen road and install bike lane marking and add sidewalks on both sides • Install signalized crossings at Monroe Street, US 190, Florida Street, and a high visibility crossing at Lisa Lane <p>Cost: ~\$2.1 Million Right of way to purchase: 910 sqft</p>	5	4	3	5	60	2
2	Viola Street	<p>Deficiencies: No current pedestrian facilities Improvements:</p> <ul style="list-style-type: none"> • Close Drainage, add sidewalks (both sides) and sharrow markings • Replace existing crosswalk in front of Marigny Elementary with raised pedestrian crossing <p>Cost: ~\$2.3 Million Right of way to purchase: 0 sqft</p>	3	5	4	5	57	3
8	Live Oak/CLECO	<p>Deficiencies: No current pedestrian facilities Improvements: Install multiuse Path from Skipper Drive to Cardinal Drive along utility right of way</p> <p>Cost: \$1.25 Million Right of way to purchase: 0 sqft</p>	4	4	4	4	56	4
9	Skipper Drive	<p>Deficiencies: Lacks continuous pedestrian facilities, no bike facilities Improvements: Extend sidewalks to span from W Causeway Approach to Purple Martin Road and add sharrow markings.</p> <p>Cost: ~\$156,414 Right of way to purchase: 0 sqft</p>	5	3	4	3	55	5
24	Lamarque and Livingston	<p>Deficiencies: Typical section issues, lack of connectivity Improvements: Remove and replace sidewalks where needed to address typical section issues and add sharrow markings along Lamarque Street from Tammany Trace to Livingston Street, and along Livingston Street from Lamarque Street to Clause Street</p> <p>Cost: \$156,414 Right of way to purchase: 0 sqft</p>	5	3	4	3	55	5

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Project #	Project Name	Weight Factor: Project Description	Ranking Criteria				Rating	Ranking
			5	4	3	2		
			Safety	Accessibility	Construction	Connectivity		
1	Soult Street/ LA 1088	Deficiencies: No current pedestrian facilities Improvements: • (Soult Street) Close drainage, add sidewalks (both sides) and sharrow markings from Tammany Trace to LA 1088 • (LA 1088) Close drainage, add multi-use path along (South side) from Soult Street to Mandeville Sports Complex • Install High Visibility 4-way crossings at intersection of LA 1088 and Soult Street Cost: ~\$6.3 Million Right of way to purchase: 0 sqft	3	5	3	4	52	7
14	Elmwood Place	Deficiencies: No current pedestrian facilities Improvements: Close drainage where needed, widen road and add bike lane markings, and install sidewalks on east side from Brookside Drive to St. Ann Drive Cost: \$576,100 Right of way to purchase: 1701 sqft	5	4	1	4	52	7
15	St Ann Drive	Deficiencies: No current bike facilities, multiple areas of cracked sidewalk Improvements: Add sharrow markings from Elmwood Drive to East Causeway Approach Cost: \$15,723 Right of way to purchase: 0 sqft	1	5	5	5	50	9
13	Lovers Lane	Deficiencies: No current bike facilities Improvements: Add sharrow markings from Brookside Drive to LA 22 Cost: \$24,963 Right of way to purchase: 0 sqft	1	5	5	4	48	10
17	Lonesome Road	Deficiencies: Lacks continuous pedestrian facilities, no existing bike facilities Improvements: • Close drainage and remove existing sidewalk where needed, install multiuse path on south side from US 190 to the Tammany Trace • Install high visibility crossings at Laurel Boulevard, Timbercreek Lane, Greenleaves Boulevard, Morningside Drive and Evergreen Drive Cost: ~\$2.8 Million Right of way to purchase: 0 sqft	3	3	3	5	46	11
19	Massena Street	Deficiencies: Lack of continuous bike and pedestrian facilities Improvements: Install sharrow markings from Monroe Street to E Causeway Approach Cost: \$12,614 Right of way to purchase: 0 sqft	2	3	5	4	45	12
22	Girod Street	Deficiencies: Lack of dedicated bike facilities Improvements: • Transform into southbound one-way street from Monroe Street to Lakeshore Drive • Install two-way cycle track with vertical lane dividers • Reconfigure or remove parking along east side of the street • Install speed bumps or tables Cost: \$330,864 Right of way to purchase: 0 sqft	4	2	2	5	44	13

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Project #	Project Name	Weight Factor: Project Description	Ranking Criteria				Rating	Ranking
			5	4	3	2		
			Safety	Accessibility	Construction	Connectivity		
21	Carroll and Lafitte	Deficiencies: Lack of continuous pedestrian facilities, typical section issues Improvements: • Close drainage and remove existing sidewalks where needed, and install new sidewalks from US 190 to Lakeshore Drive Cost: ~\$2 Million Right of way to purchase: 0 sqft	5	1	1	5	42	14
6	Garden Ave	Deficiencies: No current pedestrian facilities Improvements: Add sidewalks (both sides) and sharrow markings from LA 22 to Heavens Dr. Cost: ~\$720,000 Right of way to purchase: 0 sqft	2	3	4	3	40	15
10	Mandeville/Purple Martin	Deficiencies: No bike facilities Improvements: • (Mandeville High Boulevard) Add sharrow markings from W Causeway Approach to Purple Martin Road • (Purple Martin Road) Add sharrow markings from Mandeville High Boulevard to edge of school property Cost: \$38,769 Right of way to purchase: 0 sqft	2	2	5	3	39	16
4	Heavens Drive	Deficiencies: Lack of a continuous pedestrian facilities with no bike facilities Improvements: • Close drainage where needed, install multi-use path (north-east side) from LA 22 to Dorado Drive Cost: ~\$1.4 Million Right of way to purchase: ~590 sqft	2	3	3	3	37	17
25	West Beach Parkway	Deficiencies: Lack of dedicated bike facilities Improvements: Install sharrow markings from Lakeshore Drive to Monroe Street Cost: \$15,258 Right of way to purchase: 0 sqft	1	2	5	3	34	18
23	West Street	Deficiencies: Lack of connectivity between Center and South Street Improvements: Install sidewalks on both sides from Center Street to South Street Cost: \$131,232 Right of way to purchase: 0 sqft	2	2	3	2	31	19

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Table 7-5: Long-Term Proposed Projects

Project #	Project Name	Weight Factor: Project Description	Ranking Criteria				Rating	Ranking
			5 Safety	4 Accessibility	3 Construction	2 Connectivity		
3	Judge Tanner	<p>Deficiencies: Lack of a continuous pedestrian facilities with no bike facilities</p> <p>Improvements:</p> <ul style="list-style-type: none"> • (Judge Tanner Boulevard) Close drainage where needed, install multi-use path along existing road from Willow Drive/Frontage Road • (Judge Tanner Nature Walk) Create nature walk/multi-use path from Judge Tanner Boulevard to LA 59 • (LA 59) Add sidewalk (east side) between Bulldog Drive and Hurricane Alley • Install high visibility pedestrian crossing between multi-use path and new sidewalk (near Dollar General) <p>Cost: ~\$3.1 Million Right of way to purchase: 0 sqft</p>	5	4	3	5	60	1
26	CLECO ROW Multiuse	<p>Deficiencies: N/A</p> <p>Improvements: Install multi-use path from the dead end at Shady Oaks Lane to Venus Drive, and construct arterial paths connecting to Scotchpine Drive, Woodridge Boulevard, Willow Oak Lane, and Tupello Trace</p> <p>Cost: ~\$1.1 Million Right of way to purchase: 0 sqft</p>	5	4	3	5	60	1
5	LA 22/US 190	<p>Long-Term:</p> <p>Deficiencies:</p> <ul style="list-style-type: none"> • LA 22 will lack pedestrian and bike facilities on the north side • US 190 lacks connectivity to other pedestrian facilities, no bike facilities, many areas of sidewalk that need to be replaced due to damage, pedestrian ramps that do not meet ADA requirements <p>Improvements:</p> <p>LA 22</p> <ul style="list-style-type: none"> • Close drainage where needed, widen road and install bike lane and sidewalk from Fairview Riverside State Park to N Causeway Boulevard (north side). • Add bike lane and sidewalk from Lovers Lane to N Causeway Boulevard (south side) • Install high visibility pedestrian crossing at: Bigner Road, Woodridge Boulevard, and Heavens Drive • Remove and replace existing signals (with additional pedestrian signals) at: Dalwill Drive, LaSalle Street/Frontage Road • Add Pedestrian signals (heads and countdown timers) at N Causeway Boulevard intersection <p>US 190</p> <ul style="list-style-type: none"> • Close drainage and remove existing sidewalk where needed, widen road and install bike lane and sidewalk from N Causeway Boulevard to Tammany Trace (with exception of Bayou Chinchuba Bridge) • Widen Bayou Chinchuba Bridge and convert existing sidewalk to multi-use path • Add Pedestrian signals (heads and countdown timers) at: N Causeway Boulevard, Elmwood Place/Frontage Road, and Asbury Drive • Install High Visibility Crosswalk at Lonesome Road • Remove and replace existing signals (with additional pedestrian signals) at Nicholas Lane and E Causeway Approach <p>Cost: ~\$22.3 Million Right of way to purchase: 1497 sqft</p>	5	5	1	5	58	3

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Project #	Project Name	Weight Factor: Project Description	Ranking Criteria				Rating	Ranking
			5 Safety	4 Accessibility	3 Construction	2 Connectivity		
12	Asbury Drive	<p>Deficiencies: No current pedestrian facilities Improvements:</p> <ul style="list-style-type: none"> • Close drainage where needed, install multiuse path on east side from N Causeway Boulevard to Marquette Street, then on west side from Marquette Street to Sharp Road, then on east side from Sharp Road to E Causeway Approach • Remove and replace traffic signal at Sharp Road and include pedestrian signals and timers <p>Cost: \$1.3 Million Right of way to purchase: 0 sqft</p>	5	4	2	5	57	4
20	Monroe Street	<p>Deficiencies: Lacks continuous pedestrian facilities, no bike facilities. Improvements:</p> <ul style="list-style-type: none"> • (E Causeway Approach to Barbara Place) Renovate existing sidewalk on south side into multiuse path • (Barbara Place to Coffee Street) Close drainage where needed, widen road to the south and add cycle track markings • (Coffee Street to Lafitte Street) Install sharrow markings • Install 4-way stop at Coffee Street with crossings and signage to indicate bicyclists entering the travel lane and install raised crossing at Barbara Place, Massena Street, and Carondelet Street • Install pedestrian signals and timers at E Causeway approach, and N Causeway Boulevard Service Road <p>Cost: ~\$2.6 Million Right of way to purchase: 0 sqft</p>	5	3	2	5	53	5
11	N Causeway Boulevard	<p>Deficiencies: No current pedestrian facilities Improvements:</p> <ul style="list-style-type: none"> • Close drainage where needed, install multiuse path from LA 22 to River Oaks Drive (west side) and Asbury Drive to Ponchitalowa Drive (east side) • Install crosswalks at all necessary crossings, and a High Visibility crossing at Fairway Drive • Remove and replace traffic signal at Judge Tanner Boulevard and include pedestrian signals and timers • Install pedestrian bridge on both sides across Ponchitalowa Creek <p>Cost: ~\$13.5 Million Right of way to purchase: 0 sqft</p>	4	4	1	5	49	6
16	Sharp Road	<p>Deficiencies: No current pedestrian facilities Improvements:</p> <ul style="list-style-type: none"> • Close drainage and remove existing sidewalks where needed, widen road on both sides and add bike lane markings, and add sidewalk on both sides from Asbury Drive to the Tammany Trace • Install high visibility crossings at St Michael's Episcopal Church, Century Oaks Lane, Reiner Road, and Lochmere Drive <p>Cost: ~\$9.1 Million Right of way to purchase: 1903 sqft</p>	4	4	1	5	49	6
7	W Causeway Approach	<p>Deficiencies: Lacks facilities on the east side Improvements:</p> <ul style="list-style-type: none"> • Close drainage where needed, install multiuse path from LA 22 to N Causeway Approach • Install pedestrian bridge over bayou on W Causeway Approach <p>Cost: ~\$4.1 Million Right of way to purchase: 0 sqft</p>	4	4	2	2	46	8

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7.3 Potential Funding Sources

For the listed projects to be implemented over the life of this plan, additional funding sources will likely be needed, and some projects may require a combination of funding sources to be implemented depending upon specific regulations. The projects have been prioritized as funding becomes available.

The following list includes the potential funding sources that should be considered during the planning phase when seeking to implement the proposed projects:

- **Safe Streets and Roads for All Grant Program:** A federally funded program established in the Infrastructure Investment and Jobs Act (IIJA) that supports the development of bicycle and pedestrian networks, installation of pedestrian safety enhancements, as well as the creation of safe routes to school and public transit services through multiple activities that lead to people safely walking, biking, and rolling in underserved communities. This grant program has two parts- *Action Plan* and *Implementation*. For the purposes of this analysis, the City of Mandeville should only apply for the *Implementation* portion of the grant.
- **Transportation Alternatives Program (TAP):** This program provides funding for a variety of small-scale transportation projects such as on- and off-street pedestrian and bicycle facilities, trails, safe routes to school projects, vulnerable road user safety assessments, and projects for planning, designing, or constructing boulevards. It also provides funding for other roadway improvements, including the construction of turnouts, overlooks, and viewing areas, as well as historic preservation and vegetation management, environmental mitigation related to stormwater, and habitat connectivity.
- **The Surface Transportation Block Grant program (STBG):** This block grant provides flexible funding that can be used by States and localities for projects to improve the conditions and performance of any Federal-aid highway, bridge, and tunnel projects on any public road, pedestrian, and bicycle infrastructure, and transit capital projects.
- **The Recreational Trails Program (RPT):** A federally funded program administered by the Louisiana Office of State Parks. The program supports the construction and maintenance of any trail that provides recreation (hiking, running, wheelchair use, bicycling, and other non-motorized vehicle use).
- **The Land and Water Conservation Fund (LWCF):** A federally-funded program controlled by the Department of the Interior in consultation with the National Park Service. It supports a variety of outdoor recreation projects, ranging from playgrounds to ball fields to walking trails, including bicycle and pedestrian recreational facilities, structural design, engineering, pedestrian bridges, and boardwalks.
- **Safe Routes to Public Places Programs and Highway Safety Improvement Program (HSIP):** Are LADOTD programs that provide funding for the development and implementation of projects that improve safety for pedestrians, bicyclists, and transit users of all ages and abilities on all public roads, including non-state-owned roads.
- **The Local Road Safety Program (LRSP):** This program provides an opportunity for local governments to use federal-aid funds by identifying, analyzing, and prioritizing roadway 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.
- **Louisiana Highway Safety Commission (LHSC) Traffic Safety Grant:** A federally funded program administered by LHSC, which address specific traffic safety priority areas that include: Impaired Driving, Distracted Driving, Police Traffic Services, Speed and Aggressive Driving, Occupant Protection, Child Passenger Safety, Pedestrian and Bicycle Safety, Motorcycle Safety, Traffic Records, and Community

Traffic Safety. Grants may be awarded for assisting the LHSC in addressing traffic safety problems, expansion of an ongoing activity, or development of a new program or countermeasure.

- **City of Mandeville General Funds:** The City of Mandeville allocates funding every fiscal year for the improvement of infrastructure that is part of the Capital Roadway Program. Infrastructure improvements that qualify for funding are: drainage systems, city-wide ditch digging, culvert replacement, milling, and asphalt overlay, concrete panel replacement, improvements to sidewalks, and curbing/aesthetic improvements throughout the city.
- **Donations and Partnerships with commercial stakeholders:** Funding may also be provided by working with different commercial stakeholders in order to provide financial support for upgrades to existing bicycle and pedestrian networks.

8 Complete Streets and Design Recommendations

8.1 Intent and Background

Complete Streets is an approach to planning, designing, building, operating, and maintaining streets that enables safe access for all people who use them, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. It is a transportation policy that brings improved traffic safety and more desirable conditions for walking and bicycling. In total, over 1,600 Complete Streets policies have been passed in the United States across all levels of government.

The City of Mandeville is committed to creating a well-connected, multimodal transportation system and improving pedestrian and bicycle safety and accessibility by establishing this Bicycle and Pedestrian Plan together with a Complete Streets Policy. The benefits of Complete Streets are many, including safer streets for all people, more walking and biking opportunities, better connectivity between neighborhoods, more awareness around pedestrians and bicyclists, and support for local land uses, economies, and natural environments.

The following goals were developed for the Complete Streets Policy:

- Support a safe and well-connected bicycle and pedestrian network that serves users of all abilities and all modes of transportation.
- Support pedestrian- and bicycle-friendly environments in order to promote existing businesses and help attract new residents, businesses, and visitors.
- Improve transportation equity to provide access to all people, emphasizing safe walking and biking access for traditionally disadvantaged communities and for people who rely on walking and biking as a primary mode of transportation.

The Mandeville Bicycle and Pedestrian Plan identifies and recommends infrastructure improvements, while the Complete Streets Policy is a document that supports and guides planners and officials in decision making. For the draft City of Mandeville Complete Streets Policy, see Appendix G.

8.2 Model Complete Street Policies

The following existing Complete Street Policies listed in Table 8-1 provide examples of frameworks for policies and ordinances in Mandeville. All example policies can be found in Appendix G.

Table 8-1. Example Complete Streets Policies and Ordinances

Example Policy	Summary	Enacted Through
Louisiana Department of Transportation and Development Complete Streets Policy	The Policy “ensures a fully integrated transportation system, by planning, funding, designing, constructing, managing, and maintaining a complete and multi-modal network that achieves and sustains mobility, while encouraging and safely accommodating pedestrians, bicyclists, and transit users.” The policy is intended to help guide local municipalities and MPOs to develop and adopt their own Complete Streets Policies.	Complete Streets EDSM Louisiana State Legislation LADOTD Minimum Design Guidelines
City of New Orleans Complete Streets Policy and Program	The City of New Orleans Complete Streets Ordinance includes laws and regulations under 3 specific categories: Paving, Streets in Subdivisions, and Driveways and Sidewalks	Policy Memorandum No. 134 (R) Ordinance No. 24,706 M.C.S. of the City Code Section 146-36
East Baton Rouge Parish Complete Streets Policy	The EBR Parish Complete Streets Policy aims to improve travel times on Parish Roadways, improve mobility for all users, improve safety for drivers as well as people walking and bicycling, improve access to public transportation, improve and provide additional safe routes for children heading to school, and improve access to employment and educational opportunities.	Resolution No. 51196
Covington Complete Streets Policy	“The Complete Streets Policy is structured in manner that reflects the City of Covington’s existing Code of Ordinances. This creates a potential to streamline implementation of the policy as it applies to specific, varying types of development.” The City of Covington Complete Streets Plan includes sample ordinances under 3 specific categories: Subdivisions, Private Developments, and Public Rights of Way.	Resolution No. 2018-26
City of Rochester Complete Streets Policy	The Complete Streets Policy is an amendment to the City of Rochester Municipal Code that requires the inclusion of bicycle, pedestrian, and transit facilities in all street construction, reconstruction, rehabilitation, and pavement maintenance projects conducted by or on behalf of the City.	Ordinance No. 2011-356
North Carolina Department of Transportation Complete Streets Policy	The North Carolina Department of Transportation (NCDOT) Complete Streets Policy is a set of guidelines that create a comprehensive protocol for the development of transportation networks that encourage non-vehicular travel without compromising the safety, efficiency, or function of the facility. Its purpose is to guide decision making and design processes to ensure that all users are included during all phases of roadway development and maintenance.	North Carolina Complete Streets Policy (2019) North Carolina Department of Transportation Complete Streets Implementation Guide (2022)

8.3 Applicability and Implementation

The Complete Streets Policy applies to projects and regulations in the City of Mandeville including planning, land use, subdivision regulation, construction, reconstruction, and maintenance of trails, multi-use paths, bicycle lanes, sidewalks, streets/roadways, and other transportation facilities. Implementing the policies will provide officials and authorities with a legal framework to develop programs that require considerations for all modes of transportation.

8.4 Complete Streets Policy Recommendations

8.4.1 Land-use Planning Policies

Land-use planning policies that promote active transportation within developments are included here. Suggested policies include but are not limited to:

- Existing local street connectivity and circulation can be improved by adding sidewalks and multi-use paths to connect dead-end streets and cul-de-sacs to other parts of the existing network.
- Encourage government institutions and the private sector to create safe public spaces that can be used for social and commercial activities. An integrated space used to balance the needs of pedestrians, and bicyclists, where motor vehicles must travel at low speed.

8.4.2 Subdivision Recommendations

Subdivision regulations promote network connectivity for active transportation modes. Suggested policies include but are not limited to:

- Connections near schools should provide increased separation of walking and biking facilities appropriate for younger users.
- Residential areas should support walking and biking to provide access to main commercial corridors and other important facilities.
- New facilities should provide connections to fill gaps along the existing network.

8.4.3 Traffic Safety Program

Ways to improve traffic safety can include street design, network connectivity, land-use, and access management improvements. It is recommended to develop programs focused on:

- Active presence of law enforcement authorities
- Increase the visibility on roadways, including visibility of vulnerable roadway users
- Improve safety in road design with traffic calming measures such as signage, pavement markings, speed bumps, rumble strips, and guardrails to passively enforce vehicles speeds/improve safety
- Active monitoring of crash rates throughout the city, including consideration of potential changes to prevent future crashes
- Incorporation of safety brochures and safety programs to educate the residents of Mandeville on best roadway practices for drivers, pedestrians, and bicyclists

8.4.4 Parking Management Recommendations

This Policy is established to provide a set of strategies to make more effective use of the current and planned parking resources in the area. The design and management of parking resources affect the livability and walkability of any urbanized area. A recent study by the University of California Los Angeles and the University of California Santa Cruz indicates that building additional parking without managing the existing infrastructure can induce driving and increase the demand for even more parking[†]. Therefore, managing the existing parking resources and providing infrastructure that supports travel alternatives can be a cost-effective way to reduce demand and increase the attractiveness of underutilized parking. These recommendations should be considered:

- Encourage shared parking agreements between nearby properties
- Encourage neighboring property owners to provide inter-parcel connectivity between the properties
- Encourage the use of alternative modes of transportation to reduce parking demand, especially in the Old Mandeville area
- Provide visible and easy to access bicycle parking in the downtown area
- Provide clear signs and maps showing cyclists and motorists parking locations
- Regulate the most convenient parking spaces to favor higher priority uses, including enforcing handicap parking

[†] Millard-Ball, A., West, J., Rezaei, N., & Desai, G. (2022). What do residential lotteries show us about transportation choices? *Urban Studies*, 59(2), 434–452. <https://doi.org/10.1177/0042098021995139>

8.4.5 Micro-mobility Management

Micro-mobility is defined as small, low-speed, human or electric-powered transportation devices, including bicycles, scooters, electric-assist bicycles, electric scooters, and other small, lightweight, wheeled devices. These devices are designed to operate at a low-speed (typically less than 30 miles per hour) and have a small size (typically less than 500 pounds and less than 3 feet wide).

It is recommended to incorporate shared micro-mobility devices in the city to provide residents and visitors with more options for short trips and to reduce congestion. Regulation of where these devices are allowed will be important as speed differentials between pedestrians and these devices could provide unsafe conditions. Figure 8-1 shows an example of micro-mobility devices.



Figure 8-1: Micro-mobility Devices (Source: Wikipedia)

8.4.6 Tree Planting Program

The city should implement a tree planting program that provides an easy, affordable, and sustainable way to positively improve the environment, as well as contribute to the beautification of the city and improve air quality. Planting opportunities will exist along dedicated multi-use paths that are separated from the roadway. Planting opportunities should be explored along existing and new roadways where proper clearances allow.

8.4.7 ADA Compliance and Accessibility

The Americans with Disabilities Act (ADA) is a federal civil rights law that prohibits discrimination against people with disabilities. The ADA prohibits discrimination based on disability just as other civil rights laws prohibit discrimination on the basis of race, color, sex, national origin, age, and religion. The ADA guarantees that people with disabilities have the same opportunities as the non-disabled population to enjoy employment opportunities, purchase goods and services, and participate in state and local government programs.

The ADA applies to places of public accommodation, commercial facilities, and state and local government facilities in new construction, alterations, and additions. All new development, reconstruction, and activities of maintenance in the city must follow the Americans with Disabilities Act. Some of the regulations include but are not limited to:

- Reconstruction of existing pedestrian crossings complying with the ADA design standards per Title II.
- Installation of curb ramps at all pedestrian crossings on the sidewalks. A curb ramp is a short ramp cutting through a curb or built up to it. It provides an accessible route that people with disabilities can use to safely transition from a roadway to a sidewalk. The most common type of curb ramp is made up of the following parts: (1) the ramp, which is the sloped section that people who use wheelchairs travel up and down when transitioning between the street and the sidewalk, (2) the transitions from the ramp to the sidewalk and from the gutter to the street, which are located at the top and bottom of the ramp run, (3) flared sides, which bring the curb itself to the level of the street, and (4) the gutter, which is the roadway surface immediately next to the curb ramp that runs along the curb. Figure 8-2 shows a diagram of an ADA ramp, Figure 8-3 shows an ADA ramp in use.
- Ensure all sidewalk ramps are equipped with detectable warnings, which consist of a series of small domes that contrast in color with the surrounding sidewalk or street. They must be integrated into the walking surface, and there are specific measurements for the size and spacing of the domes. Detectable warnings are intended to function like stop signs for pedestrians who are vision impaired.

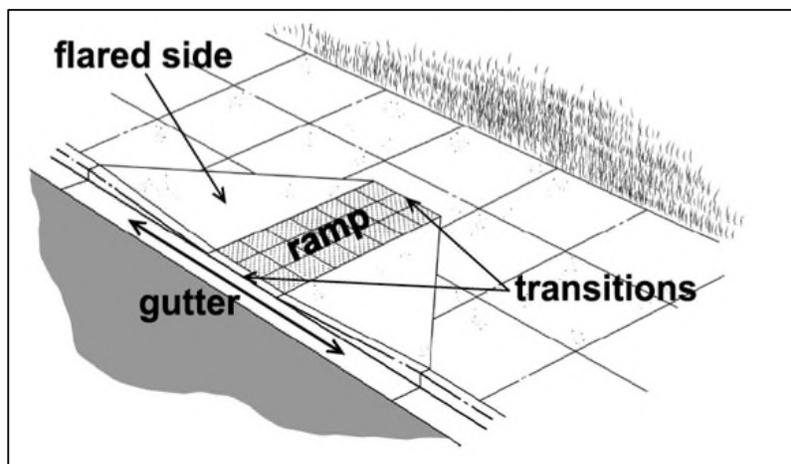


Figure 8-2: ADA Ramp Features (Source: ADA.gov)



Figure 8-3: ADA Compliant Ramp (Source: nycpedramps)

8.4.8 Traffic Markings and Signage

Roadway pavement markings and signage are critical to supporting existing and new facilities because they notify road users of the presence of pedestrians and bicyclists. Dedicated bike signage and striping should be installed on all dedicated system routes. Examples of signs and pavement markings are shown in Figure 8-4; however, the latest edition of the Manual on Uniform of Traffic Control Devices (MUTCD) should be consulted before installation of any pavement markings or signage.



Figure 8-4: Bicycle Pavement Marking and Signage (Source: 2009 MUTCD)

As the pedestrian and bicycle system outlined in this document becomes more connected, the addition of wayfinding signs should be considered. Wayfinding signs lead users to desired and popular destinations. If installed, wayfinding signs should match the latest standards of the MUTCD. An example of bicycle wayfinding signage is shown in Figure 8-5.



Figure 8-5: Bicycle Wayfinding Sign (Source: 2009 MUTCD)

8.4.9 Sidewalks Safety Improvements

There are a variety of sidewalk improvements that can create a safer and more comfortable experience for pedestrians and bicyclists. Sidewalk improvements should address the following key characteristics:

- Proper sight distance for pedestrians, bicyclists, and drivers
- Legibility of signage, signals, and road markings to ensure clear direction for all users
- Separation from motorized traffic
- Lighting to facilitate visibility and legibility

Sidewalks are recommended on all types of roadways where pedestrian activity is likely and may serve short distance travel between residential and commercial areas. Sidewalks are desirable to support pedestrian safety and comfort in areas with a mix of land uses and in areas where the roadway network connections have generally high traffic volumes or speeds.

It is recommended to connect sidewalks to other existing sidewalks, intersections, transit stops, and /or destinations to avoid gaps in the network. Sidewalks should be incorporated into the design of all roadways and intersections.

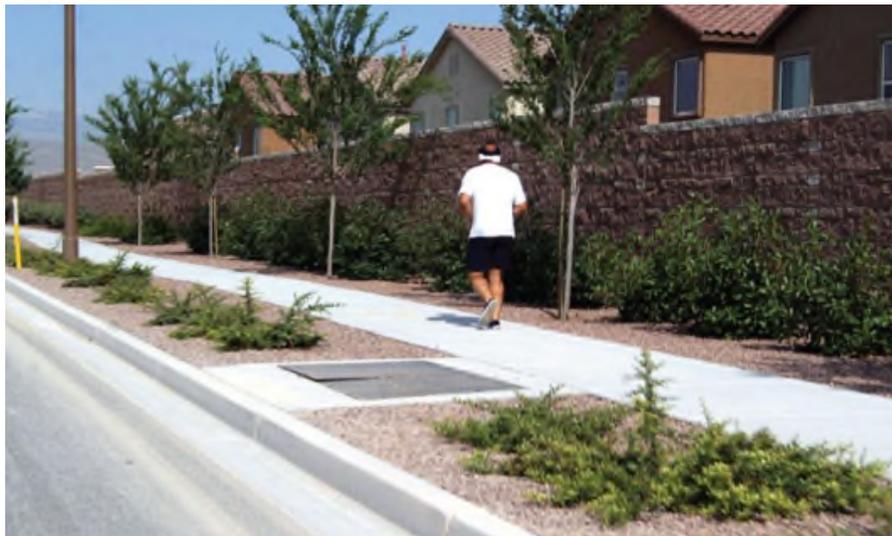


Figure 8-6: Sidewalk with Buffer (Source: pedbikeimages.org)

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8.4.10 Midblock Crosswalk Visibility and Improvements

There are a variety of intersection improvements that can create a safer and more comfortable experience for pedestrians and bicyclists. Intersection and crosswalk improvements should address the following key characteristics:

- Proper sight distance for pedestrians, bicyclists, and drivers
- Legibility of signage, signals, and road markings to ensure clear direction for all users
- Low speeds through intersections, especially where pedestrians and bicyclists' cluster
- Lighting to facilitate visibility and legibility

Pedestrian crossings can be located at an intersection, mid-block, bus stops, parks, plazas, monuments, or public building entrances.

High-visibility ladder and zebra markings are preferable to parallel or dashed pavement markings. These are more visible to approaching vehicles and have been shown to improve yielding behavior by drivers. Pavement marking crossings should meet the requirements of the latest MUTCD and should follow the standards of the Louisiana Department of Transportation and Development (LADOTD) if applied on state routes. The crosswalk should be striped as wide or wider than the walkway it connects to.

All midblock crossings should have proper advanced warning signage as stated in the MUTCD. Table 8-2 discusses the three different signage applications to consider at all midblock crossing locations. Table 8-3 provides more clarification on when to apply these applications according to the Federal Highway Administration.

Table 8-2. Crosswalk Alternatives

Device	Description	Typical Application	Example
<p>HAWK (High-Intensity Activated Crosswalk)</p>	<p>A HAWK signal is a device used to aid pedestrians in crossing a street by stopping vehicular traffic via signal indication. When the device is activated by a pedestrian, a HAWK Signal will prompt the traffic signal to turn to red, stopping vehicular traffic and allowing the pedestrian to safely cross the roadway.</p>	<p>HAWK signals should be installed where engineering judgement is determined (refer to MUTCD Section 4F), typically at locations with heavy vehicular traffic that prevents pedestrians from safely crossing on their own.</p>	
<p>Crosswalk Warning Signs with Lights</p>	<p>A Crosswalk Warning Sign with Lights is a typical Crosswalk Warning sign with yellow flashing beacons attached to the sign. They are typically installed on the side of the roadway but can be mounted overhead if needed. The lights do not change color and may be steady or user activated.</p>	<p>A Crosswalk Warning Sign with Lights is typically installed on high volume roadways with 35 mph or lower speeds and adequate gaps in vehicular traffic for pedestrians to cross the roadway.</p>	
<p>Rectangular Rapid-Flashing Beacons (RRFB)</p>	<p>Rectangular rapid flash beacons (RRFB) consist of rectangular shaped amber light emitting diodes (LEDs) installed below pedestrian warning signs. The lights are user activated and flash in an irregular flash pattern that is similar to emergency flashers on emergency vehicles.</p>	<p>RRFB is a traffic control device designed to increase driver awareness of pedestrians crossing roadways at marked midblock crossings or uncontrolled intersections.</p>	

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Crosswalk Warning Signs

Crosswalk Warning Signs are placed in advance of and at a crosswalk to warn drivers of the upcoming crossing. The location and spacing of the signs are determined by the MUTCD Table 2C-4.

A Crosswalk Warning Sign is typically installed on roadways with lower speeds and where adequate gaps in vehicular traffic exist for pedestrians to cross the roadway. They are to be installed in all crossing locations whether they possess flashing beacons or not.



Table 8-3. Crossing Application Recommendations (Source: FHWA)

Roadway Configuration	Speed Limit								
	≤30 mph			35 mph			≥40 mph		
	Vehicle AADT <9,000			Vehicle AADT 9,000–15,000			Vehicle AADT >15,000		
2 lanes*	1 2 3 4 5 6	1 3 5 6 7	1 3 5 6 7	1 3 4 5 6	1 3 5 6 7	1 3 5 6 7	1 3 4 5 6 7	1 3 5 6 7	1 3 5 6 7
3 lanes with raised median*	1 2 3 4 5	1 3 5 7	1 3 5 7	1 3 4 5 7	1 3 5 7	1 3 5 7	1 3 4 5 7	1 3 5 7	1 3 5 7
3 lanes w/o raised median ¹	1 2 3 4 5 6 7	1 3 5 6 7	1 3 5 6 7	1 3 4 5 6 7	1 3 5 6 7	1 3 5 6 7	1 3 4 5 6 7	1 3 5 6 7	1 3 5 6 7
4+ lanes with raised median ²	1 3 5	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7
4+ lanes w/o raised median ²	1 3 5 6 7 8	1 3 5 6 7 8	1 3 5 6 7 8	1 3 5 6 7 8	1 3 5 6 7 8	1 3 5 6 7 8	1 3 5 6 7 8	1 3 5 6 7 8	1 3 5 6 7 8

*One lane in each direction ¹One lane in each direction with two-way left-turn lane ²Two or more lanes in each direction

Given the set of conditions in a cell,

- Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.
- # Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.

The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.

- 1 High-visibility crosswalk markings, parking restriction on crosswalk approach, adequate nighttime lighting levels
- 2 Raised crosswalk
- 3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line
- 4 In-Street Pedestrian Crossing sign
- 5 Curb extension
- 6 Pedestrian refuge island
- 7 Pedestrian Hybrid Beacon
- 8 Road Diet

This table was developed using information from: Zegeer, C. V., Stewart, J. R., Huang, H. H., Lagerwey, P. A., Feaganes, J., & Campbell, B. J. (2005), Safety effects of marked versus unmarked crosswalks at uncontrolled locations: Final report and recommended guidelines (No. FHWA-HRT-04-100); Manual on Uniform Traffic Control Devices, 2009 Edition, Chapter 4F, Pedestrian Hybrid Beacons; the Crash Modification Factors (CMF) Clearinghouse website (<http://www.cmfclearinghouse.org>); and the Pedestrian Safety Guide and Countermeasure Selection System (PEDSAFE) website (<http://www.pedbikesafe.org/PEDSAFE>).

8.4.11 Signalized Crosswalk Improvements

As the city’s bike and pedestrian network is built out, special attention will need to be paid at locations where the network crosses through signalized intersections. Traffic signals are generally installed at higher volume intersections with complex vehicle movements that require more dedicated safety devices and strategies. Signalized intersection crosswalk improvements should address the following key characteristics:

- Safety and visibility of pedestrians and bicyclists from motor vehicles
- Reduction of conflicts between pedestrians and vehicles
- Pedestrian and bike crossing origin and destination movements through the intersection

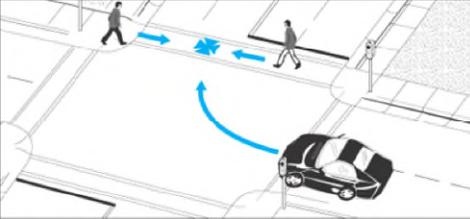
Table 8-4 provides information on devices and strategies for crossings at signalized intersections.

8.4.12 Bicycle Safety Improvements

Bicycle improvements can range from on-street to off-street improvements. On-street improvements can include shared lanes between bikes and vehicles or dedicated bike lanes adjacent to vehicular traffic lanes. All applications should meet required design standards, including LADOTD design standards if applied on state routes. All applications are discussed in Table 8-5.

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Table 8-4. Alternatives for Crossings at Signalized Intersections

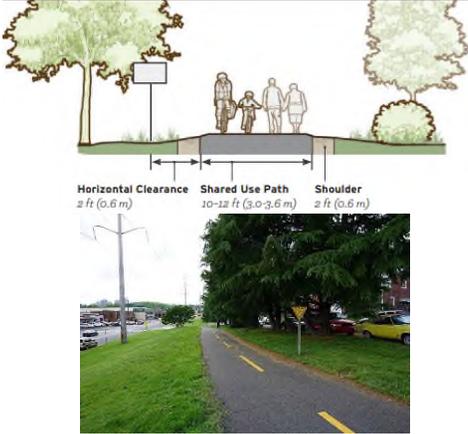
Device / Strategy	Description	Typical Application	Example
<p>Pedestrian Crossing Signals and Detection</p>	<p>Pedestrian crossing signals indicate to pedestrians that it is safe to cross an intersection approach. The signal goes through three phases: (1) walk pedestrian indication, telling the user to begin crossing, (2) flashing hand indication, telling users in the crosswalk to complete their movement, and (3) solid hand indication, telling users not to cross the intersection.</p> <p>These crossing signals are actuated by a detection device. Generally, at locations with sporadic pedestrian traffic, pushbuttons are used. While at locations with higher and consistent pedestrian volumes either passive detection such as radar is used, or the signal is programmed to always serve the pedestrian phase.</p>	<p>Pedestrian crossing signals and detection should be installed at all signalized intersections where crosswalks exist.</p> <p>The detection method should be carefully selected based on the characteristics of pedestrian traffic anticipated at the location.</p> <p>Some passive detection systems also allow for data collection such as volumes and speeds for pedestrians, bicyclists, and vehicles</p>	
<p>Leading Pedestrian Interval (LPI)</p>	<p>A leading pedestrian interval is a signal phasing strategy that gives pedestrians a walk notification a few seconds before the associated vehicle phase is given a green light. This head start improves pedestrian safety by increasing their visibility in the crosswalk for turning vehicles.</p>	<p>LPIs are generally installed in locations with higher pedestrian volumes where conflicts with pedestrians and turning vehicles are expected.</p>	
<p>Pedestrian Scramble</p>	<p>A pedestrian scramble is a signal phasing strategy that combines all pedestrian movements into one phase with no conflicting vehicular traffic. This strategy improves pedestrian safety by removing conflicts with turning vehicles and also enables diagonal pedestrian movements through the intersection.</p>	<p>Pedestrian scrambles are installed at locations with high pedestrian volumes and where pedestrians may be crossing the intersection diagonally, such as where a multiuse path crosses from one side of the road to the other.</p>	

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Table 8-5. Bike Safety Alternatives

Device	Description	Typical Application	Example
Sharrows	<p>A Sharrow is a pavement marking placed in a roadway travel lane that indicates a shared lane environment for bicycles and motor vehicles. They reinforce the legitimacy of bicycle traffic on the roadway and indicate a recommended position for the bicyclist. Sharrows provide support for a complete network, but are not a substitute for bike lanes, cycle tracks, or other separation treatments.</p>	<p>The Sharrow pavement marking is typically applied on low volume roadways with lower speeds where the interaction of bicycle and vehicular traffic occurs less.</p>	
On-Street Bike Lane	<p>An On-Street Bike Lane is a designated one-way bike travel lane that is adjacent to vehicular traffic and delineated by pavement striping or other buffer. It is typically separated from the roadway with a wide solid line. Dotted lines at intersection crossings maintain a clear path for cyclists.</p>	<p>On-Street Bike Lanes are typically applied on roadways with moderate volumes and speed. On roadways with higher speeds and volumes, a larger buffer should be used to separate bicycle lanes from vehicle lanes.</p>	
Separated Bike Lane	<p>A Separated Bike Lane is a facility for exclusive use by bicyclists. They are located within or directly adjacent to the roadway and are physically separated from motor vehicular traffic. A Cycle Track is another separated facility that usually provides two-way bike traffic.</p>	<p>The Separated Bike Lane is recommended for use on roadways with higher volumes and moderate- to high-speed motor vehicular traffic. A Cycle Track is recommended in locations where two-way bike traffic is desirable.</p>	

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Device	Description	Typical Application	Example
Multi-Use Path	<p>A Multi-use Path is a facility with exclusive right-of-way for pedestrians and bicyclists. The path is fully separated from the roadway and crossings with motor vehicular traffic are minimized. The paths provide opportunities for trees and landscaping along the path and can be placed adjacent to roadways. Other common path locations include along rivers, beaches, utility corridors, and parks.</p>	<p>Multi-use Paths are appropriate for locations as a parallel route alternative for higher speed and higher volume corridors.</p>	

8.4.13 Data Collection Requirements

Periodic data collection throughout the plan area will be required to assess the measurable objectives discussed in the performance metrics section of the plan. This data collection will require consistent locations for each collection period, as well as additional locations as new facilities are constructed. Each cycle of data collection shall be performed no more than 5 years apart for the life of the plan.

For the currently existing infrastructure, Figure 8-7 shows the proposed data collection locations required for measurement. These count locations should focus on pedestrian and bicycle volumes. Table 8-6 describes each location in further detail.

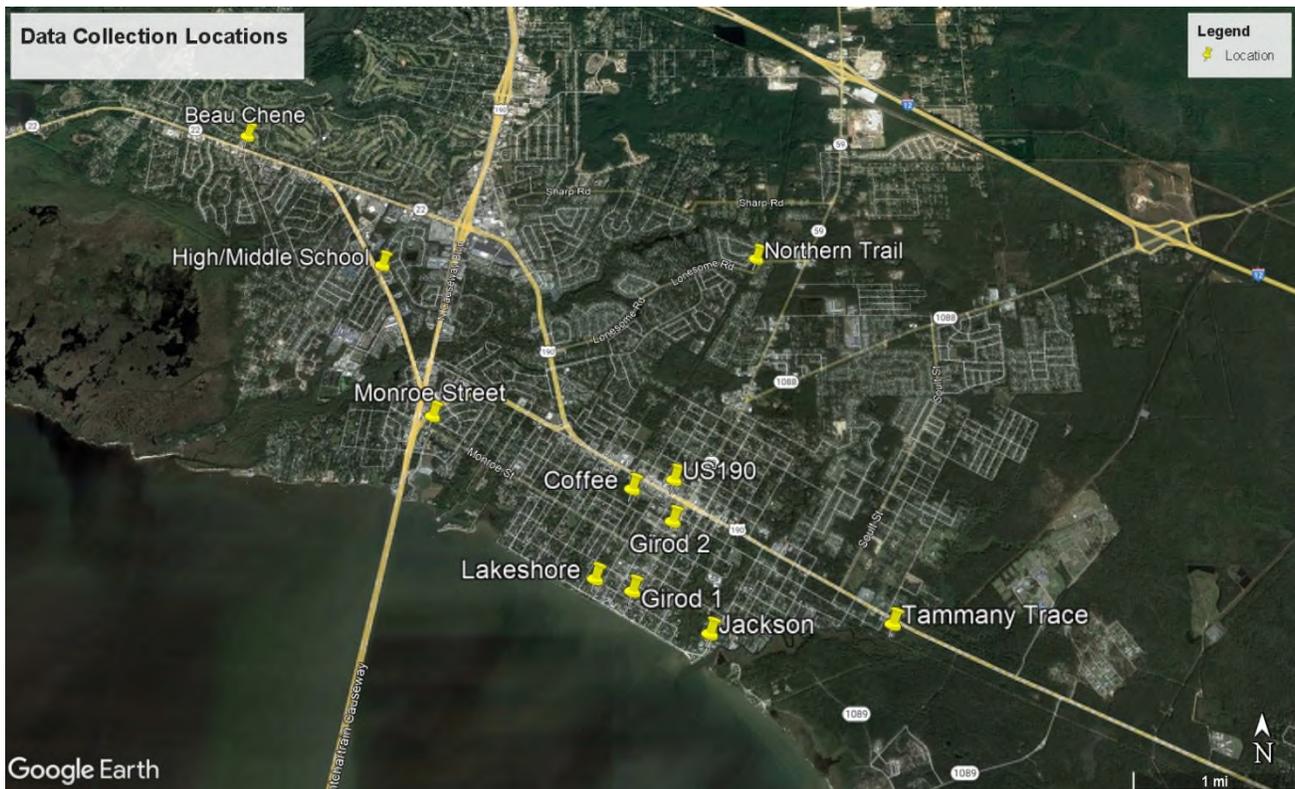


Figure 8-7. Data Collection Locations

Table 8-6. Future Count Locations

Location ID	Description
Lakeshore	Location to pull data from the University of New Orleans permanent count station data
Girod 1	Location should be near the intersection with Lakeshore Drive
Girod 2	Location should be near the Tammany Trace Trailhead
Jackson	Location along the Jackson Avenue multi-use path
Tammany Trace	Location should be on the eastern limits of the study area near Pelican Park

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Location ID	Description
Coffee	Location to pull data from the University of New Orleans permanent count station data along the Tammany Trace
US 190	Location to be along US 190 and should be near Lafitte/Girod Street
Monroe	Location should be along Monroe near Causeway Blvd.
Northern Trail	Location on the Tammany Trace near the northern limits of the plan area
High/Middle School	Location along W. Causeway approach near the schools.
Beau Chene	Location along LA 22 near the Beau Chene entrance

8.4.14 Traffic Calming

Traffic Calming is the use of physical design and other measures to improve safety for motorists, pedestrians, and bicyclists. It has developed into a tool to address unsafe driving behaviors, such as speeding and inattentiveness, and aims to encourage safer, more responsible behavior by users. Traffic calming can aid in the reduction of vehicle speed, which is critical in areas where there are potential interactions between pedestrians and vehicles. The slower the speed of the vehicle, the lower the risk of fatalities and severe injury to pedestrians. Figure 8-8 shows the correlation between speed and injury severity.

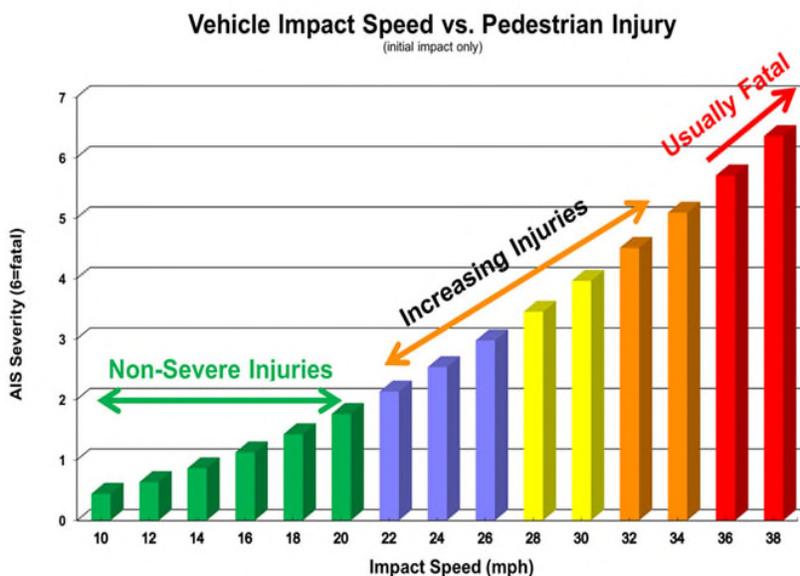


Figure 8-8. Vehicle Impact Speed vs. Pedestrian Injury (FHWA)

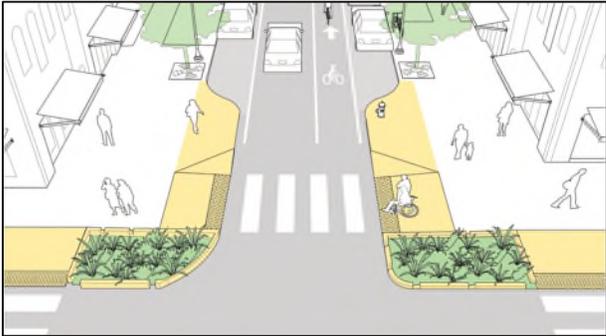
Traffic calming devices and measures need to be applied strategically and are not for every roadway. The application of these strategies can unintentionally divert traffic away from the implementation site to adjacent streets, moving the problem rather than solving it. Table 8-7 shows several different traffic calming applications and examples.

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Table 8-7. Traffic Calming Devices

Device	Description	Example
<p>Speed Bumps/Humps/Tables</p>	<p>All in the same family, they raise the pavement three to four inches. Speed bumps are narrow and abrupt, best confined to parking lots. Speed humps and speed tables are more gradual, often 22 feet start-to-finish, usually with a flat top.</p>	
<p>Traffic Circles/Roundabout</p>	<p>In residential areas, may be as small as 16 to 25 feet in diameter; just enough to cause motorists to slow and alter their path. Roundabouts are larger versions used at major intersections.</p>	
<p>Chicanes, Bends or Deviations</p>	<p>Roadway redesigns that make motorists drive around fixed objects, usually curbs extending alternately from opposite sides to form a serpentine pathway.</p>	

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Device	Description	Example
<p>Neckdowns, Chokers, Bulbs</p>	<p>Various forms of narrowing the road at mid-road or intersections, usually by protruding sidewalks into the street from one or more sides.</p>	
<p>Narrow Roads</p>	<p>Using sidewalks, landscaping, or striping to narrow lanes to about 10 feet.</p>	
<p>Raised Intersections, Changes in Road Texture</p>	<p>Can use grooved asphalt, colored paving stones, brick, or for the ultimate effectiveness, cobblestones.</p>	

Device	Description	Example
<p>Direction Changes</p>	<p>Accomplished by "diverters" that diagonally bisect an intersection, traffic barriers that force cars to turn one direction, sidewalk "bulbs" that block access to one lane. All force drivers out of straight-line routes.</p>	

Images from National Association of City Transportation Officials (<https://nacto.org/>)
 Descriptions from the City of Baton Rouge (brla.gov)

9 Performance Targets and Metrics

Performance targets and metrics are critical in tracking the performance of the plan’s established vision and goals. The measured performance metrics can identify deficiencies and adjustments that may need to be made in strategies as the plan is implemented.

9.1 Safety

Between 2015 and 2019, a combined total of 55 pedestrian- and bicycle-related crashes occurred within the plan area. While the bicycle-related crashes were higher, the pedestrian-related crashes resulted in more severe and fatal crashes. The leading cause was distracted driving: 45 percent of bicycle-related crashes involved a right-angle collision when the at-fault subject (either the vehicle or the bicyclist) failed to yield the right of way or disregarded the traffic control; 40 percent of pedestrian-related crashes involved pedestrians crossing or entering the roadway. Figures 10-1 and 10-2 show the number of pedestrian and bicycle-related crashes, respectively, over the five-year period.

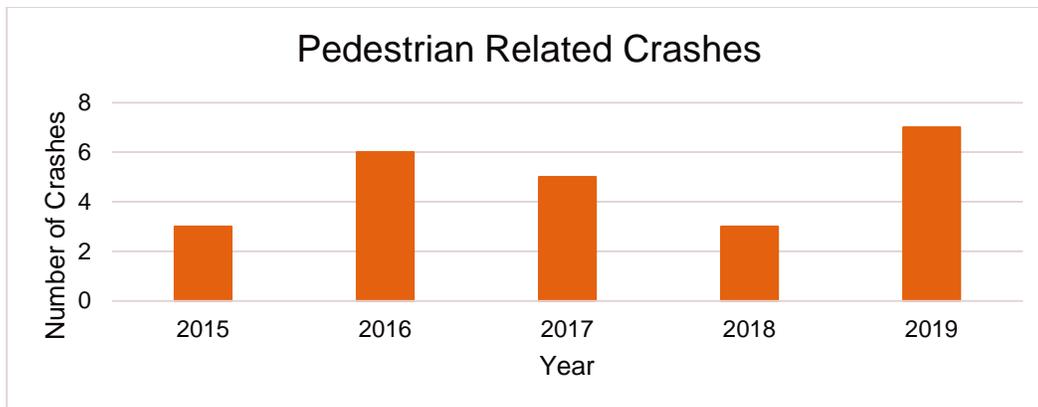


Figure 9-1: Pedestrian-related crashes from 2015 to 2019

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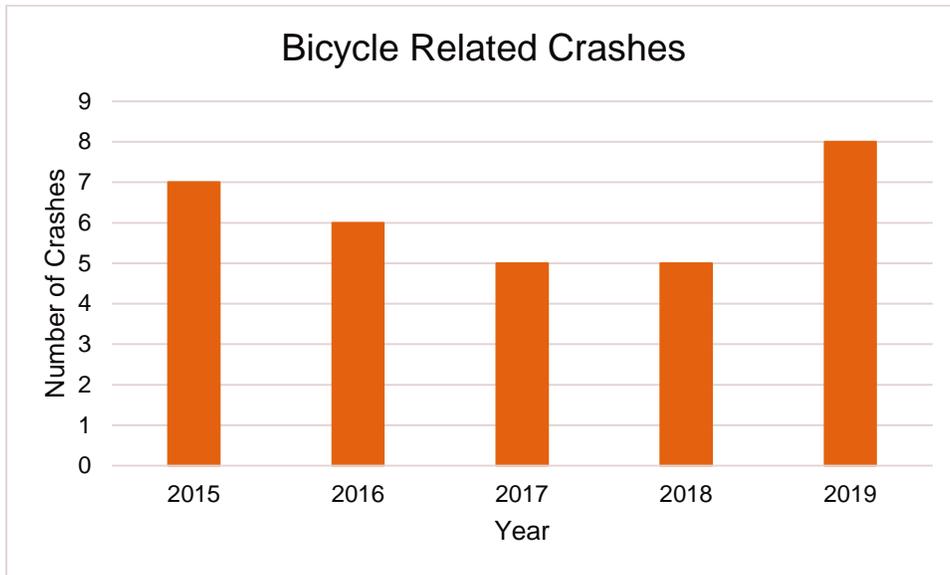


Figure 9-2: Bicycle-related crashes from 2015 to 2019

9.1.1 Reduced Crash Rate

Proposed Target – To reduce the crash rate of pedestrian and bicycle-related crashes by 50% in 20 years. A crash rate is the number of crashes compared to a value either being a period of time, length, or per user. A crash rate will need to be collected and analyzed over time to see how the system is performing. As new facilities are added to the system, these locations need to be added to the data collection. Simply comparing the raw number of crashes from each round of data collection will likely result information bias. As the number of facilities and users increase, an increase in the raw number of crashes over time is expected. Intermediate targets are to reduce the crash rate by 10% in 5 years and 25% in 10 years.

Metric – To compare the crash rate every 5 years in crashes/hundred-thousand users. To calculate this metric, the City will need to have consistent count locations over that period on existing routes and add locations to new routes as they join the system. The following formula may be used to calculate the rate.

$$R = \frac{A \times 100,000}{V * 365}$$

Where:

R – Crash rate

A – Crashes per year

V – Average Daily Traffic (users per day)

As an example, using the average number of crashes over the last 5 years (55 total/11 per year) and the volumes for the facilities (3,360 users per day) that were obtained in the Data Collection Report, a crash rate of 0.89 crashes per hundred-thousand users was found. This is only an example of how to calculate the rate as the number of crashes is from 2015-2019 and the volumes obtained are from 2022. The same formula can be used to

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calculate individual rates for both pedestrians and bicyclists. The pedestrian crash rate over the same period would be 0.71 crashes per hundred-thousand users, and the bicycle crash rate over that period would be 1.10 crashes per hundred-thousand users. Comparing these crash trends with crashes in the area, it is not typical to see bicycle crashes with a higher quantity or rate than that of pedestrians. Figure 8-7 shows the recommended count locations on existing facilities to be consistently counted for this metric.

9.1.2 Vision Zero

Vision Zero is a multi-jurisdiction road traffic safety initiative that aims to achieve a transportation system with no fatalities or serious injuries while increasing safe mobility. Vision Zero emphasizes that the responsibility of safety is shared between the transportation system designers and system users. Vision Zero will be implemented in the Complete Streets Policy Recommendations as well as become a vital part of the design process. The following are some key features of Vision Zero:

- The Vision Zero approach is to design Complete Streets that accommodate people using all methods of transportation, prioritizing safe travel for all users over expeditious travel of motor vehicles.
- The Vision Zero approach is to design and operate roads to achieve context-appropriate vehicle speeds that protect all roadway users.
- The Vision Zero approach is to prioritize Complete Streets and roadway design and operation projects in disadvantaged communities.

When designing a new project or performing maintenance projects on existing infrastructure, the design team will consider the Vision Zero approach.

From the data collected within the study limits between 2015 and 2019, there were 4 fatalities related to pedestrian and bicycle crashes, three of which occurred along US 190 and one that occurred on I-12. Three of the fatal crashes involved pedestrians and one involved a bicyclist. A crash fatality rate was determined over this period to see where the study area compared to other cities in the nation. For pedestrian fatality crash rate, the study area has a rate of 8.1 deaths per one million population. The national average is 15.1 according to the Department of Transportation. While this value is below average it is a comparable rate to cities of much larger populations, indicating the number of fatalities for the population and size of the study area is high. For bicycle fatality crash rate, the study area has a rate of 1.1 deaths per one million population. The national average is 2.31 according to the Department of Transportation. This rate for bicycles is comparable to a rate for Philadelphia, PA. Once again, indicating the number of fatalities for the population and size of the study area is high.

Proposed Target – To reduce the number of deaths from crashes related to pedestrians and bicycles to zero in 10 years.

Metric – Measure the raw number of fatalities related to pedestrian and bicycle crashes every year. Achieve zero fatalities for a minimum of 5 years after the first 10 years of the plan being implemented. This metric includes crashes related to fatalities only and not overall crashes.

9.2 Accessibility

The American Community Survey (ACS) 2019 5-year estimates data set indicates that the population of Mandeville is just over 12,000 inhabitants. The largest age group is the population over 65 years old at 18% of the total population. The ACS also shows that over 16% of the total population in the City are people with disabilities, with people 65 years and older making up the largest portion of the population with special needs among other age groups.

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The areas of the City with the most growth correspond to the subdivisions located to the west of the Lake Pontchartrain Causeway and US 190. This area has primarily residential and commercial land uses. Other areas of the city are experiencing a decrease in population growth due to changes in land use. Areas such as Old Mandeville are shifting to more commercial and mixed-use zones with the addition of many restaurants, coffee shops, and attractions.

The project team has identified that there are facilities in the City that are not compliant with the Americans with Disabilities Act (ADA), and with poor or non-existing signalization. The plan aims to create ADA-friendly facilities and improve connectivity and accessibility throughout the city to guarantee access to all.

9.2.1 Increase Accessibility to New Users

Potential Target – Increase the accessibility to new users by increasing the number of usable facilities within the study limits. The new facilities need to be targeted to provide access to adequate destinations and provide transportation equity. A target would be to increase the Average Daily Traffic (ADT) in users/day (pedestrians and bicyclists) of the system by 50% in 20 years.

Using the ADTs that are collected in Section 9.1.1, the increase or decrease in users/day (pedestrians and bicyclists) may be tracked over time. Seeing the ADT on existing facilities decrease as new facilities are built and the ADT of the system remains the same will show a redistribution of trips. Seeing the ADT on existing facilities remain or increase as new facilities are built and the ADT of the system increase will show that these new routes are providing more opportunities to new users to access new and existing facilities.

Metric – The City and Parish to commit to building a set length of new pedestrian and bicycle facilities for the first 5 years of the plan with that value reducing over time as the facilities suggested in the plan are constructed. Another alternative instead of length would be to commit a set dollar amount of budgeted value to build new pedestrian and bicycle facilities. These values are to be determined by the City and Parish and updated as the budget for the plan is developed.

Metric – An increase in accessibility may be measured by seeing an increase in volume (users/day of pedestrians and bicyclists from the ADT counts). The City is to measure the ADT of users at existing locations and at new facilities every 5 years to track the rise or fall in the volume of users of the system. Suggested data collection points are shown in Figure 9-3.

9.2.2 Increase Accessibility to Existing Facilities

Potential Target – Increase the accessibility to new and existing users by performing maintenance projects on existing facilities including safety or other general maintenance requirements and needs. The goal is to have separate buckets of funding between new and existing routes to be aware of maintenance spending and the important of both maintenance and new projects.

Metric – The City and Parish to commit to performing maintenance projects on X linear feet of existing pedestrian and bicycle facilities for the first 5 years of the plan with that value reducing over time as the facilities are upgraded. Another alternative instead of linear footage would be to commit an X dollar amount budgeted to perform maintenance on existing pedestrian and bicycle facilities. These values are to be determined by the City and Parish and updated as the budget for the plan is developed.

9.2.3 Increase Accessibility to Disabled Users

Potential Target – To provide ADA-compliant ramps at all required locations on existing facilities that currently do not provide compliant ramps.

Metric – The City and Parish to commit to performing ramp upgrades at a to be determined dollar value per year of the plan intended for upgrading existing ramps that do not currently meet ADA requirements. These values are to be determined by the City and Parish and updated as the budget for the plan is developed.

9.2.4 Increase Accessibility to Socially Vulnerable Population

Potential Target – To provide access to bicycle and pedestrian facilities in areas where householders have zero access to vehicles.

Metric – The City and Parish to commit to creating dedicated bike and ped facilities within one-mile radius for pedestrians, which is about a 20-minute walk for the average pedestrian. Similarly, a three-mile radius for cyclists, which is also an average 20-minute bike ride in the west of the Lake Pontchartrain Causeway / US 190 area where people present more challenges when traveling to work, hospitals, schools, and destinations. These values are to be determined by the City and Parish and updated as the budget for the plan is developed.

9.3 Economic Development

The largest industries in Mandeville are professional, scientific, technical services, health care and social assistance, and retail trade. The retail trade industry represents 10 percent of the workforce, and the food services and accommodations industry represent 4 percent of the total workforce.

The City has made substantial efforts to promote sustainable economic development through campaigns and policies. Additionally, recent studies have shown that consumers that travel by bicycle and/or foot are more likely to spend more on goods and services than people using other transportation methods. Therefore, improvements to the bicycle and pedestrian network will enhance the connectivity to destinations and attractions and have a beneficial impact on the economy of the city.

9.3.1 Increase in Tax Revenue

Potential Target – To increase the tax revenue for the City by 10% in the first 10 years of the Plan and 20% by Year 20 for commercial properties located on designated pedestrian and bicycle routes. Improved access and growth in usership will result in an increase in tax revenue from commercial properties located near system facilities.

Metric – City to compare tax revenue over the Plan period to see revenue growth. Revenue to focus on tax revenue from commercial properties located adjacent to designated pedestrian and bicycle facilities. The purpose being to see the impact of the increase in bicycle and pedestrian traffic on commercial properties within the study area.

9.3.2 Increase in Routes Near Commercial Areas

Potential Target – To increase pedestrian and bicycle access to commercial land use areas within the plan limits.

Metric – To provide a designated facility either by walking or biking within a half-mile of all commercial-zoned land use properties within the study area. To attract bicyclists and provide them a safe place to park, the City shall install a minimum of two bicycle parking facilities near the Old Mandeville area. It is also highly recommended that the City, as well as private businesses, provide additional bicycle parking facilities where appropriate. The number of dedicated bicycle parking facilities will be monitored over the life in the Plan with the goal to see an increase in that total over the life of the Plan.

9.4 Summary

The performance measures are listed with the respective target and metric as well as the goal/goals and strategy/strategies that they apply to are shown in Table 9-1 on the following page.

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Table 9-1: Summary of Performance Measures

Performance Measure	Targets	Metric	Goal	Strategies
Reduced Crash Rate	Reduce existing crash rate by 10% in 5 years, 25% in 10 years and 50% in 20 years.	Measure crash rate every 5 years in crashes/hundred-thousand users. Obtain crash data from crash records and the volume of users from consistent count locations in the system.	Improve bicycle and pedestrian safety	-Create a safe and well-connected bicycle and pedestrian network -Identify dangerous locations and safety deficiencies -Provide low-cost easy to implement recommendations to improve existing infrastructure
Vision Zero	Reduce the fatalities for pedestrian and bicycle related crashes to zero after the first 10 years of the plan	Measure the number of fatalities from crashes involving pedestrians and bicyclists	Improve bicycle and pedestrian safety	-Improve dangerous roadway crossing and intersection to provide a safe cycling and walking environment. -Provide educational programs to increase safety awareness
Increase Accessibility to New Users	Increase the Average Daily Traffic (ADT) on system facilities by 50% in 20 years	Collect the ADT by traffic counts at consistent locations in the system every 5 years	Accessible pedestrian and bicycle network	-Expand access to public facilities and attractions -Provide connectivity options to other planned and envisioned improvements in the network. -Provide recommendations for walking access to main destinations within one mile radius and biking access to main destinations within a three-mile radius
Increase Accessibility to Existing Facilities	Perform maintenance and upkeep on the existing infrastructure in the system	The City to commit to a budgeted dollar to maintenance projects on the existing network each year or to commit to performing maintenance projects on a to be determined length of the existing network each year	Improve pedestrian and bicycle safety and Accessible pedestrian and bicycle network	-Provide low-cost easy to implement recommendations to improve existing infrastructure -Provide improvements to existing infrastructure to address deficiencies that currently make portions of the existing system inaccessible.
Increase Accessibility to Disabled Users	Upgrade existing non-compliant ADA ramps to ADA compliance	The City to commit a budgeted dollar amount to the upgrade of non-compliant ADA ramps at existing intersections to ADA compliant ramps	Accessible pedestrian and bicycle network	-Improve transportation equity to provide access to all people
Increase Accessibility to Socially Vulnerable Population	Create bicycle and pedestrian facilities in areas where householders have zero vehicles.	The City is to commit to creating dedicated bike and ped facilities within one-mile radio for pedestrians and a three-mile radius for cyclists in areas of the city where people present more challenges when traveling.	Accessible pedestrian and bicycle network	-Improve transportation equity to provide access to all people
Increase Tax Revenue	To increase the tax revenue by 10% in 10 years and 20% in 20 years for commercial zoned properties along system facilities	Measure the tax revenue for commercial zoned land use properties that are located adjacent to pedestrian and bicycle network facilities	Support economic development	-Create a more inviting environment in the study area to support existing businesses to attract new residents, businesses and visitors -Provide improvements in areas that enable short and comfortable active transportation to key destinations
Increase in Routes Near Commercial Areas	To increase the accessibility to commercial areas	Provide a bicycle or pedestrian route within a half-mile of commercial zoned land use property	Support economic development	-Provide improvements in areas that enable short and comfortable active transportation to key destinations -Provide recommendations for an attractive, affordable, and flexible system

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