

Program Summary:

A master planning methodology and document for building a complete bicycle system for Lafayette, Louisiana.

Program Statement:

This bicycle master plan document provides a plan and strategies to build a connected, safe, comfortable, and equitable bicycle system. This document demonstrates data analysis and public input, bicycle network design at all scales, and wayfinding elements for a comprehensive system which both addresses inequities and fragmentation in Lafayette's development and establishes a new standard for bicycle infrastructure in the United States.

Data was first collected and diagrammed through a series of maps and layered to inform design layout for routes which together would form the bicycle network. A charrette, community meeting, and public questionnaire gathered invaluable experiential data and opinions from the communities the bicycle network is designed to serve. The data and public input gathered were synthesized into an easy-to-follow, color-coded bicycle route system. The document uses various graphic elements to illustrate the building blocks for a complete bicycle network through various scales of street sections, intersection designs, and supporting streetscape components.

Phase 1 of the network organizes the system and serves as a community connector, creating almost nine miles of bicycle paths, creating direct links between seventeen neighborhoods and eleven city assets. A set of illustrations at key locations demonstrate how the proposed street typologies can be incorporated over existing conditions around this loop. Once Phase 1 is completed, the other six routes will follow as strategically implemented sections, serving as the spokes around the loop to create a complete network.

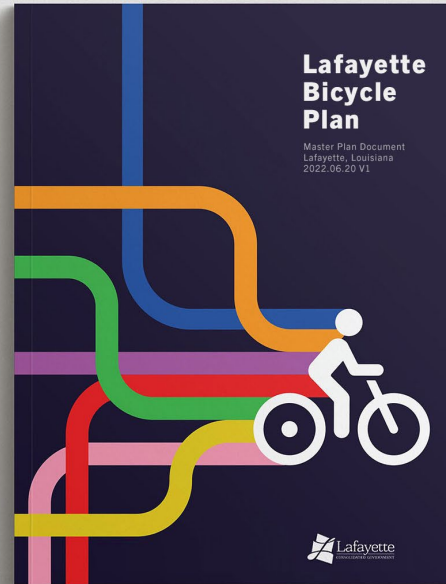
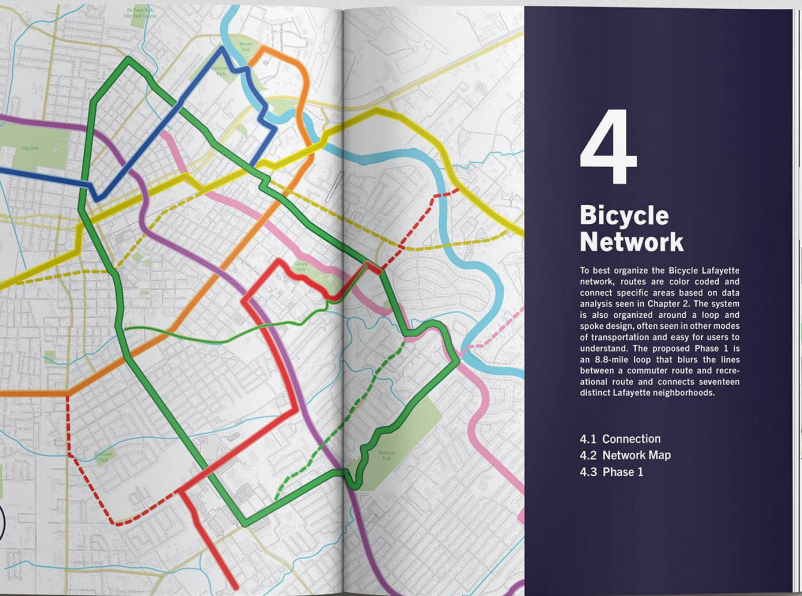
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Building Area: (sf)
NA

Cost per Square Foot:
TBD

Construction Cost
TBD

Date of Completion:
September 2022



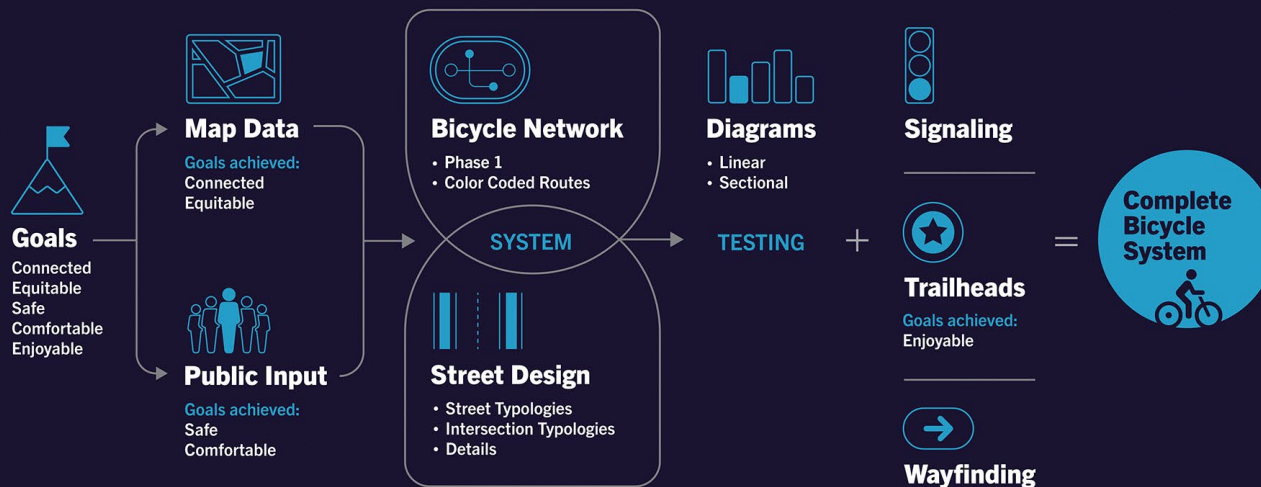
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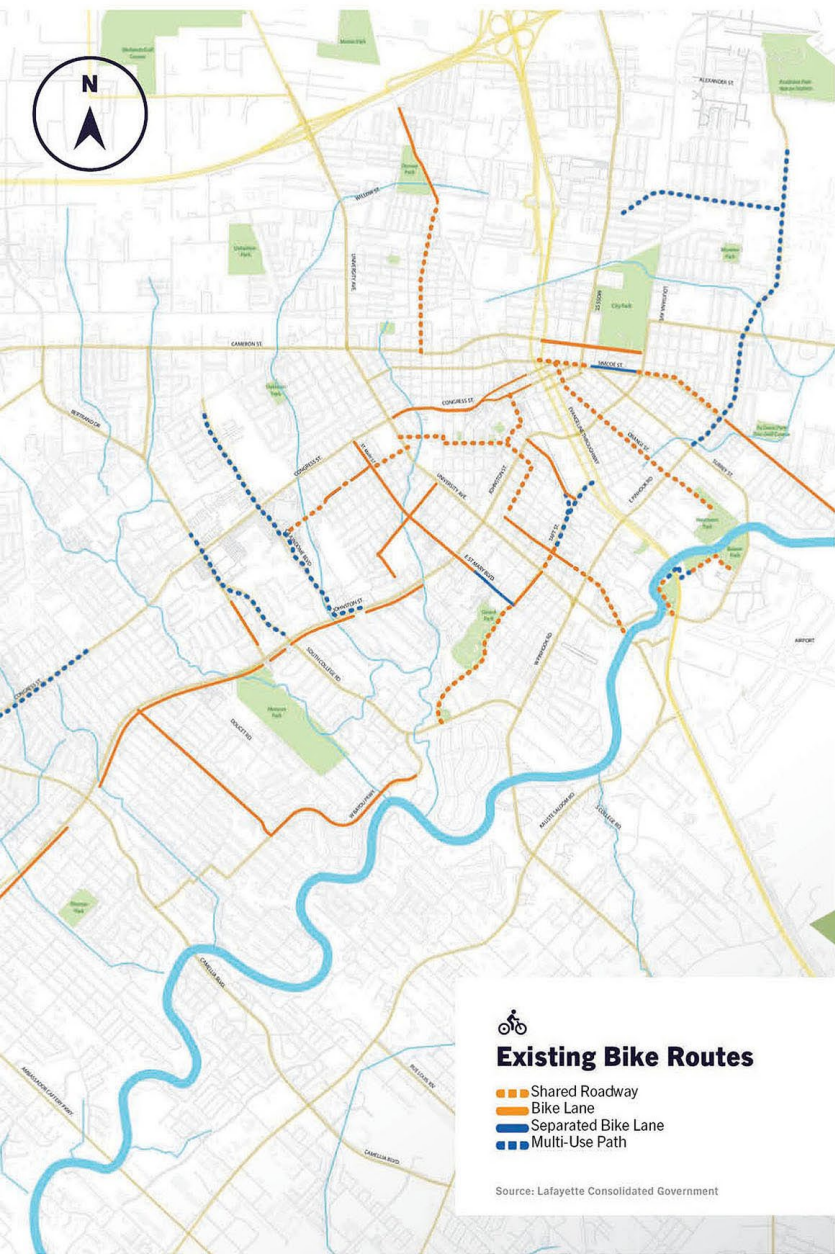
This bicycle master plan document was born out of a previous wayfinding project for Lafayette Consolidated Government that both orients users and addresses perceived barriers—socioeconomic, geographic, linguistic—in Lafayette's urban environment.

The master plan employs a responsive, systematic methodology to expand upon the wayfinding system by creating a bicycle network that meets the following objectives:

- It is **SAFE** for pedestrians and bicyclists.
- It is **CONNECTED** to other routes, traffic generators, and/or regional assets, linking them.
- It is **COMFORTABLE** for all ages ("5 to 95").
- It is **ENJOYABLE** with a desirability to encourage use.
- It is **EQUITABLE** with accessibility for all demographics and minorities.
- It establishes a **NEW STANDARD** for bike infrastructure in the United States.

When our team first began the planning process, we approached the design by categorizing commuter (or urban) routes and recreational trails. It became apparent that these categories would constrain the design. The proposed routes, and their street designs of the bicycle network plan blur the line between a commuter bike route and a recreational bike trail.

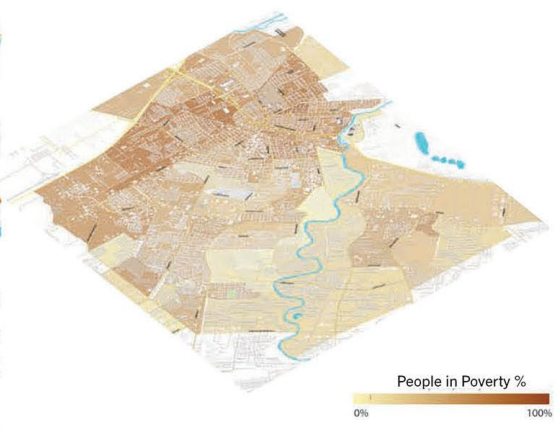




Existing Bike Routes

- Shared Roadway
- Bike Lane
- Separated Bike Lane
- Multi-Use Path

Source: Lafayette Consolidated Government



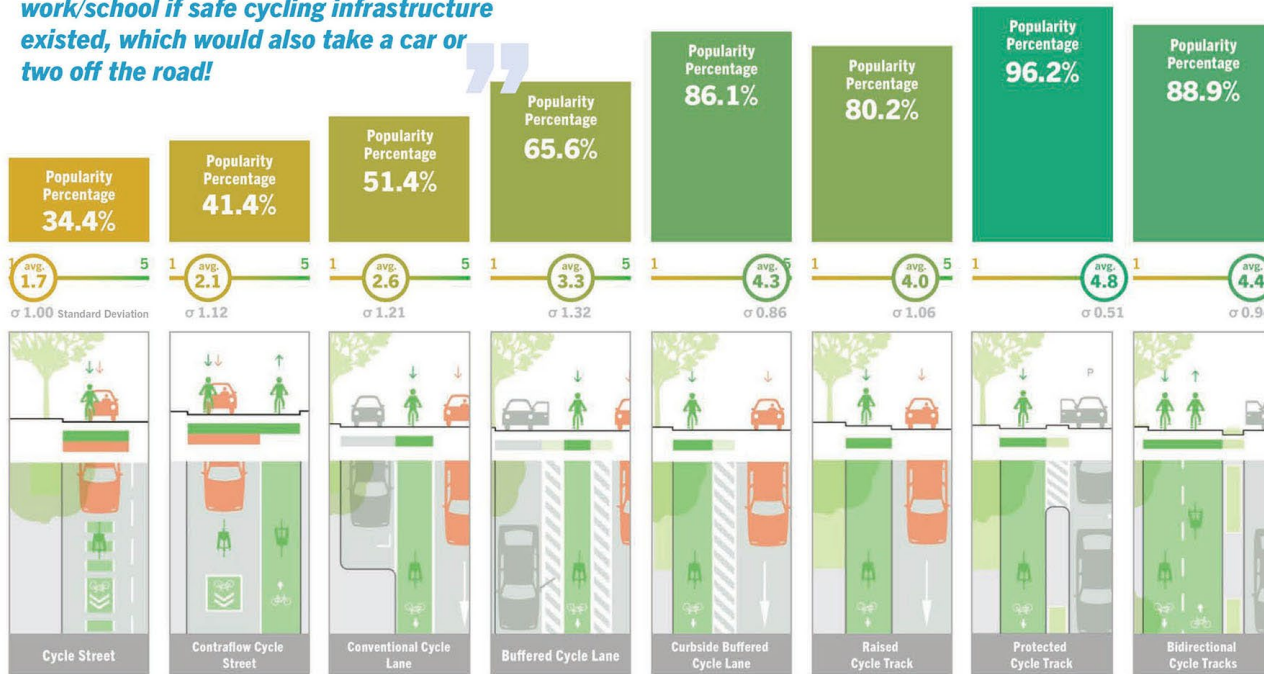
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Lafayette, like many cities today, has experienced pockets of uneven development with varying levels of complexity and incompleteness. This uneven development has left the city fragmented, with disparities in opportunities and social inequalities. In analyzing data collected while creating the Bicycle Lafayette Plan this fragmentation becomes most apparent in looking at poverty rates and car ownership rates by census tract.

The master plan was developed with numerous data sets. Data on connections between public and institutional assets, neighborhoods, and parks, traffic data, available right-of-way widths, and potential cooperative endeavors with other public institutions, created links. Data on poverty and car ownership rates informed connectivity and equitability. Walk score heat diagrams informed the design of areas where people work, shop, or play. Tree canopy coverage data was also considered, as shade extends the comfortable riding season for Louisiana cyclists.

By stitching together the fragmented community through bicycle infrastructure, a much easier obtained mode of transportation than automobiles, the city can become more equitable, providing upward mobility for often left behind communities. Because of the overlap in the complexities, convergent issues can be confronted or even resolved with unified moves.

Myself/my kids could easily ride bikes to work/school if safe cycling infrastructure existed, which would also take a car or two off the road!



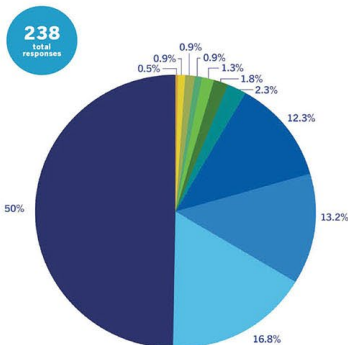
Critical to the success of the project, a robust community engagement process was utilized to gather community input regarding new bike routes that are safe and comfortable for users.

Charrettes, a community meeting, and public questionnaires were all employed. Public input, through public meetings and questionnaires, informed the community's desired typical street sections and the need for separated bike paths from automobiles.

Least Protected

Most Protected

BIKE FACILITY PREFERENCES



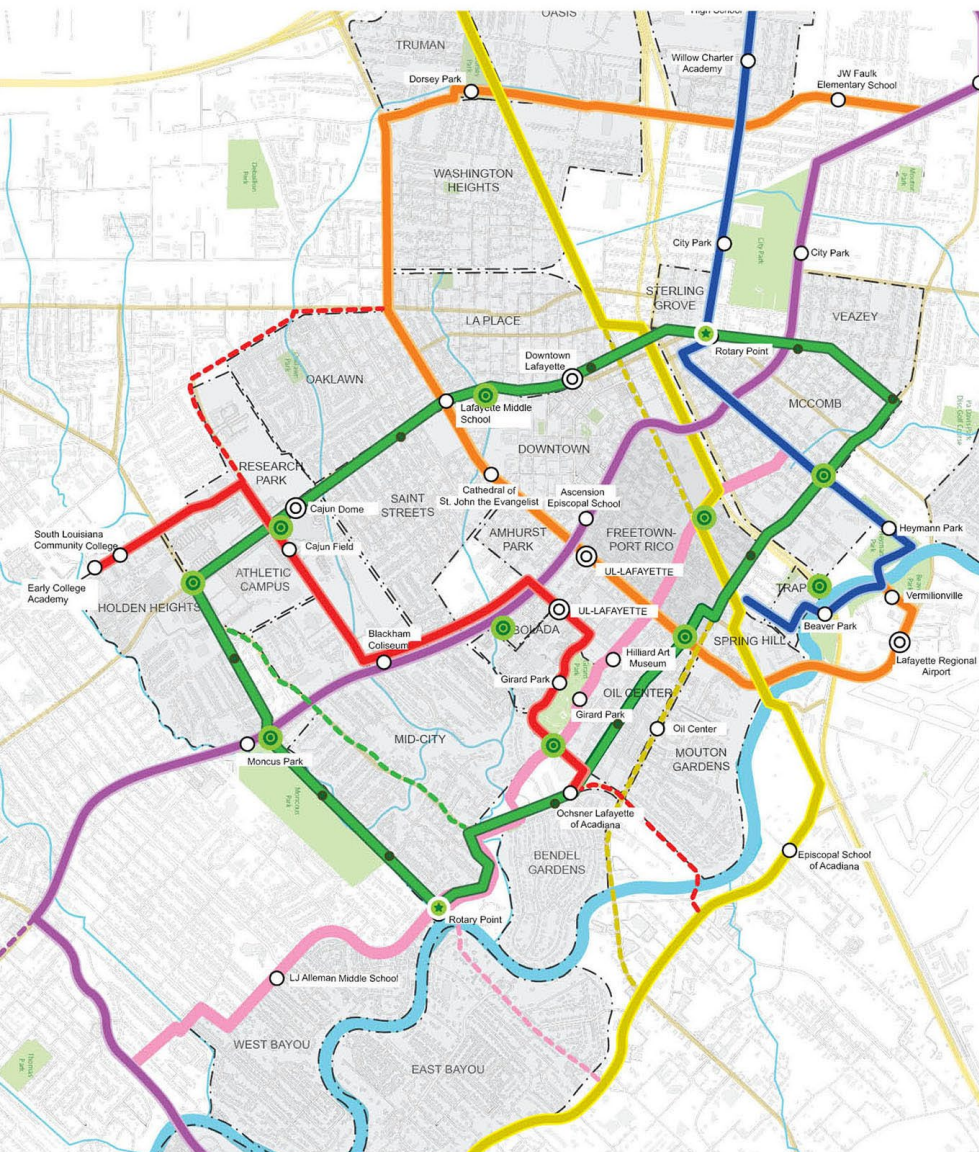
I would use my bike more for local errands if I felt safer.

PUBLIC QUESTIONNAIRE RESPONSES BY ZIP CODE



COMMUNITY MEETING

BICYCLE NETWORK PLAN



- ### Bicycle Network
- Phase 1
 - Bleu Route
 - Orange Route
 - Violet Route
 - Rose Route
 - Jaune Route
 - Rouge Route
 - Coulee St. John
 - - - Phase 1 Spur
 - - - Orange Spur
 - - - Violet Spur
 - - - Rose Spur
 - - - Jaune Spur
 - - - Rouge Spur

MP-295.05

The maps created from the data considerations are based on maps used for almost a century in public transit.

The proposed first phase of the network is an 8.8-mile loop that blurs the lines between a commuter route and recreational route, connecting seventeen distinct Lafayette neighborhoods.

This first phase is the loop in the proposed loop-and-spoke system. Phase 1 will familiarize the public with complete bicycle infrastructure, generating momentum and setting a precedent for the remainder of the network.

- 7**
Proposed Protected
Bicycle Routes
- 47**
Miles of Routes
- 16**
Neighborhoods
Connected by Phase 1
- 32**
Public Assets
Connected
- 3.1**
Miles of Coulee
Recreational Routes

MP-295.06

Route linear diagrams place proposed routes in context with photographs representing distinct neighborhoods as well as corresponding data about existing socioeconomic indices and zoning.

The color-coded routes created by the bicycle network plan allow for further data analysis in testing the routes themselves to see if they are accomplishing the project goals such as equitability (poverty rates and car ownership rates) and connectivity (neighborhoods and city assets).

New zoning districts are suggested to ensure that the public investment in complete streets is met over time with private investments that aligns with the goal of creating a complete street.

5. ROUTE DIAGRAMS

Phase 1 8.8 mi



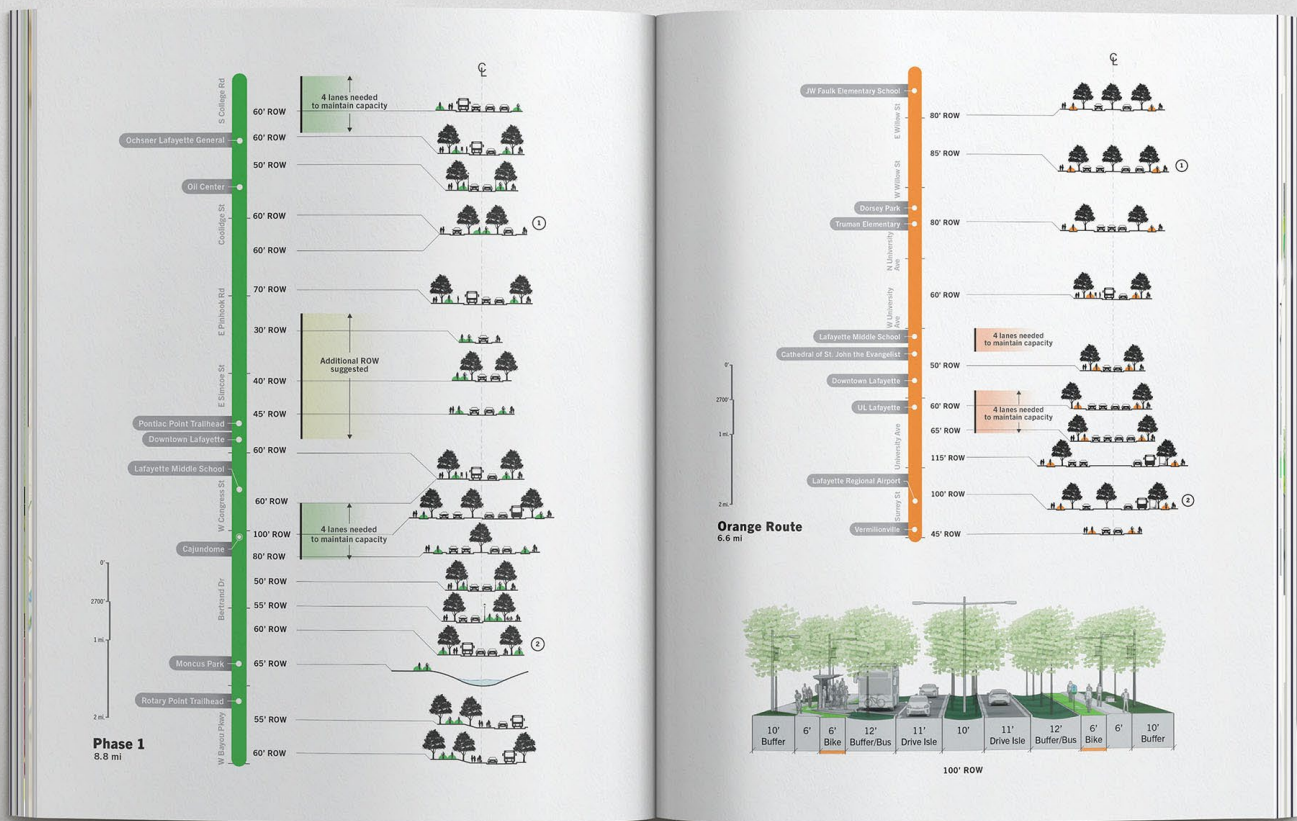
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Route section diagrams diagram each of the routes for proposed typical street cross sections using available right-of-way.

While receiving public input, it became evident that the more separated from the roadway a bike path was, the more popular the typical street section.

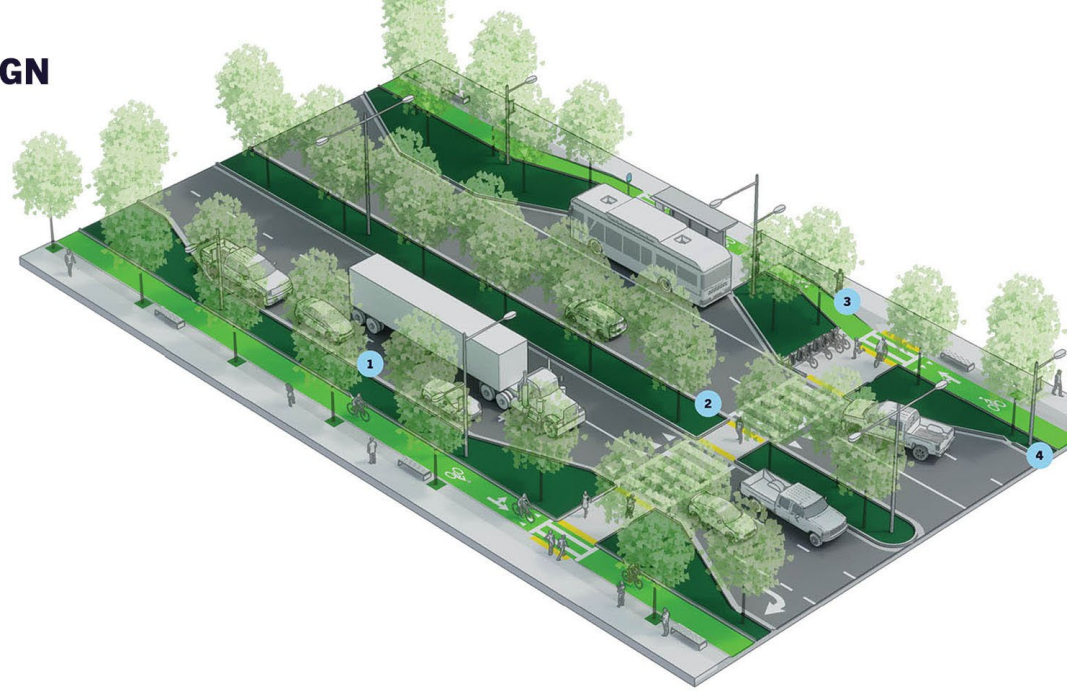
These sections were then modeled in isometric diagrams and typical intersection organizations were developed. The street designs encourage safer automobile traffic speeds, better practices in stormwater management strategies, and increased shading to decrease average temperatures. Details to these designs were then developed such as curb profiles, curb cuts, bioswales, overflow drains, and proposed typical infrastructure locations.

This information is shown in more detail on the subsequent slides.



TYOLOGIES

- 120' R.O.W.
- 1 Parallel Parking
 - 2 Pedestrian Crossing
 - 3 Trailhead at Crossing
 - 4 Curb Cut



The Master Plan document uses various graphic elements to illustrate the building blocks for a complete bicycle network through various scales of street sections, intersection designs, and supporting streetscape components. A well-informed system shapes cities to be more resilient through design and ensures the city is more equitable and inclusive of all regardless of socioeconomic background.

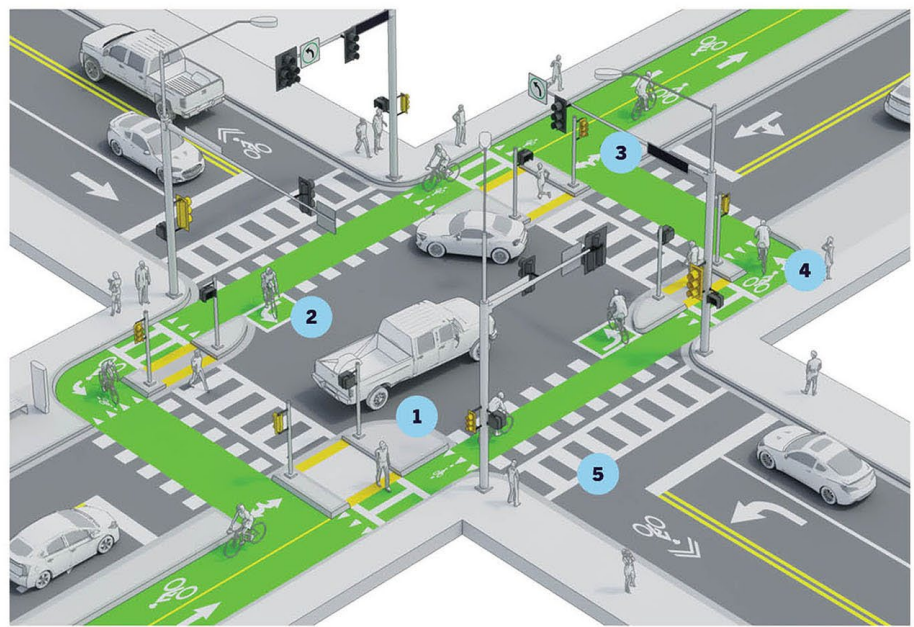
Isometric diagrams were used with sections to study and demonstrate how bicycle paths are incorporated on, along, or near different street typologies.

Safety for bicyclists and pedestrians, climatic mitigation through strategic planting both for stormwater management and user comfort (shade, buffer zones between motor vehicle lanes and bicycle routes), and accommodations for public transportation routes were all considered in depth to form a complete system.

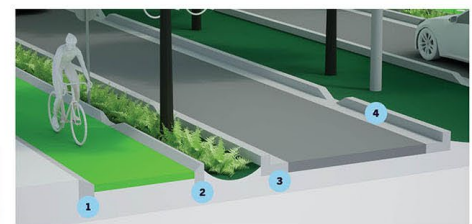
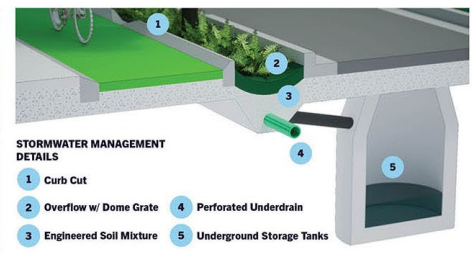
Space is not only needed for multimodal transportation but also stormwater management opportunities, as extreme weather events and major flood events have also exacerbated the need for innovative stormwater management solutions.

INTERSECTIONS

- MEDIUM INTERSECTION
- 1 Reduced Speed Radius
 - 2 Bicycle Turn Box
 - 3 No Right Turn on Red Signal
 - 4 Directional Striping
 - 5 Zebra Striping



DETAILS

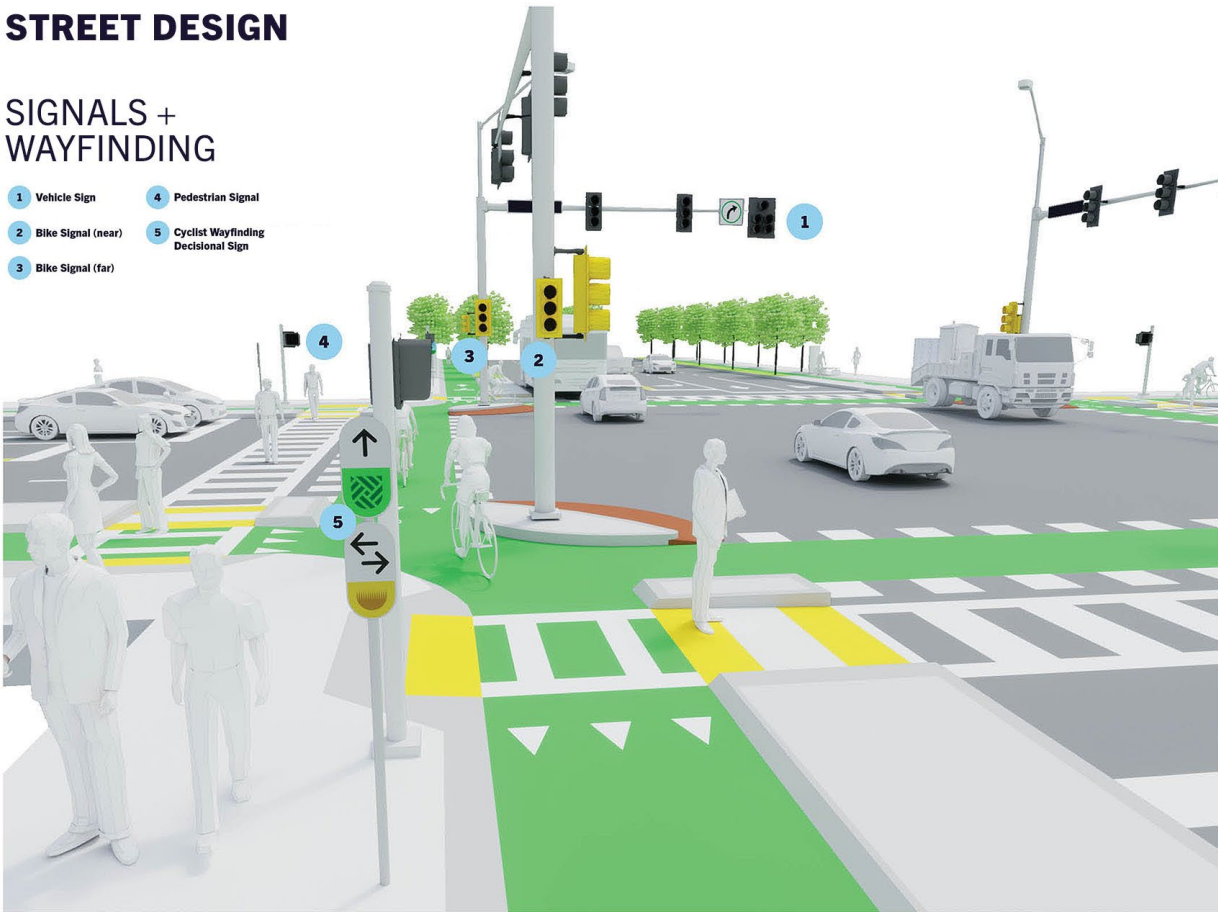




STREET DESIGN

SIGNALS + WAYFINDING

- 1 Vehicle Sign
- 2 Bike Signal (near)
- 3 Bike Signal (far)
- 4 Pedestrian Signal
- 5 Cyclist Wayfinding Decisional Sign



MP-295.09

One of the most important points in any bicycle path system is where bicyclists intersect with automobiles.

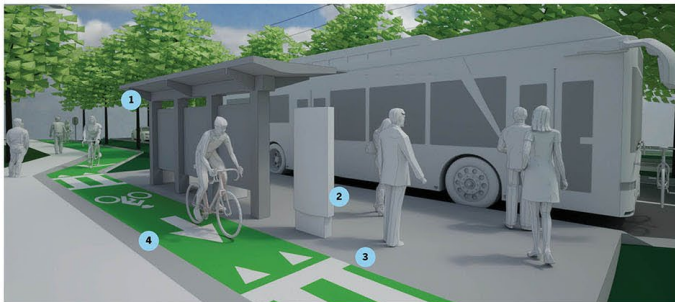
This document illustrates to the city the safest and most comfortable opportunities for bicyclists to cross at signalized intersections.

Trailheads help to ensure that the bicycle system is used for recreation, in addition to commuting.

Multimodal transportation is important for trip continuum and ultimately can determine whether someone decides to bike to get to their destination.

TRAILHEADS + AMENITIES

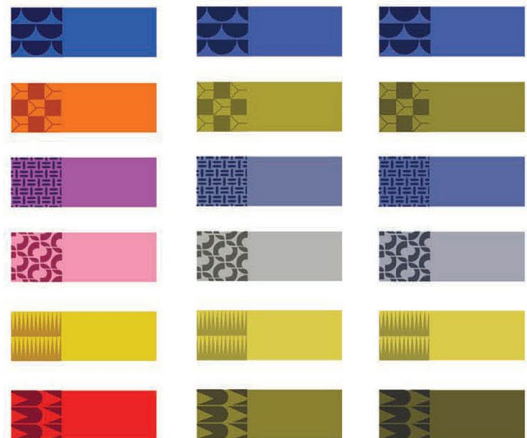
- 1 Bus Stop Shelter
- 2 Wayfinding Totem
- 3 Zebra Signs for Pedestrians
- 4 Directional Striping
- 1 Drinking Fountain
- 2 Bike Share & Parking
- 3 Outdoor Seating





WAYFINDING

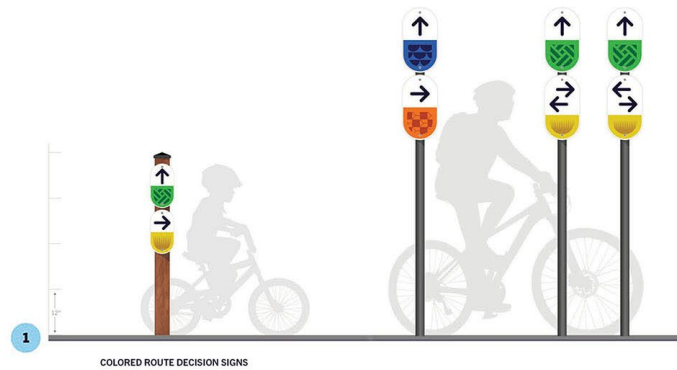
VISIBLE | EQUITABLE



Unaffected Color Vision Deuteranopia Type Protanopia Type



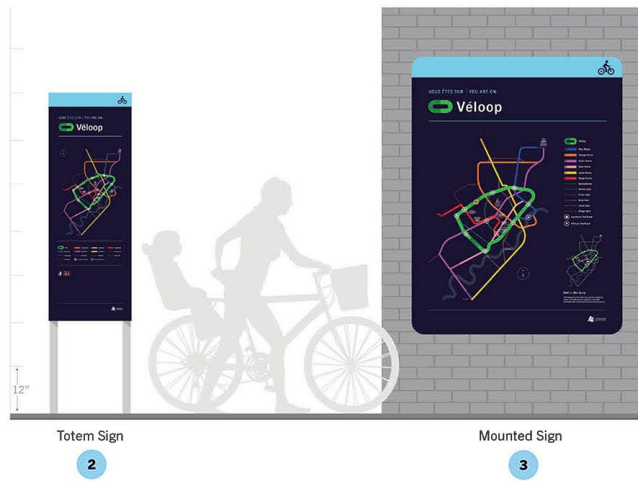
- 1 Route Lafayette decision signs** provide the direction of key destinations. They include arrows, destinations, and travel times. **Colored route confirmation signs or bands** may be added to decision signs to communicate which route a cyclist is on and reduce the number of colored route confirmation signs.
- 2 Freestanding Totems** orient cyclists to their location along a route and other route connections.
- 3 Mounted Signs** offer the same information but vary in size and shape.



1 COLORED ROUTE DECISION SIGNS



1 12"x36" Cyclist Sign 12"x18" Cyclist Sign Cyclist Wide Wrapped Sign Cyclist Street Sign



2 Totem Sign 3 Mounted Sign

MP-295.10

The bicycle plan's wayfinding signage builds off the city's existing wayfinding system, providing visual information that guides bicyclists through the city.

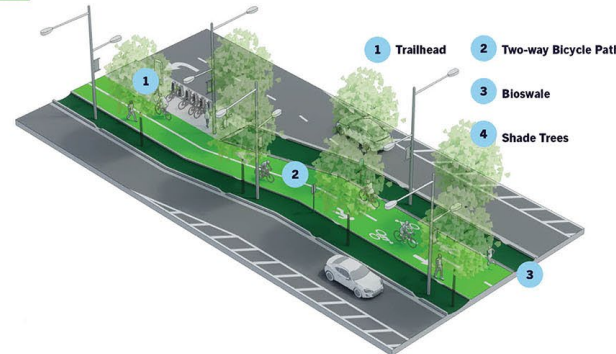
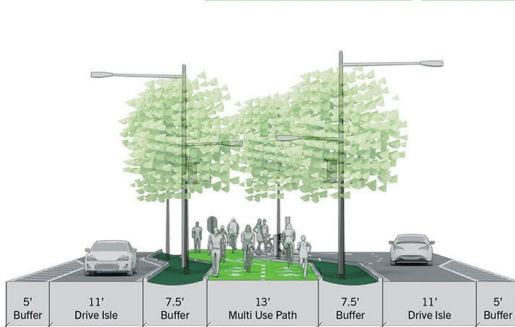
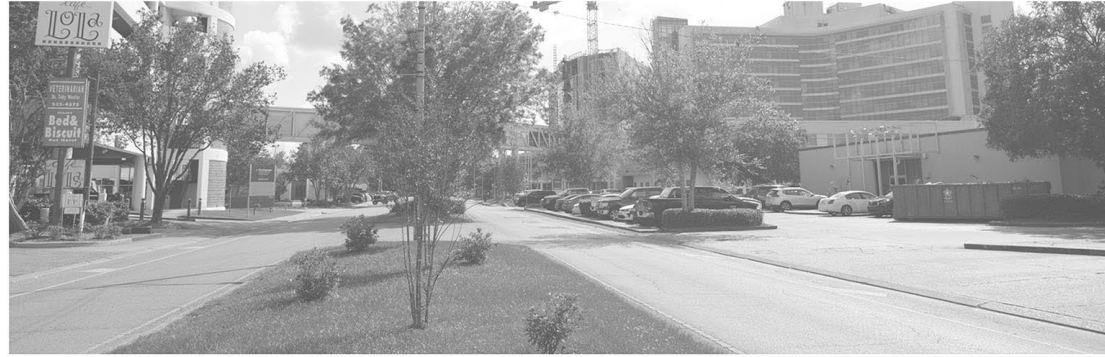
The extensive wayfinding signage system makes use of both color and pattern to support those affected by color blindness.

Consistent with the initial wayfinding system, signage is also bilingual in French and English for linguistic inclusivity and broader awareness of the cultural confluence and history of Lafayette and South Louisiana.



COMPLETE BICYCLE SYSTEM

PHASE 1 IMPLEMENTATION: OIL CENTER



MP-295.11

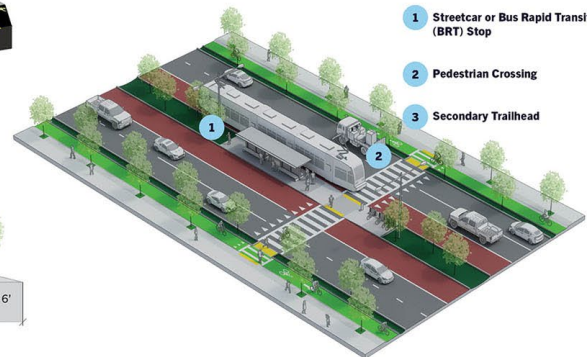
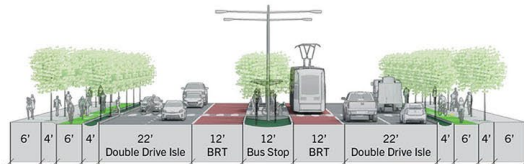
A set of illustrations of the first phase were created over imagery of street typologies.

The unique area of Lafayette's Oil Center District was not conducive to adding separated bike lanes; however, the median provides ample room for a double-track bicycle path and planting.



COMPLETE BICYCLE SYSTEM

PHASE 1 IMPLEMENTATION: CAJUNDOME



MP-295.12

The Master Plan document also planned for future connections and improvements to mass transit.

The street typology that accommodates Bus Rapid Transit lines were explored in detail for the stretch of the first phase that passes the Cajundome.



COMPLETE BICYCLE SYSTEM

PHASE 1 IMPLEMENTATION: DOWNTOWN / W. CONGRESS ST.



MP-295.13

The section of W. Congress Street shown at left is currently an inhospitable barrier between the disadvantaged La Place neighborhood and Lafayette's historic downtown. The street itself adjoins numerous vacant buildings and empty lots.

Strategic planting and shade trees will enhance safety and comfort for bicyclists and pedestrians and encourage the economic development toward and within an underserved area.

The bicycle master plan for Lafayette is a forward-thinking document that provides an implementable plan, the first phase of which is currently in design development. Its strength is found in the community that helped shape it and the community that it will serve.