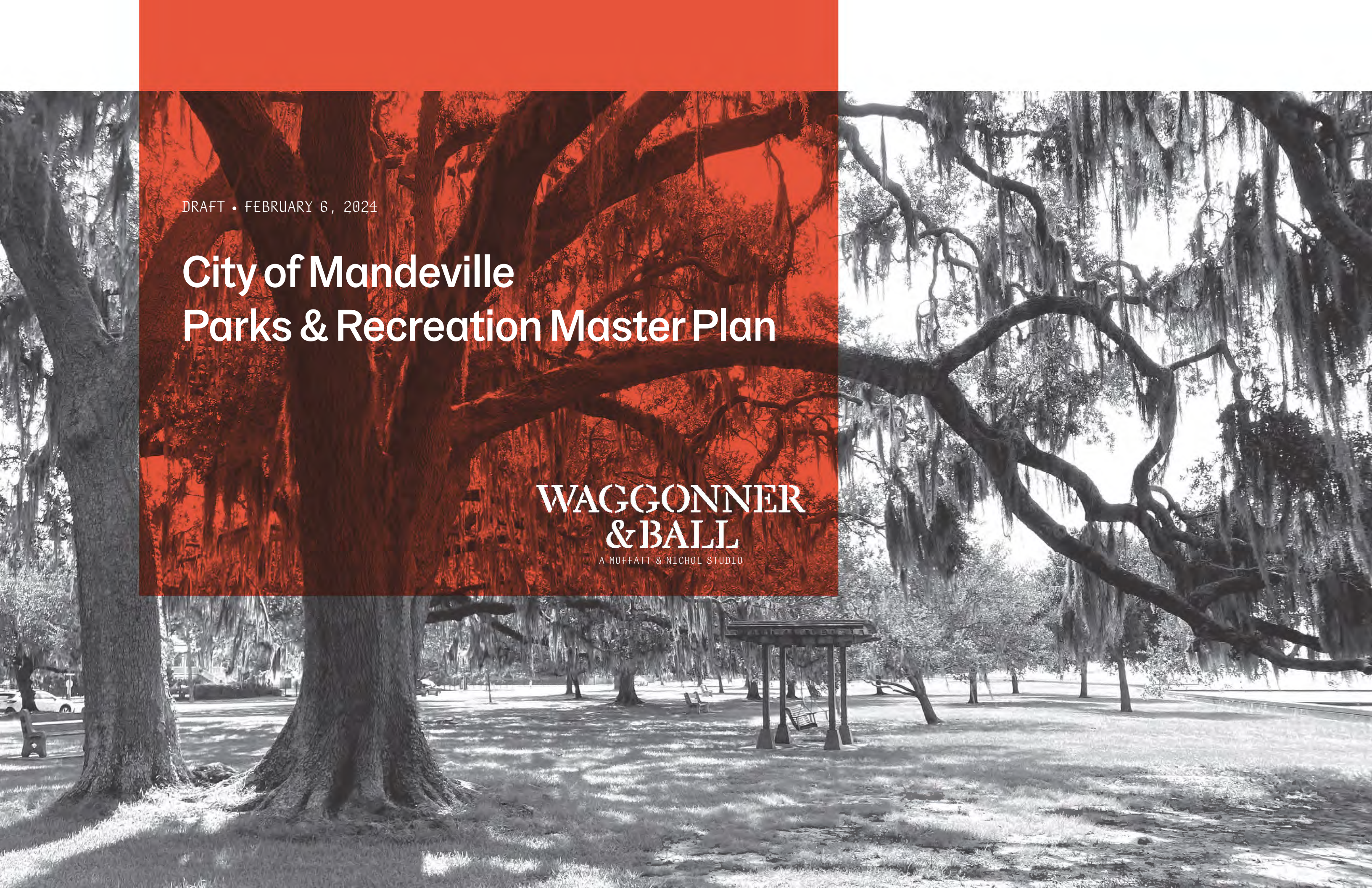


DRAFT • FEBRUARY 6, 2024

City of Mandeville Parks & Recreation Master Plan

WAGGONNER
& BALL
A MOFFATT & NICHOL STUDIO





DRAFT • FEBRUARY 6, 2024

City of Mandeville Parks & Recreation Master Plan

PREPARED FOR

City of Mandeville Planning & Development
3101 East Causeway Approach
Mandeville, LA 70448

PREPARED BY

Waggoner & Ball
2200 Prytania Street
New Orleans, LA 70130

SPECIAL THANKS TO

Mayor Clay Madden
Melissia P. O'Neil, Executive Assistant to Mayor Madden
Cara Bartholomew, Planning & Development Director
Keith LaGrange, Public Works Director
David Lebreton, Jr., P.E., PTOE, PTP, City Engineer
Vaughan Sollberger, Jr., and KVS Architecture
The Residents of Mandeville

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Project Purpose

This master planning document is intended to help the City of Mandeville...

- **Prioritize investments** by identifying and illustrating the most impactful new parks.
- **Strengthen identity** by prioritizing a nature-based approach to park design and maintenance.
- **Increase resilience** by identifying opportunities for stormwater storage, protection of existing lakefront assets, and designing with sustainable materials

Master Plan Goals

1. **Identify and program new City parks** based on opportunity, physical site characteristics, and community needs.
2. **Align with other planning efforts** like the *2023 Mandeville Flood Resilience Strategy* and the *City of Mandeville Pedestrian & Bicycle Plan* to streamline goals, maximize investments, and enhance public spaces.
3. **Reinforce natural systems** such as biodiversity, hydrology, and the urban tree canopy to enhance ecological benefits, increase beauty, and reduce maintenance.
4. **Increase multimodal connectivity** between parks to ensure safety and equitable access.
5. **Position Mandeville to accommodate future** park and public space programming demands.



Assessment

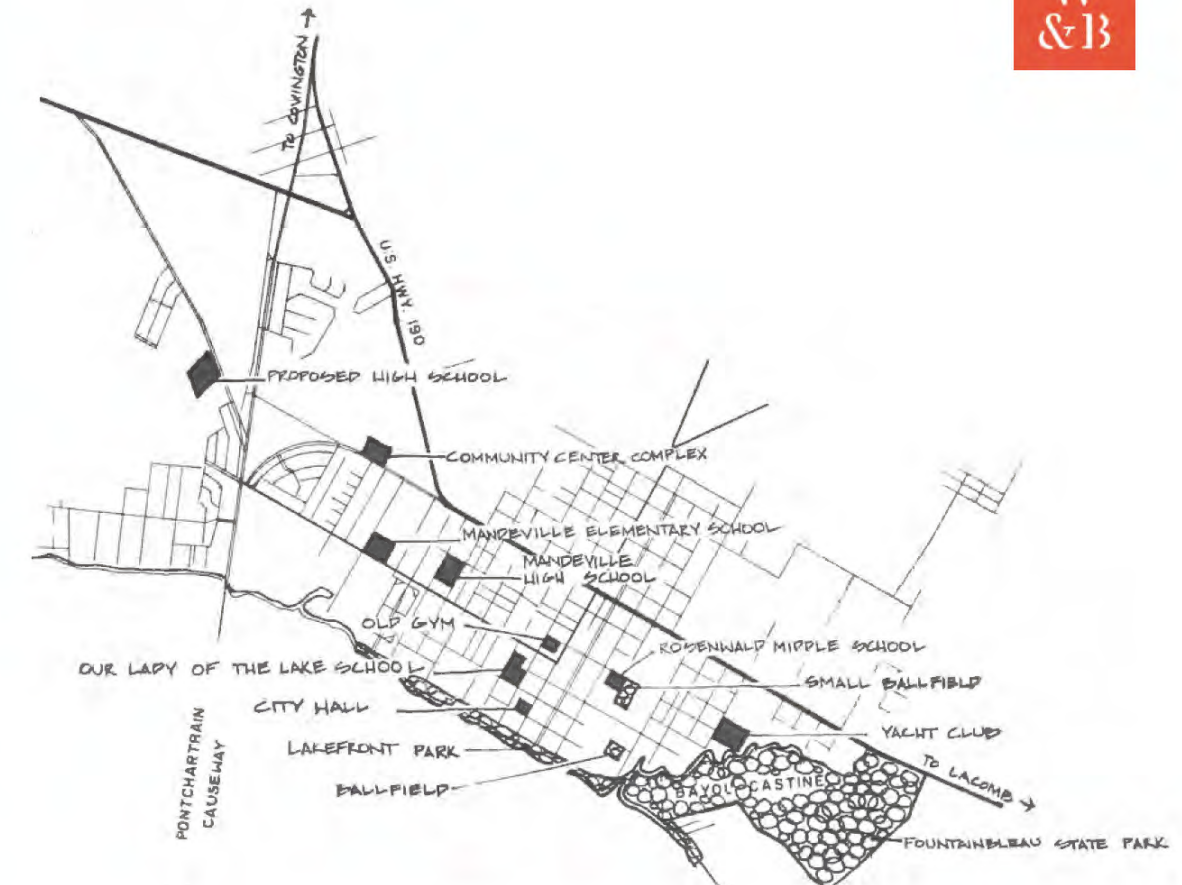
Context

HISTORIC MANDEVILLE

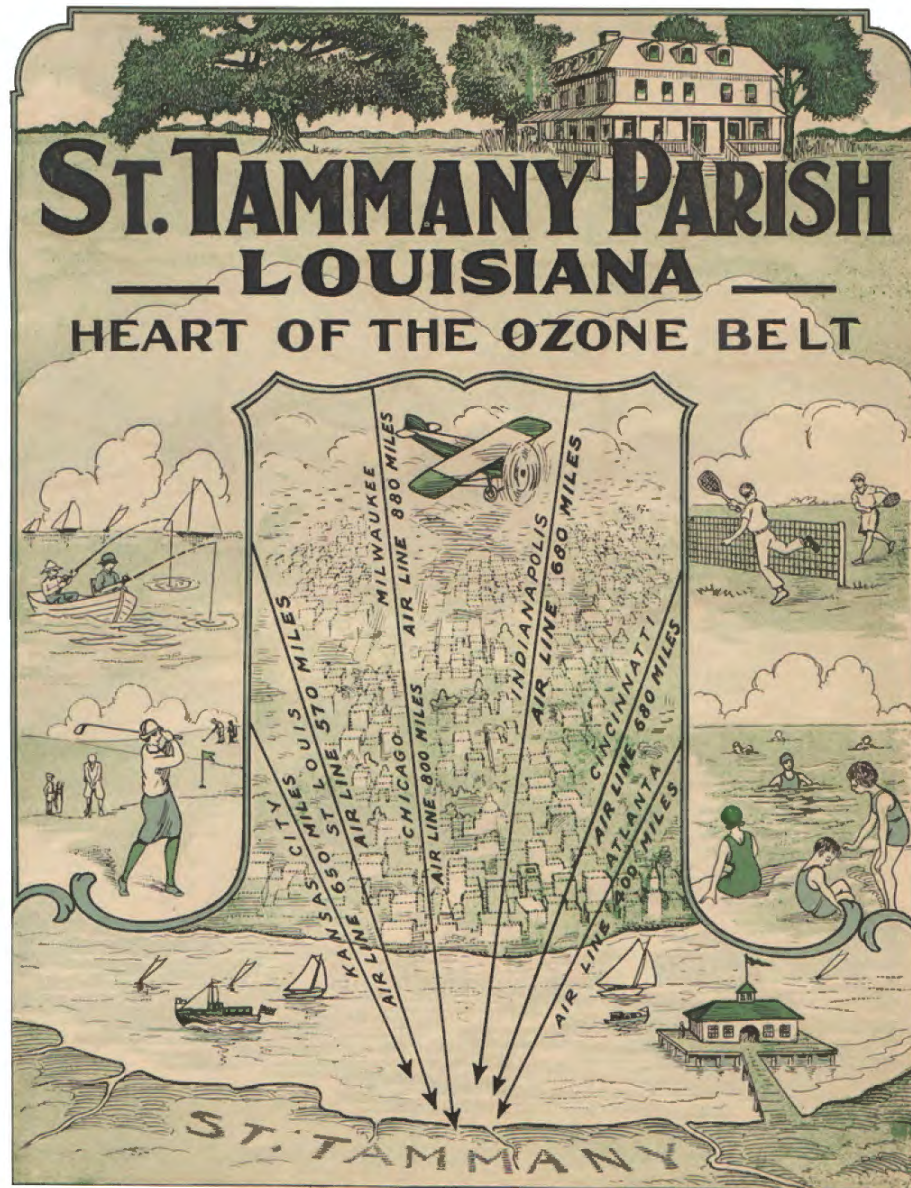
Mandeville has long been recognized as a place of distinct natural beauty in the Gulf South. From early “health tourism” in the early 20th century to nature-based planning trends in the 1970’s to present-day resilience measures, Mandeville has continually been a community where the question of our place in nature is central.



Horseback rider on the Mandeville Lakefront, 1983



Existing recreation facilities in Mandeville from the 1973 St. Tammany Parish Open Space & Recreation Interim Sketch Plan



Early 20th century St. Tammany Parish tourism campaign poster



The Shack, Lake Pontchartrain



Birders on the Lakefront, 1991



Lane Carson & Lynn Mitchell envisioning the Tammany Trace, 1990

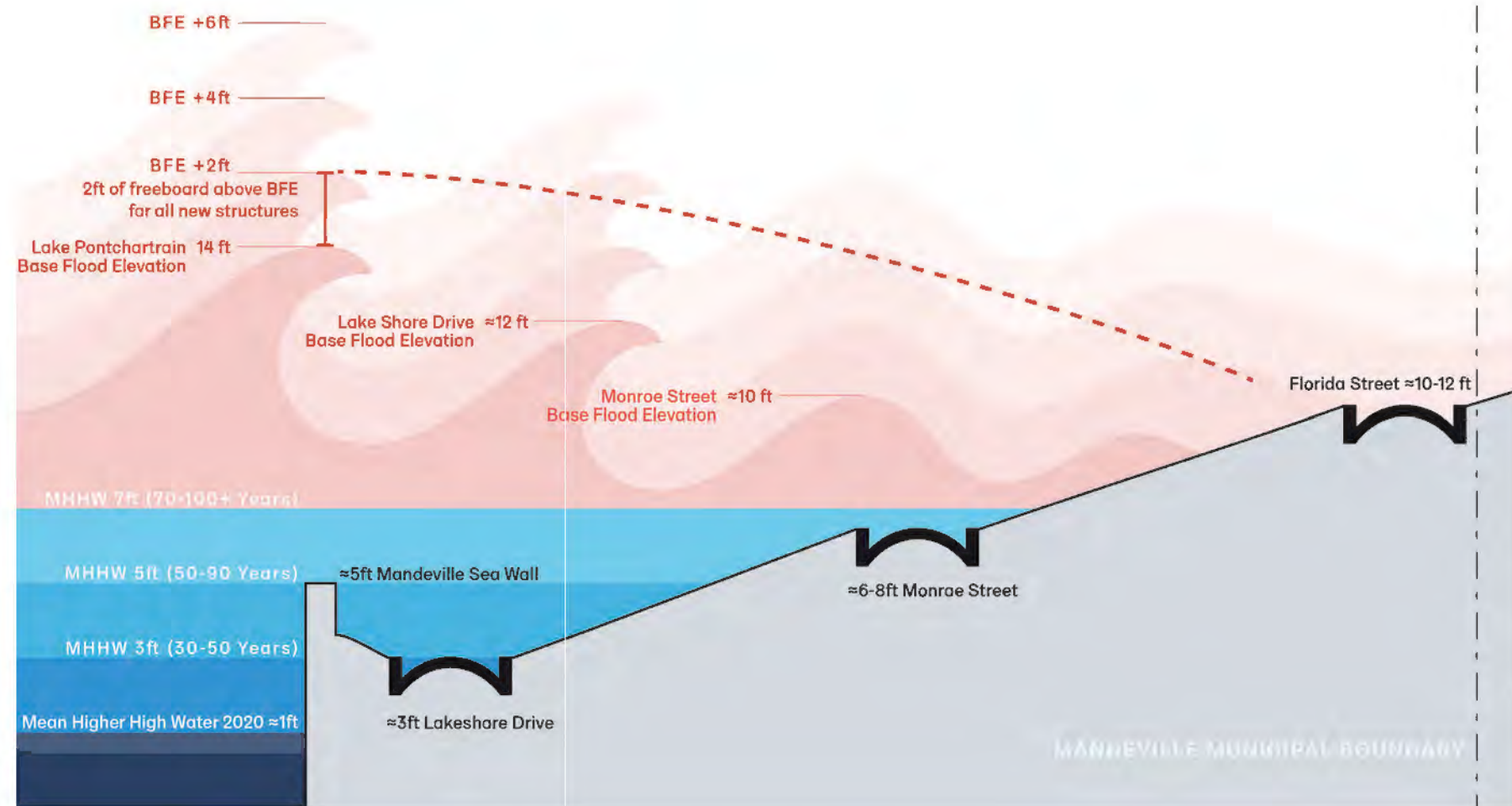
Context



RESILIENCE PLANNING EFFORTS

The 2023 Mandeville Flood Resilience Plan by CSRS with Waggoner & Ball includes a summary of all related resilience planning efforts, including:

- LA SAFE
- City of Mandeville Capital and Operating Budget, 2021-25
- 2017 Louisiana Master Plan for a Sustainable Coast, Coastal Protection & Restoration Authority
- Mandeville Hazard Mitigation Plan Update, 2019
- 2016 City of Mandeville Silver Jackets Status Update, US Army Corps of Engineers
- St. Tammany Parish Coastal Masterplan, 2016-20
- St. Tammany Louisiana Feasibility Study, 2021
- 2019 State of Louisiana Hazard Mitigation Plan
- 2020 St. Tammany Hazard Mitigation Plan
- 2007 City of Mandeville Comprehensive Plan
- Mayor Madden's 2023 Budget Letter



Sea level rise scenarios, excerpt from the 2023 Mandeville Flood Resilience Strategy

OTHER RELATED PLANNING EFFORTS

- 2023 Pelican Park Master Plan by Dana Brown & Associates
- 2022 Mandeville Wetlands Restoration Project by Neel Schaffer
- 1973 St Tammany Parish Open Space and Recreation Interim Sketch Plan by Cashio & Cochran
- 1973 Selection and Analysis of Historic, Archeological and Scenic Areas in St. Tammany Parish by Cashio & Cochran
- 2023 City of Mandeville Pedestrian and Bicycle Plan



Potential stormwater storage sites identified in the 2023 Mandeville Flood Resilience Strategy by CSRS and Waggoner & Ball



Proposed Bike Paths recommended in the 2023 City of Mandeville Pedestrian & Bicycle Plan by Arcadis

Existing Parks

SITE OBSERVATIONS

Mandeville has a strong existing network of parks representing a wide variety of types and uses, from peaceful conservation areas such as Neighborwoods to the active network of open spaces along the lakefront.

The public input received through surveys and in-person workshops is a testament to this: feedback tended toward the next generation of improvements to the park system, such as expanding connectivity, strengthening the urban tree canopy, and leveraging park investments to increase resilience.



Neighborwoods



Mandeville Lakefront



Mandeville Lakefront



Tyler Thomas Park



Sunset Point & Fishing Pier



Mandeville Lakefront

Existing Parks



Park & Green Space Typologies



Active Parks

- Public health
- Identity as a family-oriented community
- Cultural events



Passive Parks

- Public health
- Identity as a place of natural beauty
- Urban heat mitigation



Conservation Areas

- Biodiversity
- Habitat
- Identity as a place of natural beauty



Trails & Connections

- Public health
- Culture of health & recreation
- Community cohesiveness
- Connection to nature



Green Corridors

- Identity as a place of natural beauty
- Habitat & biodiversity



Cultural Sites

- Culture & history
- Community cohesiveness



Residential Lots

- Identity as a place of natural beauty
- Community cohesiveness

Collective Vision

Mandeville /S the Park!

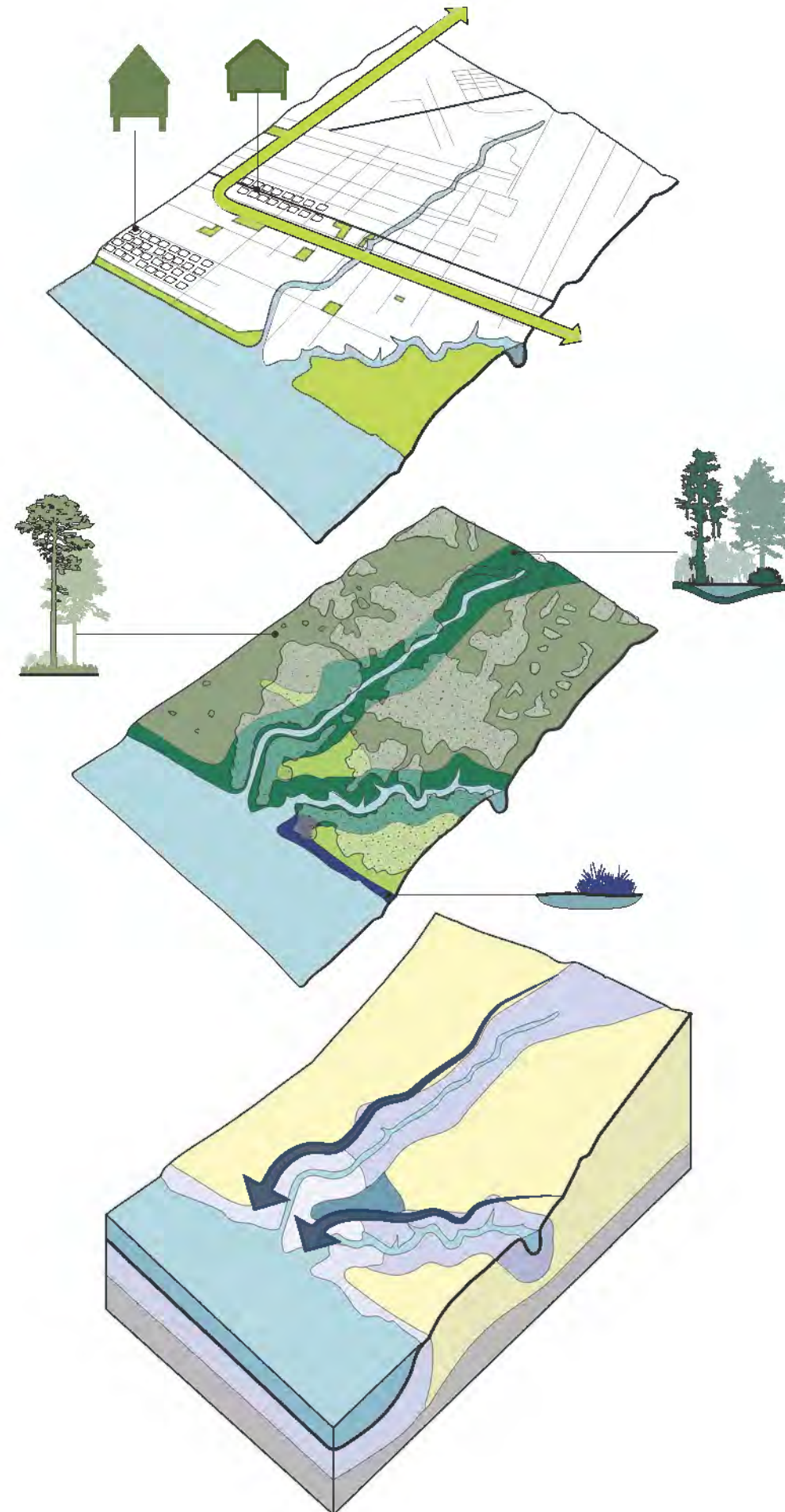
Reconnecting the natural landscape matrix



This map features all existing parks, wetlands, bayou corridors, City- and Parish-owned property, and undeveloped properties.

Layered Planning Approach

This master plan begins with fundamentals of water, land, and ecology. The essential underlying layers of this place can be easily be forgotten, but they tend to be rediscovered: for example, historic waterways make their presence known during flood events. Working with, rather than against, these essential natural systems is in Mandeville’s DNA as a place of natural beauty. Practically, a shared understanding of the native plant communities of this area can help to guide plant selection and programming of new parks and open spaces.



Networks, Systems & Development

- Existing Park System
- Roads
- Bicycle Paths
- Pedestrian Paths
- Landuse
- Buildings

Land & Ecology

- Topography
- Soils
- Plant Communities:
 - Mesic Longleaf Pine Flatwoods
 - Bald Cypress-Tupelo Floodplain Forest
 - Coastal High Salt Marsh

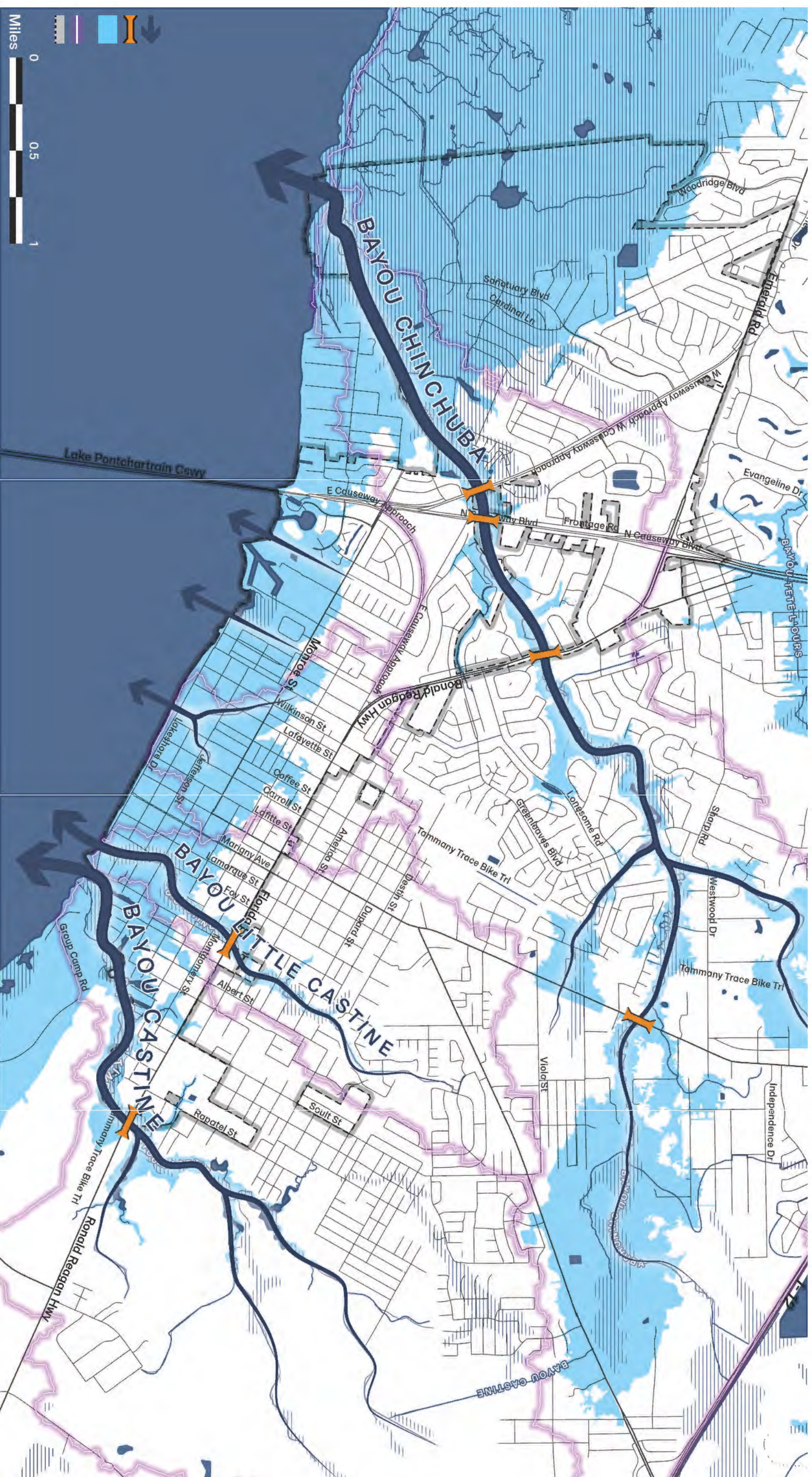
Water

- Historic Bayous
- Lakefront
- Natural Drainage Patterns

Land Surface Elevation



Drainage Patterns



Native Plant Communities



Land Use



Mandeville Mapping: Key Takeaways

Comparing maps of Mandeville’s elevation, drainage, native plant communities, and development, reveals important patterns:

1. Most residential and commercial **development** has occurred and will continue to occur on **higher ground**, which corresponds with the **Longleaf Pine Flatwoods** plant community. Therefore, new development in this planting community should prioritize **native planting restoration** since this ecosystem is most threatened by development.
2. Mandeville’s **historic bayous and wetlands** fall on **lower ground** that is prone to flooding and are **less suitable for development**. Therefore, bayous and wetlands can be treated as **conservation areas**.
3. Conserving and restoring **bayou and wetland ecology benefits all residents of Mandeville**. Bayous and wetlands are **buffers** that can slow, hold, and filter water, which can **lessen the impacts of flooding** and **improve water quality**.



Land Surface Elevation



Native Plant Communities



Hydrology



Land Use

Community Consensus



A survey was hosted online from July 25 to November 3, 2023 to gather public input on current uses and desired improvements to the existing parks system, as well as aspirations for the future. Respondents, largely residents of Mandeville, provided detailed feedback based on deep familiarity with the parks. Most respondents visit a City of Mandeville Park on a weekly basis.

Public Workshop 1

Inventory

August 7, 2023



Public Workshop 2

Analysis

September 26, 2023



Public Workshop 3

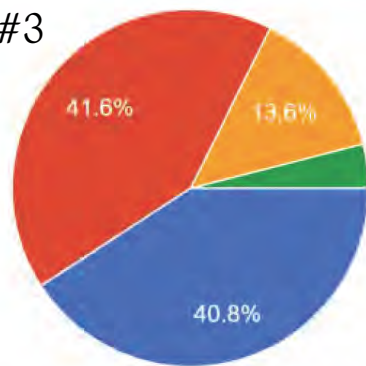
Master Plan Key Projects

December 12, 2023

SURVEY QUESTION #3

How often do you visit City of Mandeville Park Facilities?

- Daily
- Weekly
- Monthly
- Quarterly
- Rarely



Most Common Words used in Public Survey Responses

- | | |
|--------------------------|-----------------------|
| 1. Shade | 14. Bike |
| 2. Restrooms | 15. Picnic |
| 3. Playground | 16. Nature |
| 4. Water | 17. Exercise |
| 5. Love | 18. Lighting |
| 6. Basketball | 19. Views |
| 7. Path, sidewalk, trail | 20. Native |
| 8. Seating | 21. Tennis Courts |
| 9. Walking | 22. Kayak |
| 10. Splash Pad | 23. Wildlife |
| 11. Trees | 24. Pickleball Courts |
| 12. Dog | 25. Swings |
| 13. Beautiful | |

Today

Most common activities in Mandeville parks today

- Walking (71%)
- Biking (57%)
- Community Events (52%)
- Playgrounds (40%)
- Hiking, Running (28%)
- Bird watching (25%)
- Kayaking (19%)

Tomorrow

Residents would like to see more

- Safe Bike & Pedestrian Connectivity
- Native Plants
- Nature Area Access
- Educational Opportunities
- Restrooms & Water Fountains
- Shaded Play Spaces

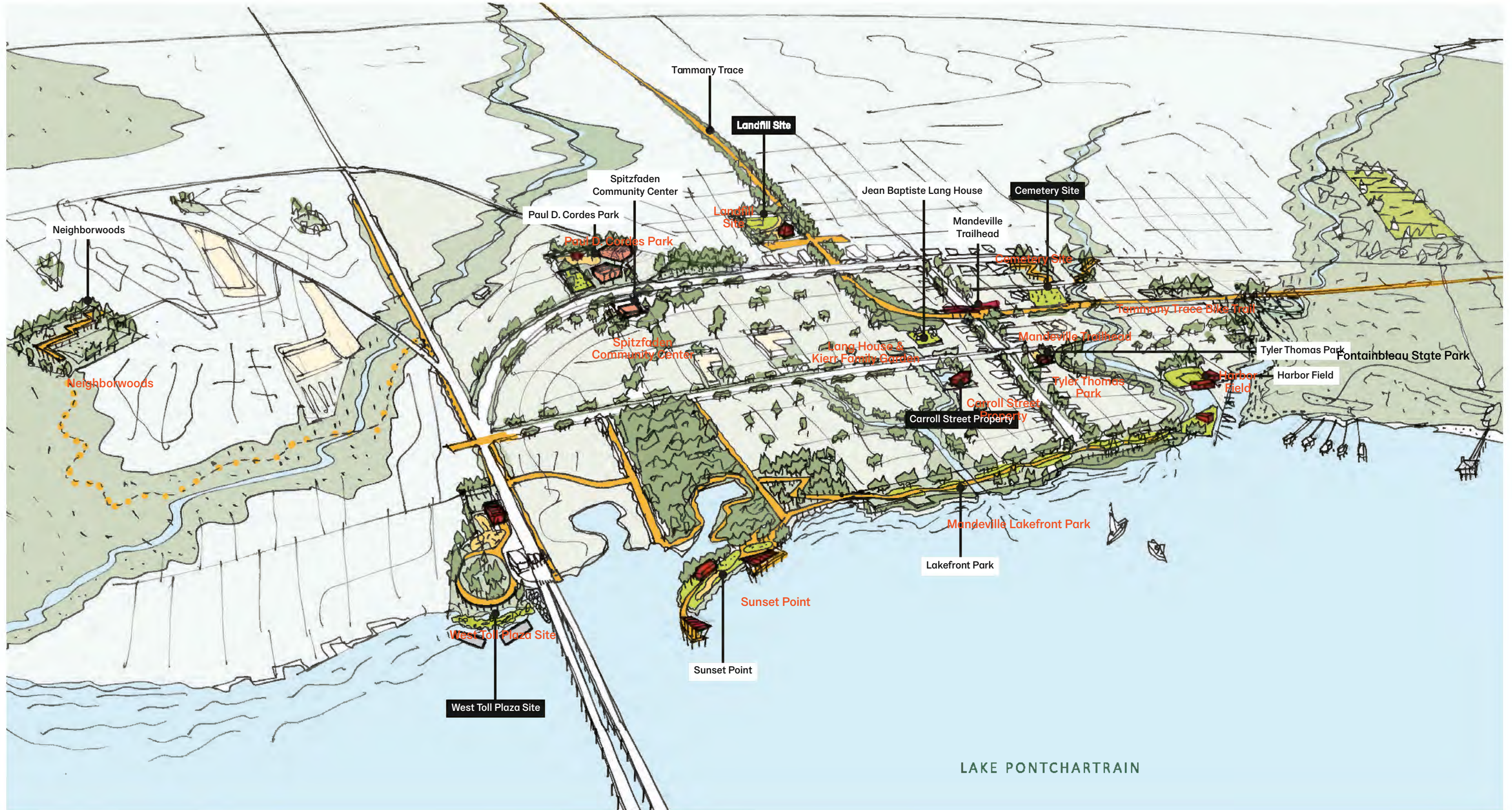
Collective Vision

The Future Mandeville Parks System



Collective Vision

The Future Mandeville Parks System



System-Wide Recommendations



GOALS

1. Identify and program new City parks
2. Align with other planning efforts
3. Reinforce natural systems
4. Increase multimodal connectivity
5. Position Mandeville to accommodate future park needs



OBJECTIVES

Design & Construct Key Projects

This master plan identifies four new parks. From a signature lakefront park to a neighborhood stormwater park with an outdoor classroom, these new parks will enable new experiences and improve connections.

Prioritize Green Infrastructure

A nature-based approach to stormwater management and flood safety is key to both the City's future resilience and its identity as a place of natural beauty.

Create Safe Bicycle & Pedestrian Connections

Mandeville is notable for its existing multi-modal connectivity. Improving key crossings of major roads will further expand opportunities for connecting parks for cyclists and pedestrians.

Plant Native Species

Native species are inherently more resilient and, when planted carefully and in the right place, reduce maintenance. A planting palette based on the underlying ecology of Mandeville can help guide plantings, particularly in places that contribute to Mandeville's identity as a place of natural beauty, such as roadside buffers and medians.

Support the Urban Forest

"More shade" was a leading survey response. Mandeville has a significant existing tree canopy, but this should not be taken for granted: the urban forest is threatened by development and increasingly strong and frequent storms. A reforestation plan, tree tagging program, and tree succession plan for significant individual trees would help to maintain Mandeville's urban forest for future generations.

Develop a User Experience Plan

Consistent and recognizable site elements can unify existing and new parks.

- Educational Signage
- Public Art Installations
- Seating

Key Future Projects



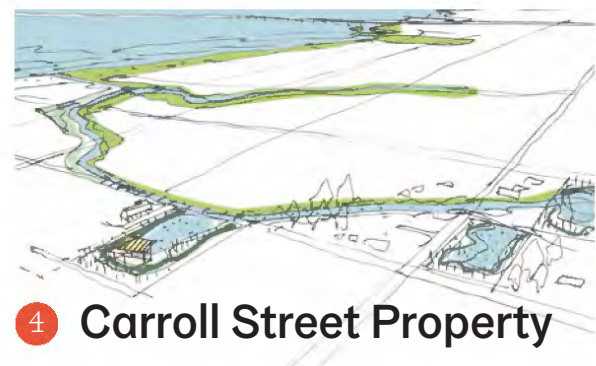
1 Landfill Site



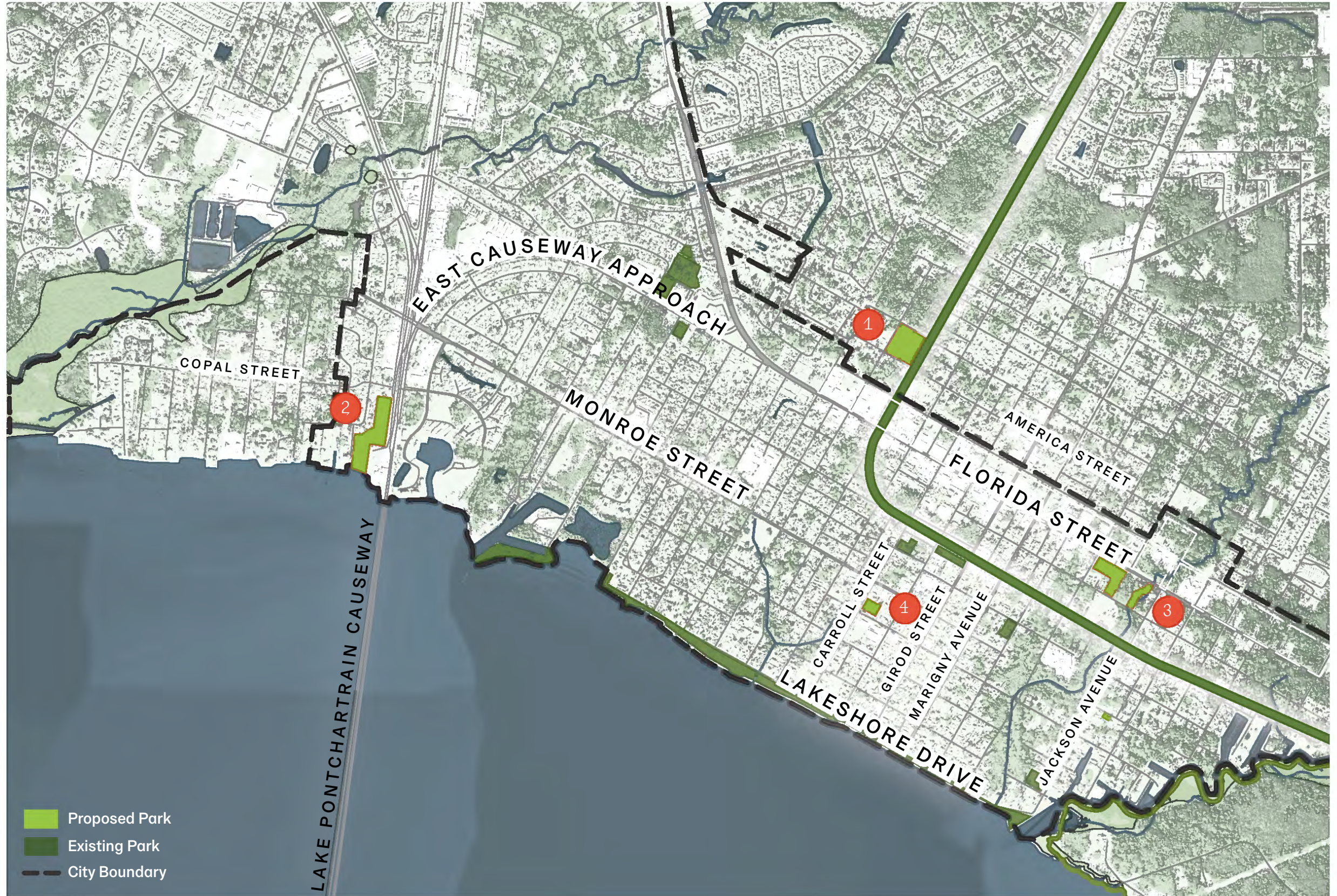
2 West Toll Plaza Site



3 Cemetery Site



4 Carroll Street Property



Landfill Site



EXISTING SITE CHARACTERISTICS

Location: America St., Lafayette St. & The Tammany Trace

Size: 6.3 acres

Description: The former City dump, this site is an unusual property in that it is non-contiguous with the majority of the City of Mandeville. However, it is adjacent to the St. Tammany Trace and near the underpass that allows for safe crossing underneath Florida Street. This is a prime opportunity to forge key connections: this new investment would connect Mandeville's parks to the regional asset of the Trace, connect underserved neighborhoods north of Florida Street to the Trace, and connect the City of Mandeville to a global trend in converting former landfills to next-generation urban parks.



Informal connection between the landfill site and the Tammany Trace



View of landfill elevation from America Street

Landfill Site

Context & Analysis



Mandeville Mayor Ray Foil at the landfill in 1983. Mayor Foil hoped the site would one day become a recreational area. The landfill has since been capped and approved by the LDEQ for development, and is finally ready to become a park that serves the people of Mandeville.

SCALE COMPARISON



Landfill Site



Harbor Field

NOTES

As a full city block, the landfill site is slightly larger than Harbor Field. This new park could accommodate a practice field to accommodate high demand for the newly improved Harbor Field.

Landfill Site

Conceptual Design



PROGRAMS

- Baseball Field
- Phytoremediation
- Nature Play Destination Playground

AMENITIES

- Restrooms
- Shade & Seating
- Educational Signage

CONNECTIONS

- Tammany Trace
- Neighborhood to East and West



Gathering Place Riverfront Park
Tulsa, OK



Washington Park Environmental Education Center
Seattle, WA



Freshkills Park
Staten Island, NYC



Wildflower Meadow
New Orleans City Park



Sunflowers
Helianthus annuus

Landfill Site

Sustainable Landscape Design Precedents



KEY DESIGN TERMS

Bioretention Swale: A bioswale is a linear depression in the landscape constructed to slow and filter stormwater. Graded sides allow plantings along the edges, helping to remove silts, pollutants, and pathogens, and reduce the total amount of runoff from a site. Bioswales can be constructed on a property to slow and store water before it enters the drainage system or adjacent properties.

Landfill Cap: An impermeable cover over a landfill that isolates contaminants and keeps them in place to avoid their spread by rain and wind. Landfill cap designs vary and could include layers of clay, asphalt, geotextiles, soils, and vegetation. (EPA, A Citizen's Guide to Capping).

Native Planting: Using vegetation that is native to a region, or adaptive to future conditions such as rising water levels or saltwater, is an alternative to a conventional grass lawn. Native or adaptive planting requires less maintenance and less water for irrigation, and provides important habitat. Vegetation can also slow and filter water.

Nature Play: Natural play refers to interacting with natural elements of the environment in an imaginative way. Broadly, natural play includes activities such as climbing trees, building dens, and cooking outdoors. Designed spaces may include a mix of natural and manmade elements and should be made from natural materials as much as possible (Land8).

Phytoremediation: Uses plants to clean up contaminated environments. Certain plants are able to remove or break down harmful chemicals from the ground when their roots take in water and nutrients from the contaminated soil, sediment, or groundwater. (EPA, A Citizen's Guide to Phytoremediation).



Berm with Benefits
San Antonio, TX, Teneyke Landscape Architects



Bioretention Swale
Chackbay, Louisiana



Landfill Cap
Freshkills Park, Staten Island, NY



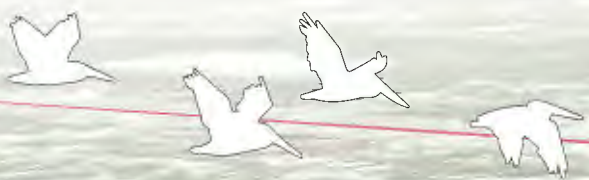
Native Planting
New Orleans City Park



Nature Play
Lafayette, LA



Phytoremediation
Garraf Landfill Restoration, Barcelona, Spain



AMERICA STREET CONNECTION

FLORIDA STREET

Baseball Field

Ravine aux Coquilles

Nature Play

Public Restrooms

Multipurpose Lawn

Bioretention Swale

Native Planting

TAMMANY TRACE

Meadow Trail

Landfill Site

Conceptual Design

West Toll Plaza Site

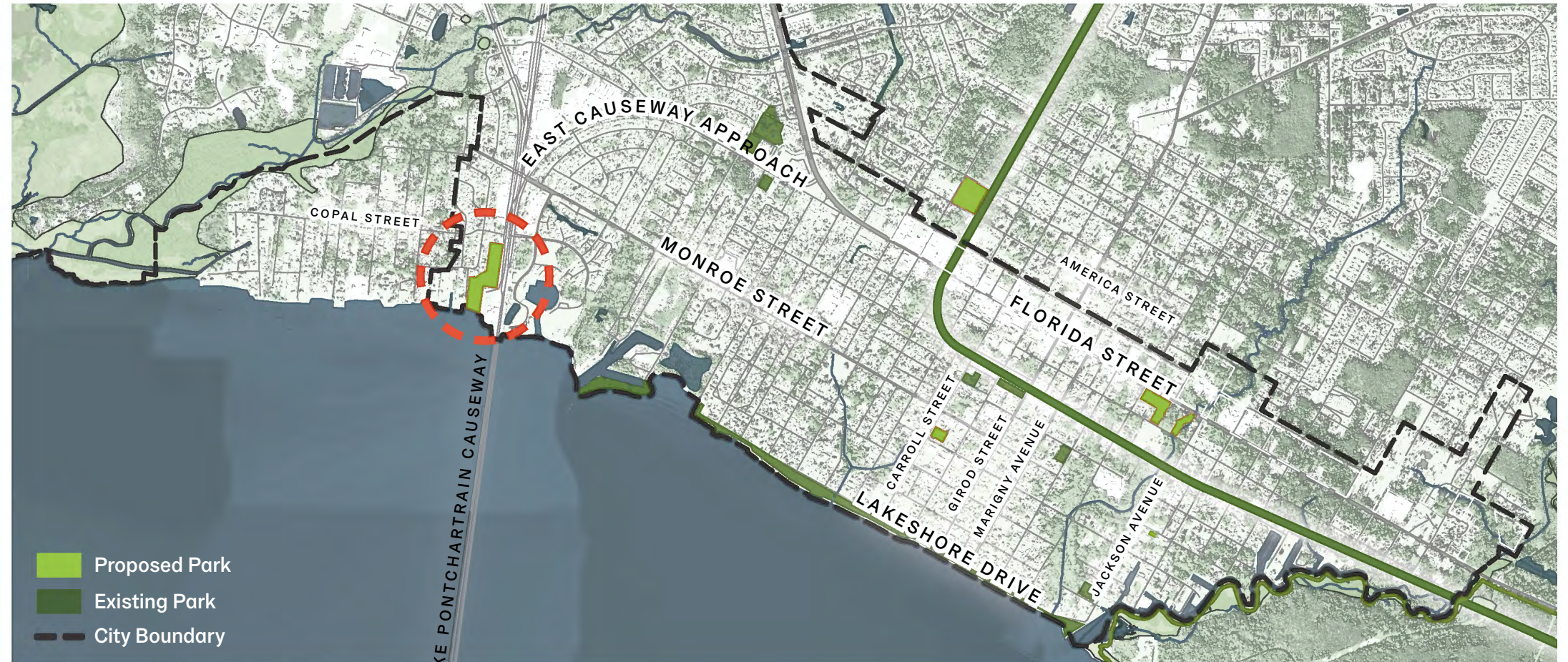


EXISTING SITE CHARACTERISTICS

Location: 0 North Causeway Blvd, Mandeville, LA 70448

Size: 8 acres

Description: Newly acquired by the City of Mandeville, this parcel is well positioned to join Neighborwoods as an “anchor park” for the area of Mandeville west of the Causeway. The development pattern of the west side of Mandeville is characterized by subdivisions and a privatized lakefront. Compared to the historic east side of the City, which is characterized by a more legible urban street grid punctuated by historic bayous, there are less opportunities for new parks within the existing urban fabric on the west side. Consolidating investment in this signature lakefront park makes good use of this vacant parcel. This master plan recommends that additional parcels on the west side should be identified in the future.



View of the site shoreline from the toll plaza



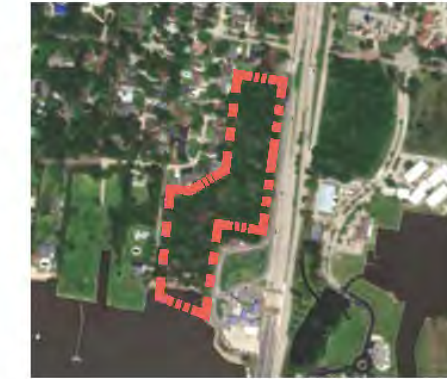
View of the north end of the site from Copal Street

West Toll Plaza Site

Context & Analysis



SCALE COMPARISON



West Toll Plaza



Sunset Point

A PARK FOR THE WEST SIDE

Slightly larger than Sunset Point, the West Toll Plaza site is oriented in a more north-south direction, which suggests two complementary identities within a single park: a neighborhood-facing high side and a lake-facing low side.

HISTORIC SHORELINE



USGS, 1935

West Toll Plaza Site

Conceptual Design



PROGRAMS

- Destination Playground
- Nature Trail
- Living Shoreline & Marsh Creation
- Environmental Education Signage
- Public Art

AMENITIES

- Activity Building
- Parking Forest
- Restroom, Water Fountains
- Seating



Gretna City Park
Gretna, LA



Mountain Creek Park
Lake Norman, NC



Louisiana Children's Museum
New Orleans, LA

CONNECTIONS

- Monroe Street to East
- Kayak Trail to Sunset Point
- North into West Mandeville neighborhoods



Ohio Creek Neighborhood Resilience
Norfolk, VA



Children's Hospital Campus
New Orleans, LA

West Toll Plaza Site

Existing Shoreline Condition



This site has several special features including beautiful views of the lake. Ecologically, the site is notable because it spans two plant communities: Longleaf Pine Flatwoods and High Salt Marsh. Given its ecological importance and sensitivity, this site could serve as an excellent demonstration site for sustainable landscaping and coastal restoration through living shoreline practices. Currently the site's dense vegetation and topography make it inaccessible but park design provides an opportunity to connect the people of Mandeville to their natural environment.



VIEWS OF LAKE AND SUNSET

PRIVATE LAKE ACCESS BEYOND

DEBRIS

INACCESSIBLE NARROW BEACH



Existing site from Causeway Service Road at Toll Plaza

West Toll Plaza Site

Sustainable Landscape Design Precedents



KEY DESIGN TERMS

Breakwaters: offshore structures intended to break waves, reducing the force of wave action, which both reduces the severity of coastal erosion and encourages sediment accretion.

Constructed Wetlands: Constructed wetlands use natural processes involving wetland vegetation, soils, and associated microbial systems to slow, store, and clean stormwater. They also create habitats that can support a wide range of plants and animals.

Living Shoreline: Living shorelines are coastal edges that incorporate a combination of reefs, breakwaters, maritime or coastal forests, shrub communities, and fresh and tidal wetlands to reduce wave action and erosion while also providing resilience and habitat restoration benefits. Living shorelines generally involve a long, gentle slope from the subtidal zone into the maritime and coastal forest zone.

Marsh Creation: Marsh creation establishes or restores wetlands in open water areas such as bays, ponds, and canals. The process involves sediment dredging and placement to create new wetlands. Wetlands and marshes clean water, serve as natural storm buffers, improve regional ecology, provide recreational and economic opportunities, and strengthen a region's hurricane defenses.

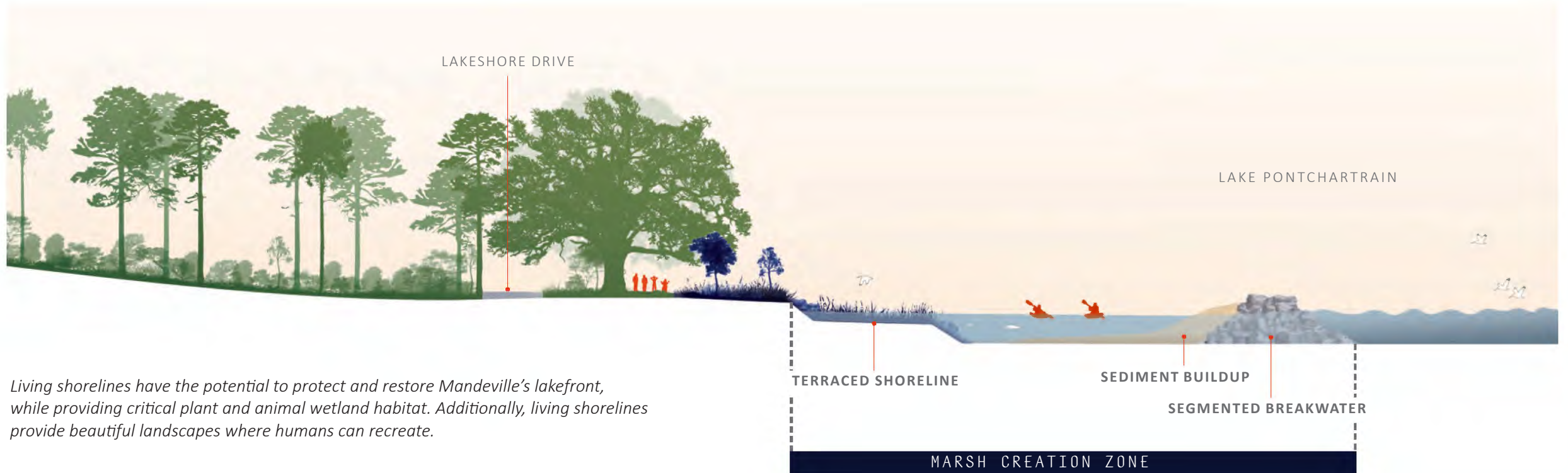
Shoreline Protection: Shoreline protection methods protect, preserve, and restore bay, lake, or coastal shorelines from wave energy. Methods include concrete, large stones, seawalls, breakwaters, jetties, or other hard materials to attenuate wave action. Replenishing sand, wave screens, submerged breakwaters, and floating breakwaters are newer shoreline protection methods that are designed to be visually attractive and allow water and fish to pass through them.



Cox Point Park
Backriver, MD



Lightning Point
Bayou La Batre, AL



Living shorelines have the potential to protect and restore Mandeville's lakefront, while providing critical plant and animal wetland habitat. Additionally, living shorelines provide beautiful landscapes where humans can recreate.

West Toll Plaza Site

Sustainable Landscape Design Precedents



KEY DESIGN TERMS

Parking Forest: A parking forest is an alternative design to a conventional parking lot. Design includes natural systems such as native trees and vegetation to slow and filter stormwater. Parking forests feature *trees*, and may also feature *permeable interlocking pavers*, or *porous asphalt or concrete*.

Parking Garden: A parking garden is an alternative design to a conventional parking lot. Design includes natural systems such as vegetation to slow and filter stormwater. Parking gardens may also feature trees, permeable interlocking pavers, or porous asphalt or concrete.

Permeable Pavers: Permeable pavers are durable fired clay units constructed with open, permeable areas between units. Using a permeable material for walkways, roadways, and parking lots allows stormwater to be absorbed by the ground where it falls, reducing runoff into the drainage system. Permeable pavers are best suited for areas with slow vehicular traffic, such as parking.

Porous Asphalt and Concrete: Porous pavement is constructed with an open-graded surface over a subsurface gravel bed, allowing stormwater to infiltrate into the soil beneath the pavement. Materials for walkways, roadways, and parking lots that allow stormwater to be absorbed by the ground where it falls, reducing runoff into the drainage system. As with permeable pavers, porous pavement is best suited for areas with slow vehicular traffic.



Parking Garden
Beacon, NY



Permeable Pavers
Virginia Beach, VA



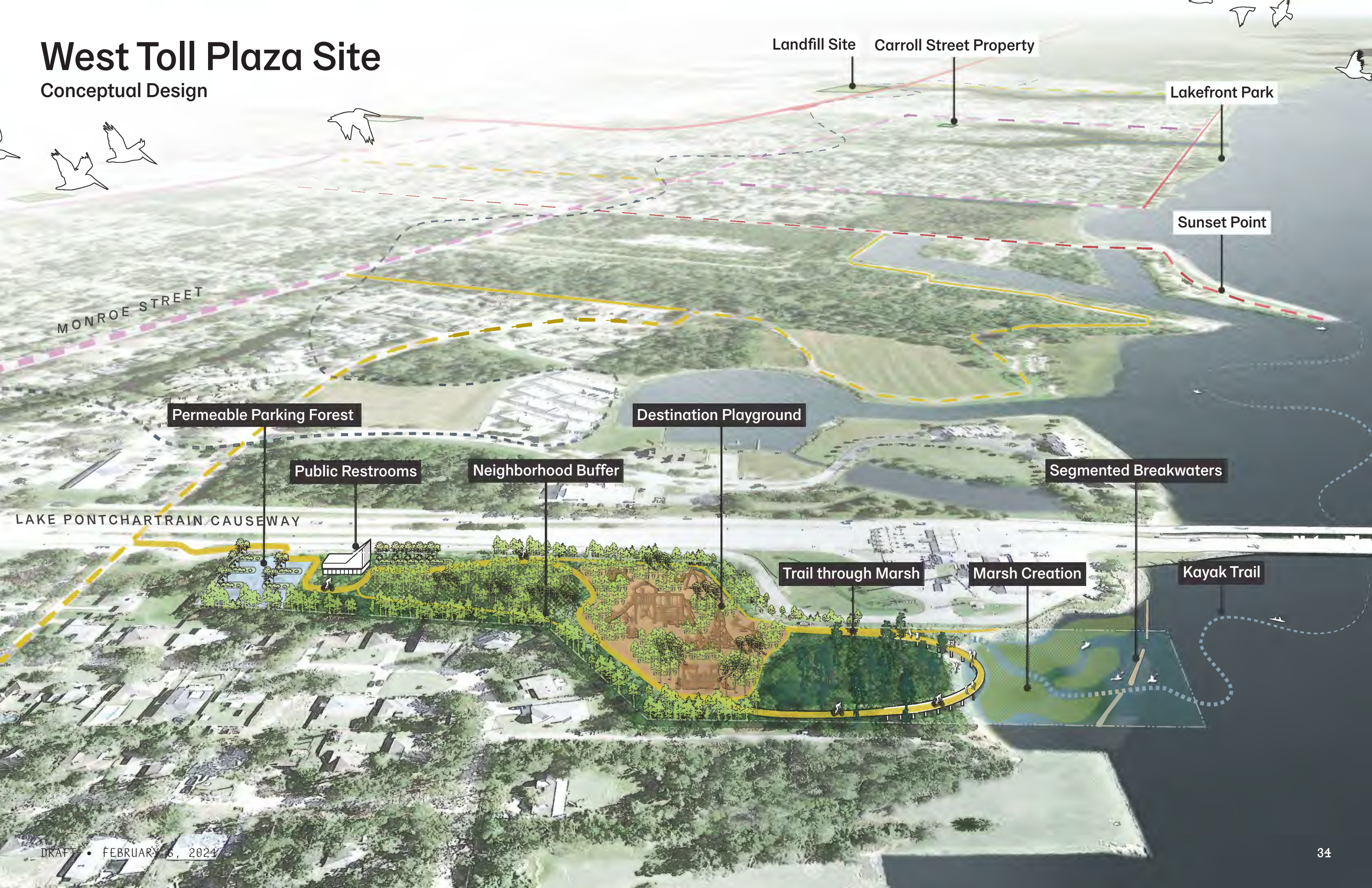
Parking Forest
Charleston, SC



Porous Pavement
New Orleans, LA

West Toll Plaza Site

Conceptual Design



Landfill Site

Carroll Street Property

Lakefront Park

Sunset Point

MONROE STREET

Permeable Parking Forest

Destination Playground

Public Restrooms

Neighborhood Buffer

Segmented Breakwaters

LAKE PONTCHARTRAIN CAUSEWAY

Trail through Marsh

Marsh Creation

Kayak Trail

Cemetery Site

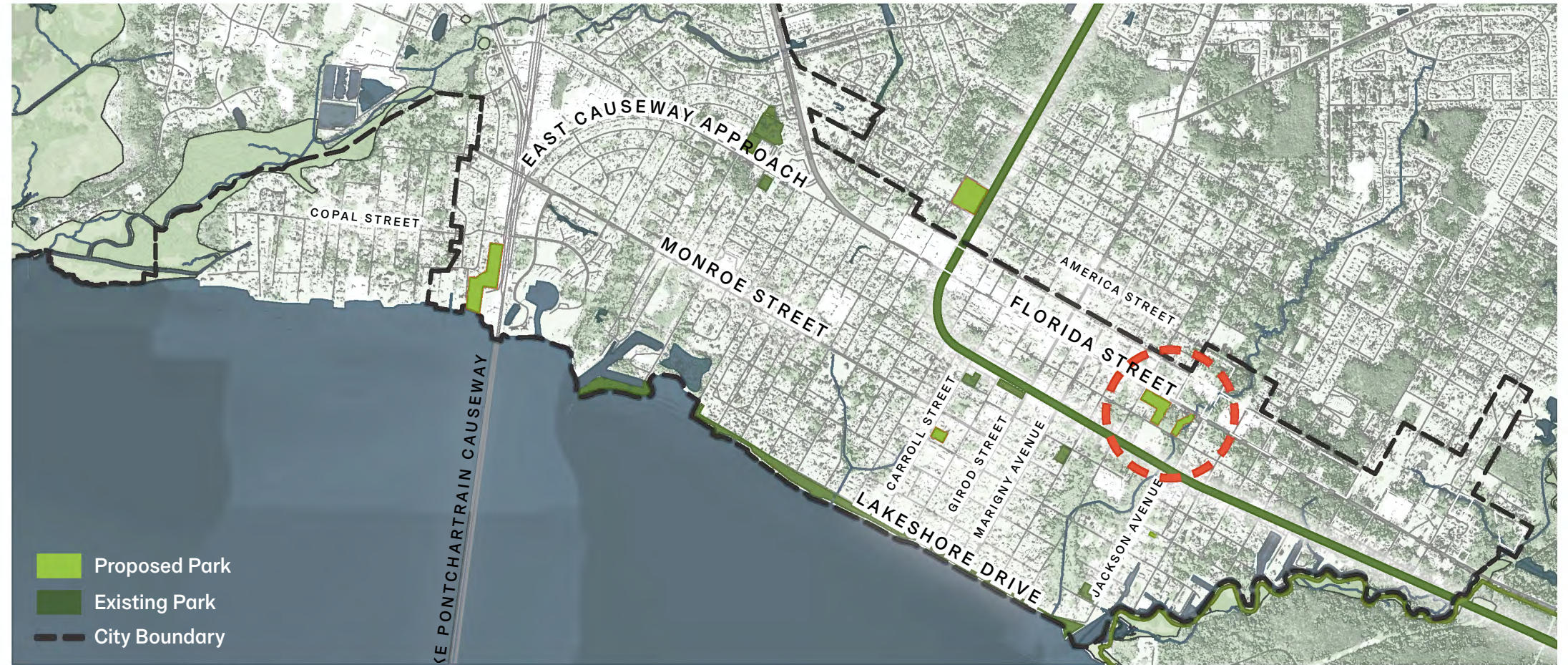


EXISTING SITE CHARACTERISTICS

Location: Florida, Foy, Montgomery & Jackson Streets

Size: 6 acres

Description: This potential park is emblematic of many vacant flood-prone parcels adjacent to the historic bayous that weave through Old Mandeville. As a conservation area, this park need not be overbuilt. A simple boardwalk trail connecting Montgomery Street, where Little Bayou Castine crosses underneath via triple concrete culverts, to the existing pedestrian and bike path on Jackson Street could be the first phase of a future Bayou Trail: additional strategic property acquisitions by the City could eventually connect Florida Street to the Lakefront along Little Bayou Castine.



View of the site from Montgomery Street facing South



View of Little Bayou Castine from Montgomery Street facing North

Cemetery Site

Context & Analysis



SCALE COMPARISON



Cemetery Site

Neighborwoods

NOTES

These parcels share characteristics of Neighborwoods, but are much smaller and not yet contiguous.

HISTORIC BAYOU CORRIDOR



USGS, 1935

Cemetery Site

Conceptual Design



PROGRAMS

- Nature Trails
- Water Quality Monitors
- Educational Signage

AMENITIES

- Seating
- Boardwalk

CONNECTIONS

- Historic Bayous to Lakefront
- Mandeville Cemetery
- Jackson Avenue Bike Path



Neighborwoods
Mandeville, LA



Jean Lafitte Barataria Preserve
Jefferson Parish, LA



Gretna City Park
Gretna, LA



Cemetery Site

Sustainable Landscape Design Precedents



KEY ECOLOGICAL TERMS

Bayou: a slow-moving creek or swampy body of water, which may be brackish (mixed fresh- and saltwater) and home to a rich diversity of wildlife. Bayous are often associated with the Southeastern part of the United States and can be found throughout coastal Louisiana

Floodplain: an area of typically flat land that is susceptible to inundation by water from any source. Floodplains are typically fertile agricultural areas as a result of nutrient-rich sediments deposited by floodwaters

Slow, Store, Drain: a new approach to stormwater management: : slow water as it hits the ground, create spaces in the city to store water and use it as a resource, and drain using pumps only as a last resort to prevent flooding

Swamp: a shallow body of water and wetland habitat, typically dominated by woody vegetation such as cypresses. Swamps have highly organic soils that provide a nutrient rich environment for the growth of a variety of water tolerant species of flora and fauna.

Wetlands: ecosystems that are saturated with water, including bottomland hardwood forests, swamps, marshes, and bayous. Wetlands are natural storm buffers that store and filter runoff. They are also habitats that support hundreds of thousands of species of plants and animals as well as myriad fishing, hunting, agriculture, and recreational uses. Much of coastal Louisiana's natural ecosystems are comprised of wetlands.



Mandeville's historic bayous carry much of the city's drainage. Conserving these corridors is vital for storm water management and improving water quality.



The rich and biodiverse plant life along Mandeville's historic bayou corridors reciprocally helps filter runoff and slow and hold flood waters.



LONGLEAF PINE WOODLAND

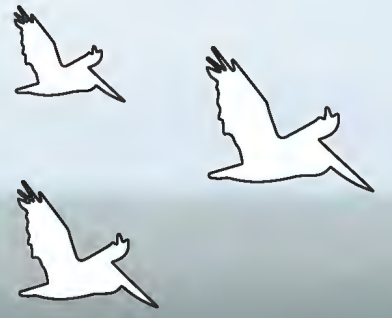
FLOODPLAIN FOREST

BAYOU

Bayou Buffer. Floodplain forests are located along Mandeville's historic bayous and slow, hold, and filter water, providing flood protection to upland development.

Cemetery Site

Conceptual Design



Carroll Street Property



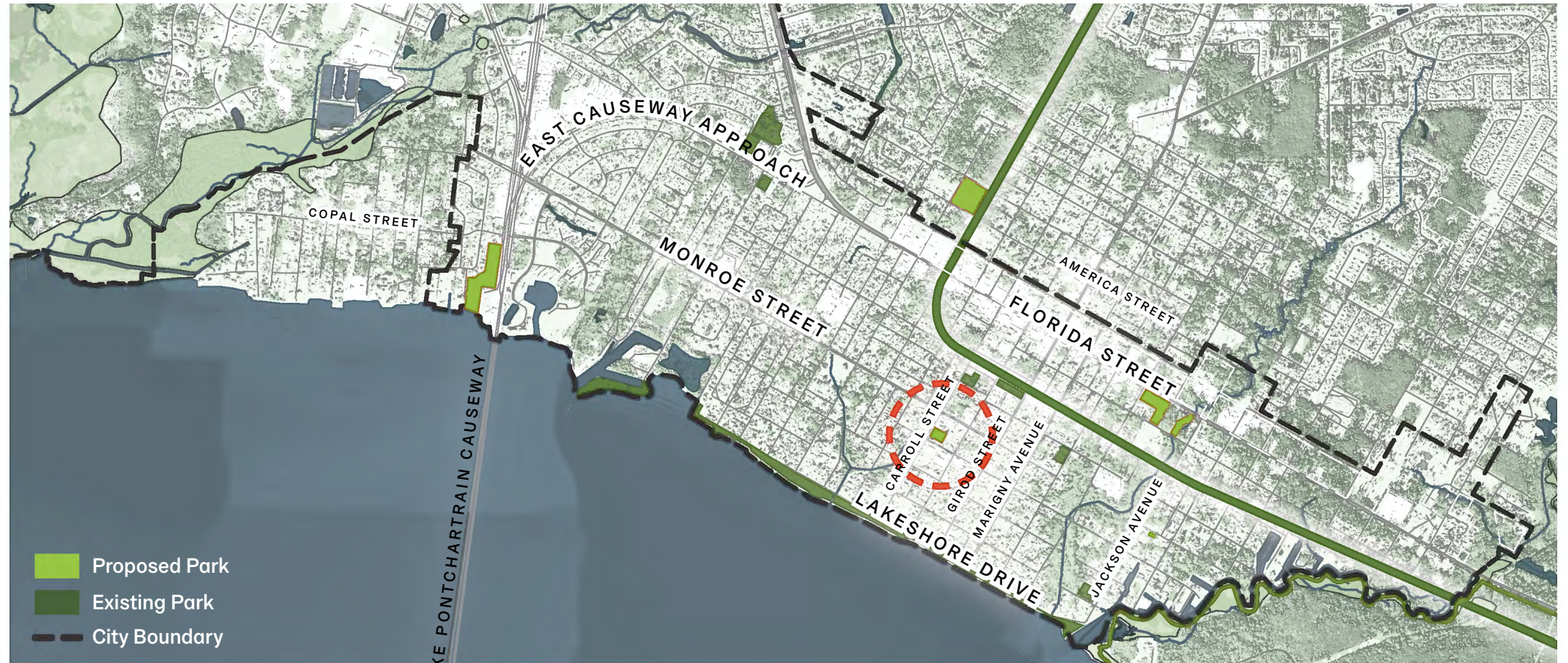
EXISTING SITE CHARACTERISTICS

Location: Carroll St., Mandeville, LA 70448

Size: 1 acre

Description: Located just upstream of where Ravine aux Coquilles disappears into an underground culvert, the Carroll Street property is a site of frequent flooding. Re-naturalizing this relatively small property is a big idea: restoring the natural flow of the historic bayous is a key initiative of this master plan.

This site's proximity to a school, position within a walkable neighborhood, and location at the approximate halfway point between the lakefront and the relative high ground of Florida Street make this a prime opportunity for a community-oriented stormwater park. Strategic cut and fill of this site will add both stormwater storage capacity and space for water from Ravine aux Coquilles during storm events. Developing this site into a neighborhood-scale park leverages previous City investments in two nearby parcels adjacent to the Ravine. Though these nearby parcels are smaller, they are well positioned for additional storage capacity of stormwater.



Ravine aux Coquilles channelized underneath Carroll Street



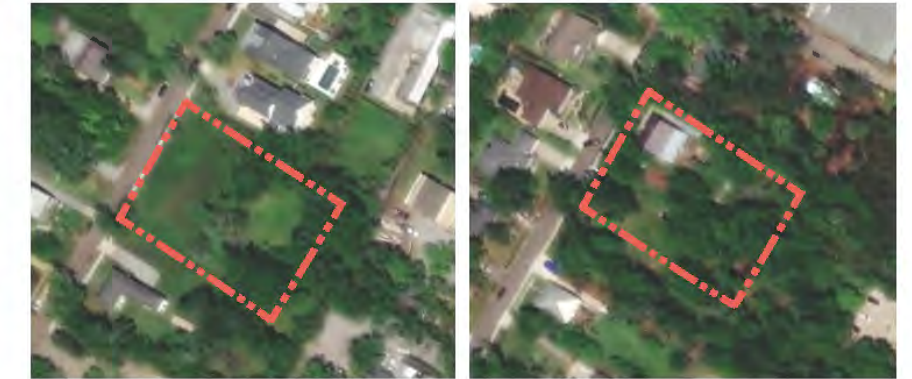
Ravine Aux Coquilles drainage pipe inflow & outflow on site

Carroll Street Property

Context & Analysis



SCALE COMPARISON



Carroll Street Property

Jean Baptiste Lang House

NOTES

Not quite a full city block, the Carroll Street property is similar in scale to the nearby Lang House in Old Mandeville.

HISTORIC BAYOU CORRIDOR



USGS, 1935

Carroll Street Property

Context & Analysis



BAYOU PATH



Carroll Street Property

Conceptual Design



PROGRAMS

- Planted Bioswales
- Demonstration Gardens
- Educational Stormwater Signage
- Outdoor Classroom
- Dry Stormwater Detention Area

AMENITIES

- Permeable Paver Areas
- Pavilion
- Seating

CONNECTIONS

- Ravine aux Coquilles Corridor



Gretna City Park
Gretna, LA



Gretna City Park
Gretna, LA



Gretna City Park
Gretna, LA



Gretna City Park
Gretna, LA



Gretna City Park
Gretna, LA



Gretna City Park
Gretna, LA

Carroll Street Property

Sustainable Landscape Design Precedents



KEY DESIGN TERMS

Bioretention Swale: A bioswale is a linear depression in the landscape constructed to slow and filter stormwater. Graded sides allow plantings along the edges, helping to remove silts, pollutants, and pathogens, and reduce the total amount of runoff from a site. Bioswales can be constructed on a property to slow and store water before it enters the drainage system or adjacent properties.

Dry Detention Basin: A structured dry detention basin is a depression the landscape that is designed as a basin for storing stormwater during wet conditions, while doubling as a place for recreational activities during dry conditions. Stormwater is detained temporarily after a rainstorm, and can infiltrate soils or slowly discharge into the drainage system.

Improved Waterway: Existing waterways, such as canals, creeks, or bayous, can be modified to improve stormwater management. Waterways can be redesigned to store a greater amount of water, clean water, provide habitat, create recreation with access to water, and be more aesthetically appealing.

Rain Garden: A rain garden is a shallow, excavated basin that slows, temporarily stores, and also cleans stormwater runoff. Soil layers and a variety of plantings are designed for infiltration and the removal of pollutants. Rain gardens are similar in function to bioretention planters or bioswales, but can be a free-form design to fit the desired area, rather than linear.



Bioretention Basin
North Carolina Botanical Garden Education Center, Swanson + Associates



Dry Detention Basin
Metairie, LA



Improved Waterway
Austin, TX, Sasaki



Rain Garden
New Orleans, LA

Environmental Education Precedent

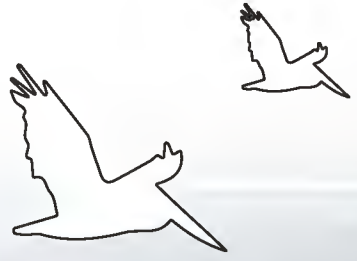


Ripple Effect Water Literacy Project
New Orleans, LA

Ripple Effect is a nonprofit environmental education organization that fosters water literacy through professional training and standards-aligned curricula, so teachers can incorporate real-world, climate-related water issues into everyday science instruction.

Carroll Street Property

Conceptual Design



Multigenerational Parks

Paul D. Cordes Park & Lakefront Park



PROGRAMS

Multi-generational activities and spaces

Inclusive programs for users of all abilities

- Community gardens
- Senior fitness stations
- Planned group activities



Dog Park

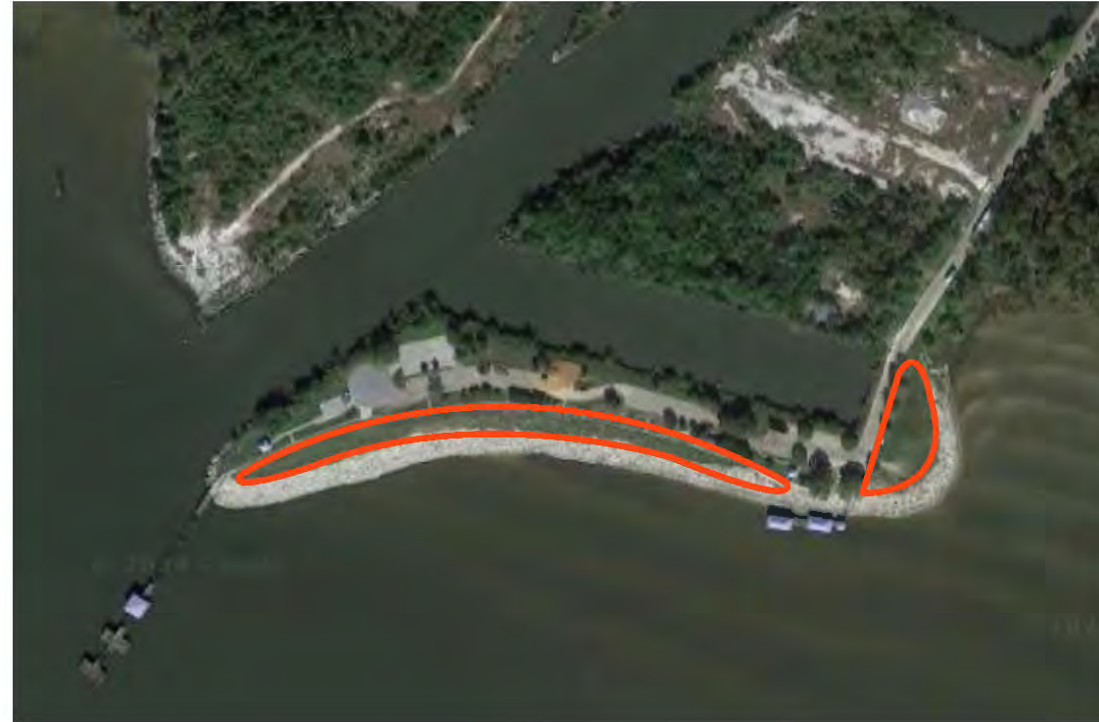
Site Analysis & Programming



POTENTIAL SITE EVALUATIONS



Tammany Trace Bend



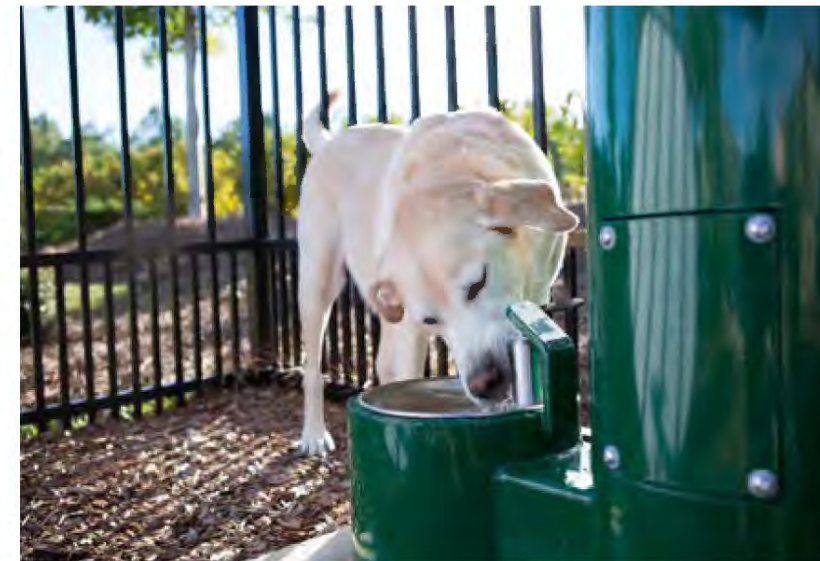
Sunset Point Fenced Area



Paul Cordes Park - 3 Options

PROGRAMS

- Fenced areas for large and small dogs
- Restrooms
- Agility equipment
- Access to water
- Splash pad water feature



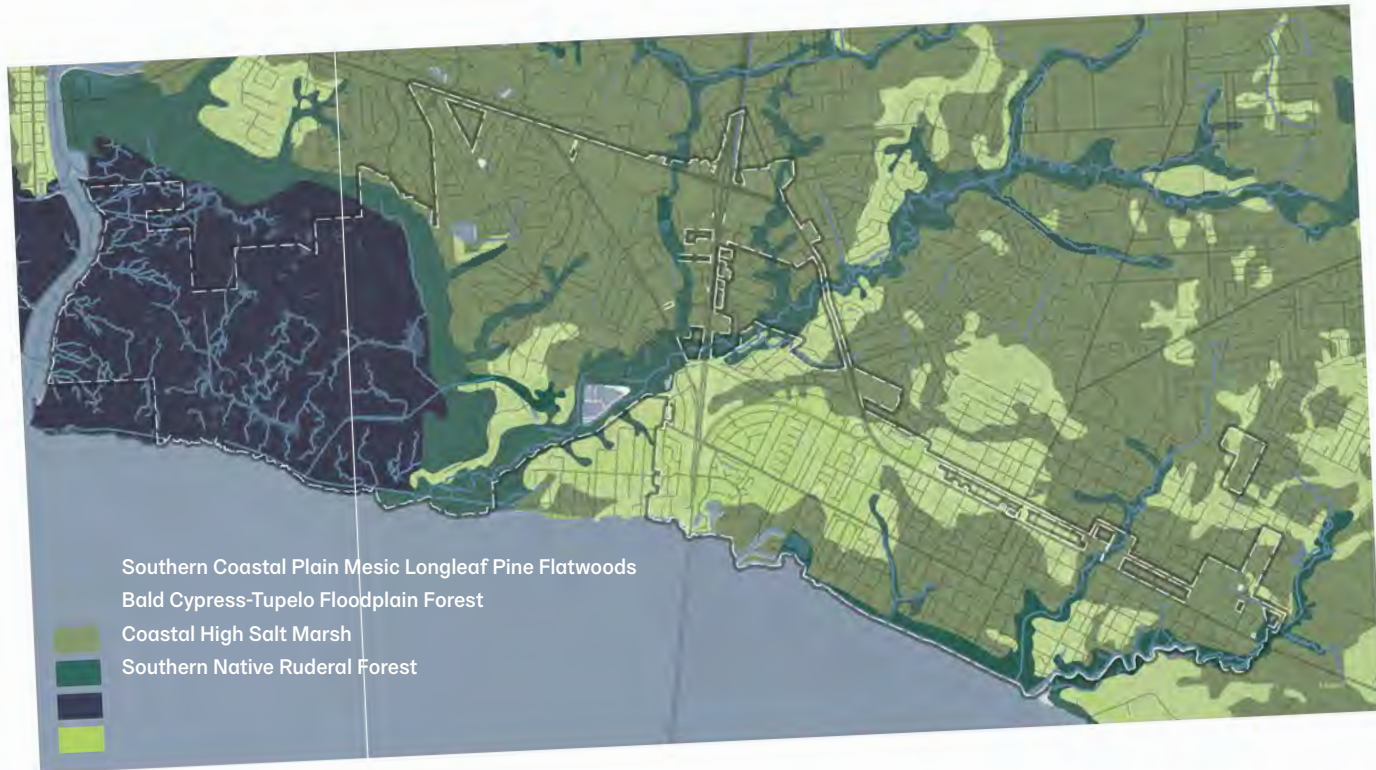


Implementation

Sustainability & Efficiency

A Landscape Management Paradigm Shift

Existing Conditions



LANDSCAPING PHILOSOPHY

This plant selection and sustainable landscaping toolkit will help Mandeville leaders and residents confidently make ecologically sound and economical landscaping decisions for property development. This toolkit looks to existing ecology as a guide for future development. Selecting native species and emulating Mandeville’s naturally occurring plant communities in the appropriate places will provide low maintenance and beautiful landscapes. Native plants are already well adapted to Mandeville’s environment and climate so when they are planted within the appropriate ecological community, they will have what they need to thrive with few human inputs.

PLANT SELECTION TOOLKIT

This toolkit identifies three prominent plant communities and provides a description of their defining characteristics paired with a selection of native plants to choose from. When developing a landscaping plan for a new site, reference the Plant Communities Map to understand which plant pallet to use. While this map provides an overview of plant community locations, we also acknowledge that ecosystems do not always adhere to static boundaries. Therefore, it is important to also consult the Plant Community Characteristics descriptions to identify the right plant community for your site. Especially in areas on the edges of plant communities, it may be appropriate to select species from multiple plant community palettes.

Historic Natural Landscape



Present Landscape + Built Environment



Plant Selection Guide Map

Native Plant Communities



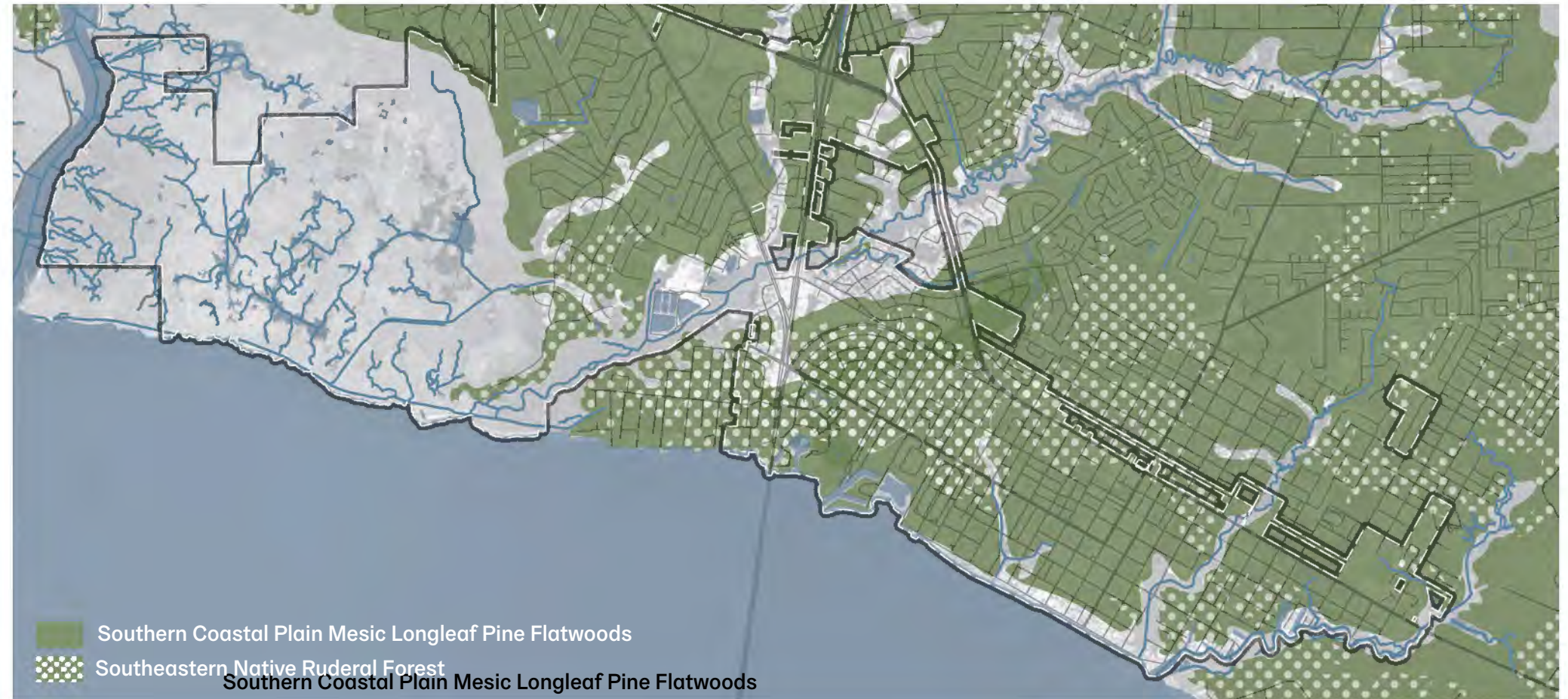
Longleaf Pine Flatwoods



PLANT COMMUNITY CHARACTERISTICS

Southern Coastal Plain Mesic Longleaf Pine Flatwoods is the most prevalent plant community in Mandeville and occurs on coastal plains in the Southeastern United States. This planting group is dominated by Longleaf Pine (*Pinus palustris*) and Loblolly Pine (*Pinus taeda*) tree species that range from an open savanna canopy condition to a denser woodland canopy. This plant community also includes a species rich herbaceous and shrub understory. Understory species diversity is especially rich in areas where the tree canopy is relatively open, allowing for more light. Ground cover in these flatwoods mostly consists of grasses. This plant community requires medium moisture and is found on relatively higher ground that does not frequently flood. Frequency of fire is a major determinant of species composition in this community.

In areas of high human development, some of the Longleaf Pine Flatwoods have been replaced by ruderal forests. Ruderal forests are comprised of species that can grow on disturbed sites and contain a mixture of native and exotic species. Landscape development in ruderal forest areas should encourage restoration of the Longleaf Pine flatwoods community.



Savanna

<20% tree canopy cover
Choose understory plants that grow in full or partial sun

Woodland

20-60% tree canopy cover
Choose understory plants that grow in partial sun or shade

Forest

60%+ tree canopy cover
Choose understory plants that grow in partial or full shade

Longleaf Pine Flatwoods

Plant Palette



COMMON NAME	SCIENTIFIC NAME	SIZE		LIGHT		SOIL		LEAF GROWTH		BLOOM SEASON				PARK TYPOLOGY						
		HEIGHT	SPREAD	SUN	SHADE	DRY	MOIST	EVERGREEN	DECIDUOUS	SPRING	SUMMER	FALL	WINTER	ACTIVE	PASSIVE	CONSERVATION	TRAIL	CORRIDOR	CULTURAL	RESIDENTIAL
TREES																				
Spruce Pine	Pinus glabra	100' x 35'					●		●											
Longleaf Pine	Pinus palustris	100' x 20'		●					●											
Loblolly Pine	Pinus taeda	80' x 35'							●											
SHRUBS																				
Inkberry	Illex glabra	12' x 7'							●			●								
Saw Palmetto	Serenoa repens	10' x 7'		●					●											
GRASSES																				
Switchgrass	Panicum virgatum	10' x 2'		●																
Little Bluestem	Schizachyrium scoparium	5' x 2'		●																
Slender Bluestem	Schizachyrium tenerum	3' x 2'		●																
Indian Grass	Sorghastrum nutans	8' x 2'		●																
HERBACEOUS PERRENIALS																				
Pinewoods Lily	Alophia drummondii	4' x 2'										●	●							
Georgia Tickseed	Coreopsis nudata	4' x 2'										●								
Purple Coneflower	Echinacea purpurea	3' x 2'		●								●	●							
Swamp Sunflower	Helianthus angustifolia	5' x 2'																		
Gulf Coast Blazing Star	Liatris acidota	4' x 2'		●									●	●						
Dense Blazing Star	liatris spicata	6' x 3'		●									●	●						
Western Bracken Fern	Pteridium aquilinum	4' x 4'																		
Winged sarracenia	Sarracenia alata	3' x 1'		●									●							
Goldenrod	Solidago altissima	6' x 4'												●	●					

Longleaf Pine Flatwoods

Plant Palette



Pinus palustris



Pinus taeda



Schizachyrium scoparium



Pteridium aquilinum



Illex glabra



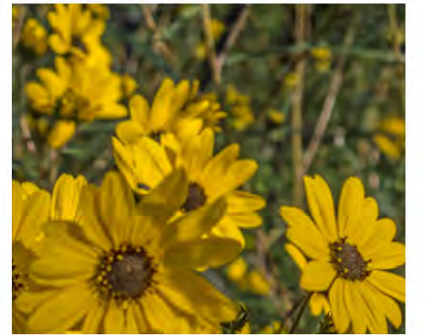
Sarracenia alata



Alophia drummondii



Echinacea purpurea



Helianthus angustifolia



Serenoa repens



Solidago altissima



Liatris acidota

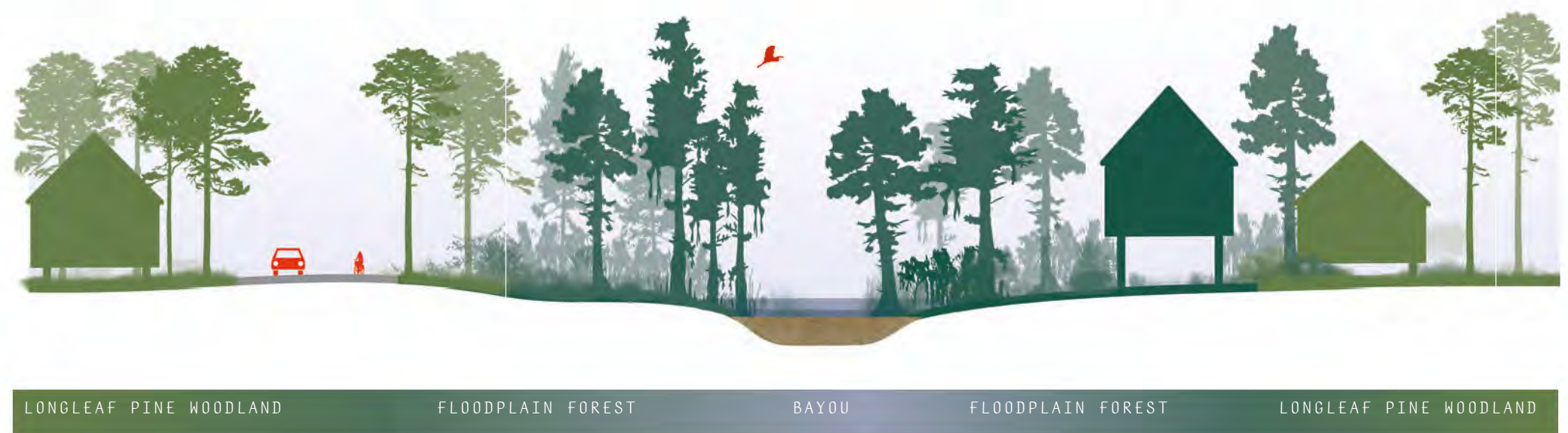


Coreopsis nudata

Bald Cypress-Tupelo Floodplain Forest

PLANT COMMUNITY CHARACTERISTICS

Bald-Cypress-Tupelo Floodplain Forests are wetland forests that can occur in streams, rivers, or tidal areas. Flooding is crucial to this plant community, as it brings in sediment deposit and nutrient input and excludes non-flood-adapted species from growing. The community grows in low points and depressions in the landscape that can store water. This community is dominated by tall tree species, namely Bald Cypress (*Taxodium distichum*) and Water Tupelo (*Nyssa aquatica*). Patches of smaller trees are also interspersed. This plant community can be threatened by saltwater intrusion and sea level rise.



LONGLEAF PINE WOODLAND FLOODPLAIN FOREST BAYOU FLOODPLAIN FOREST LONGLEAF PINE WOODLAND

Located along Mandeville’s bayous, the floodplain forests slow, hold, and filter water, providing flood protection to upland development.

Bald Cypress-Tupelo Floodplain Forest

Plant Palette



COMMON NAME	SCIENTIFIC NAME	SIZE		LIGHT		SOIL		LEAF GROWTH		BLOOM SEASON				PARK TYPOLOGY						
		HEIGHT	SPREAD	SUN	SHADE	DRY	MOIST	EVERGREEN	DECIDUOUS	SPRING	SUMMER	FALL	WINTER	ACTIVE	PASSIVE	CONSERVATION	TRAIL	CORRIDOR	CULTURAL	RESIDENTIAL
TREES																				
Red Maple	Acer rubrum	100' x 35'		●	●		●		●											
Sweetbay Magnolia	Magnolia virginiana	35' x 25'			●		●		●		●	●								
Red Mulberry	Morus rubra	60' x 35'		●	●		●				●	●								
Water Tupelo	Nyssa aquatica	100' x 35'		●			●													
Swamp Tupelo	Nyssa biflora	80' x 35'		●			●													
American Sycamore	Platanus occidentalis	150' x 60'		●	●		●													
Overcup Oak	Quercus lyrata	80' x 40'		●				●												
Willow Oak	Quercus phellos	100' x 50'			●		●													
Pond Cypress	Taxodium ascendens	90' x 25'		●			●													
Bald Cypress	Taxodium distichum	65' x 25'		●	●		●													
SHRUBS																				
Buttonbush	Cephalanthus occidentalis	12' x 8'			●		●					●								
Swamp Dogwood	Cornus foemina	25' x 15'			●		●				●									
Dwarf Palmetto	Sabal minor	7' x 4'		●	●		●		●											
Saw Palmetto	Serenoa repens	10' x 7'		●	●		●		●											
Arrowwood Viburnum	Viburnum dentatum	7' x 8'		●	●		●				●	●								

Bald Cypress-Tupelo Floodplain Forest

Plant Palette



Acer rubrum



Taxodium distichum



Magnolia virginiana



Cephalanthus occidentalis



Platanus occidentalis



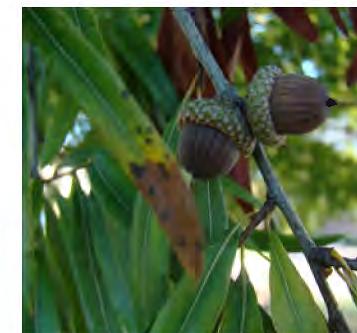
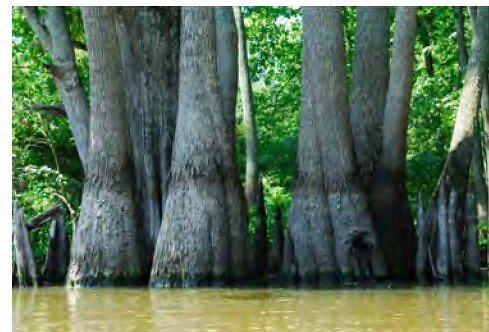
Viburnum dentatum



Nyssa biflora



Nyssa aquatica



Quercus phellos



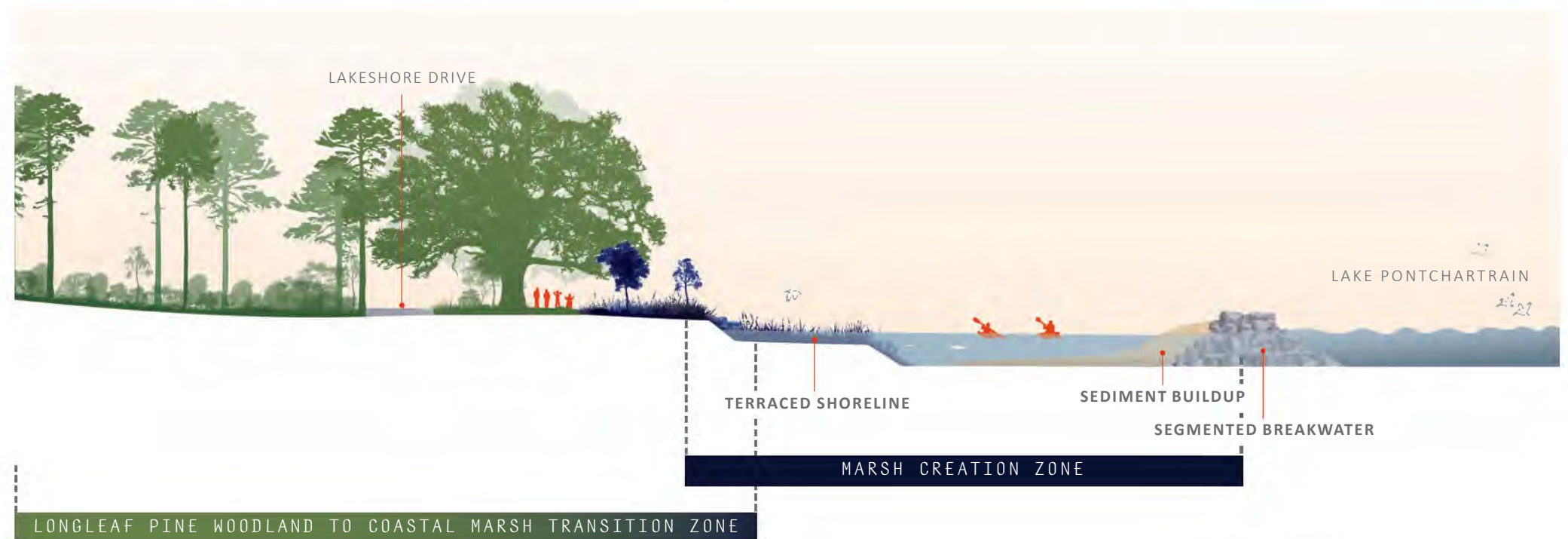
Sabal minor

Coastal High Salt Marsh



PLANT COMMUNITY CHARACTERISTICS

The high salt marsh plant community is found in flooded tidal areas and is comprised of grasses as well as salt-tolerant shrubs that occur on the higher edges of the marsh. Salt marshes usually develop over fine-grained sediment but can grow over sand as well. Salt marshes also provide a wealth of ecosystem services including flood/erosion protection, habitat for commercial and recreational fishing, improving water quality, and carbon sequestration.



Coastal High Salt Marsh

Plant Palette



COMMON NAME	SCIENTIFIC NAME	SIZE		LIGHT		SOIL		LEAF GROWTH		BLOOM SEASON				PARK TYPOLOGY					
		HEIGHT	SPREAD	SUN	SHADE	DRY	MOIST	EVERGREEN	DECIDUOUS	SPRING	SUMMER	FALL	WINTER	ACTIVE	PASSIVE	CONSERVATION	TRAIL	CORRIDOR	CULTURAL
TREES																			
Sugarberry	Celtis laevigata	80' x 25'		●	●	●													
Red Bay	Persea borbonia	40' x 40'		●	●		●		●										
Coastal Live Oak	Quercus virginiana	50' x 35'		●	●		●												
Toothache Tree	Zanthoxylum clava-herculis	40' x 15'		●															
SHRUBS																			
Saltbush	Baccharis halimifolia	15' x 12'		●			●												
HERBACEOUS PERENNIALS																			
Seaside heliotrope	Heliotropium curassavicum	2' x 2'		●			●				●	●	●	●					
Beach Morning-Glory	Ipomoea sagittata	12' vine		●			●				●	●	●	●					
GRASSES																			
Inland Sea Oats	Chasmanthium latifolium	4'		●	●		●												
Maidencane	Panicum hemitomon	6'		●			●												
Saltmarsh Cordgrass	Spartina alterniflora	6'		●			●												
Big Cordgrass	Spartina cynosuroides	11'		●			●												

Coastal High Salt Marsh

Plant Palette



Chasmanthium latifolium



Heliotropium curassavicum



Spartina alterniflora



Ipomoea sagittata



Baccharis halimifolia



Zanthoxylum clava-herculis



Panicum hemitomon



Spartina cynosuroides



Persea borbonia



Quercus virginiana

Funding & Prioritization



Capital Projects & Property Acquisition

- Carroll Street Sites
- West Toll Plaza Site
- Landfill Site
- Cemetery Site
- Sunset Point repairs
- Little Bayou Castine properties
- Other waterway-adjacent properties

Mid-Level Projects & Programs

- Expand Trace Trailhead
- Interpretive Signage
- Monroe/Causeway Safe Crossing
- City Hall Safe Crossing
- Water quality monitoring

Low Cost Programs

- Cover crop on Landfill Site
- Implement new planting guidelines
- Reforestation guidelines
- Construction signage (“coming soon”)
- Community mulching program
- Tree-bate program

Collective Vision

