



Planning  
Department  
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## STAFF REPORT Text Study

Docket No. TXT-1-23  
Summary No. 26082  
Jefferson Parish Green Infrastructure Plan

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**Study Intent:** Adopt the Jefferson Parish Green Infrastructure Plan as a subplan of the Comprehensive Plan

**Authorization:** Res. No. 128317 (12/17/2016)

**Council District:** Parish-wide

**PAB Hearing:** 2/23/2023

**Last Meeting Date  
for Council Action:** 6/28/2023

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### OVERVIEW

In 2016, the Jefferson Parish Stormwater Management Advisory Committee (JPSWMAC) published their Committee's findings that a focus on integrated stormwater management within the Parish was desirable so stormwater-related issues could be addressed comprehensively and collaboratively (Res. No. 128317). The Green Infrastructure Plan, a result of those conversations, provides long-range guidance on best practices for implementing stormwater management and green infrastructure that guide future investment and regulatory changes.

The Green Infrastructure Plan (GIP) establishes the urgency of issues caused by excessive paving and overreliance on pipes and pumps, such as vulnerability to flooding and subsidence. It proposes a vision statement that Jefferson Parish residents are served by an exceptional state-of-the-art drainage system that uses pipes and pumps—and works with nature—to protect their property during flood events, advancing a sustainable approach to effectively reduce risk to people and property over time. The Plan promotes investments in public spaces through pilot projects to make green infrastructure visible to residents, highlights existing Jefferson Parish case studies to show the progress already made, introduces upcoming funding sources, and provides data to support the selection of pilot projects.

The GIP, like other important parishwide planning documents, should be formally adopted as a part of the Comprehensive Plan. Thus, triggering an amendment to Chapter 25 Planning and Development of the Code of Ordinances and legislative approval from the Parish Council.

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### STAFF RECOMMENDATION

- Amend Chapter 25 *Planning and Development, Article VI.*:
  - To adopt the Jefferson Parish Green Infrastructure Plan, by reference as a stand-alone document, as a subplan of the Comprehensive Plan; and
  - Add resolutions for recent amendments to other subplans of the Comprehensive Plan.

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## **PLANNING ADVISORY BOARD RECOMMENDATION**

On February 23, 2023, the PAB deferred to March 9, 2023 (see PAB minutes).

On March 9, 2023, the PAB recommended approval (see PAB minutes).

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## BACKGROUND

### ***Plan Overview***

In Jefferson Parish, rain events are becoming more frequent and intense. At the same time, new buildings, roads, and parking lots increase the amount of land covered by impervious surfaces. This causes stormwater to run off at faster rates and increased volumes, which leads to less infiltration to replenish groundwater and to water quality issues in Parish waterways. Accelerating subsidence rates, increased flooding, overwhelmed flood control structures, degraded channel embankments, and impaired local water resources are the natural consequences of these weather and environmental changes. Accommodating these new realities requires Jefferson Parish to take strategic action to reduce flooding impacts, protect the integrity of its drainage system, and stabilize its natural environments.

The Jefferson Parish Green Infrastructure Plan is part of Jefferson Parish’s continuing efforts to manage rainwater as a more resilient community. The Parish objective is to create a plan that will provide guidance to the Council and Administration on best practices for integrated stormwater management and green infrastructure on public and private property.

The Green Infrastructure Plan:

1. Addresses flooding, hazards, and other challenges that impact how Jefferson Parish balances water;
2. Explains the benefits of green infrastructure and how a mixed approach of grey and green infrastructure can help mitigate flooding now and in the future; and
3. Utilizes previous studies and reports to establish a vision statement, goals, and objectives, and recommendations for incorporating green infrastructure into public projects and private development.

### ***Initiative Timeline and Outreach***

The Jefferson Parish Green Infrastructure Plan arose from the findings of the Jefferson Parish Stormwater Management Advisory Committee (JPSWMAC), which found that a focus on integrated stormwater management within the Parish was desirable so issues related to stormwater management could be addressed comprehensively and collaboratively. As part of those findings (Res. No. 128317), the Jefferson Parish Council authorized the Planning Department and Planning Advisory Board to conduct a text study with the intent of enhancing and creating standards and regulations that promote low-impact development and integrated stormwater management. Originally submitted by

consultants Volkert and Meyer Engineering after a two-year period of drafting and public outreach, the Green Infrastructure Plan was later revised and completed by the Jefferson Parish Planning Department.

The Green Infrastructure Technical Advisory Committee, comprised of the Jefferson Parish President and various stakeholders from Parish administration, guided and provided feedback on the content of the Green Infrastructure Plan. Over the course of 15 months from October 2020 to December 2021, the Green Infrastructure Technical Advisory Committee met in support of plan recommendations.



Figure 1. Project Timeline.

The project team engaged in a robust outreach and public comment process with local stakeholders from 2020-2023. Three (3) meetings were held to engage the public during the consultant-led development of the Green Infrastructure Plan.

- A virtual public meeting was held on November 17, 2020, where the public was introduced to the concept of green infrastructure, advised of the project, and provided the opportunity to submit input, suggestions and questions.
- On December 1st and 7th 2021, the Parish hosted in-person meetings on the East and West Banks (respectively), where the project team presented and reviewed the draft Plan context, approach, goals, findings, and recommendations.

Targeted outreach with local stakeholders and previous members of the Stormwater Management Advisory Committee took place in late 2022. Following these meetings, a draft of the Plan was released on December 14, 2022 and a news release published soliciting public comment.

### ***Comprehensive Plan- Envision Jefferson 2040***

The parish's comprehensive plan - *Envision Jefferson 2040* - guides decisions regarding growth and development and provides the framework for defining the future of unincorporated Jefferson Parish. The Parish Council adopted *Envision Jefferson 2040* on November 6, 2019 (Ordinance No. 25891) and it became effective December 6, 2019.

*Envision Jefferson 2040* includes multiple elements, including:

- Land use and the future land use map;

- Transportation and related subplans;
- Community facilities and open space;
- Natural hazards and resources and a related subplan;
- Economic development and a related subplan; and
- Implementation tasks and subarea plans.

The Comprehensive Plan includes a “compendium of subplans that the Parish and its partners, such as JEDCO and the New Orleans Regional Planning Commission (RPC) have developed over the past years for specific topics and geographic areas.”<sup>1</sup> It is clearly stated in the Comprehensive Plan that “the Parish recognizes the difficulties in foreseeing the future and anticipates dynamic shifts—social, economic, and physical—that will necessitate amendments and updates to this living Plan document meant to evolve over time.”<sup>2</sup>

The Green Infrastructure Plan is important for Jefferson Parish because green infrastructure provides direct and indirect benefits in the areas of economy, society, and environment. The Green Infrastructure Plan, like other important parishwide planning documents, should be formally adopted as a part of the Comprehensive Plan. Thus, triggering an amendment to Chapter 25 *Planning and Development* of the Code of Ordinances and legislative approval from the Parish Council.

## Major Plan Linkages



Figure 2. Major Plan Linkages highlighted on page 3 of the *Envision Jefferson 2040*.

<sup>1</sup> *Envision Jefferson 2040*. <https://jefferson-parish-government.azureedge.net/documents/departments/planning/envision-2040/EnvisionJefferson2040.pdf>

<sup>2</sup> Ibid.

## ANALYSIS

The Green Infrastructure Plan is organized into four core sections.

- **Part I** introduces Jefferson Parish’s present state by outlining demographic and geographic trends, drainage infrastructure, hazards, and other background information.
- **Part II** provides information on incorporating green infrastructure into the Parish’s drainage systems and highlights case studies in Jefferson Parish and elsewhere. This section is animated by two questions: “What is Green Infrastructure?” and “What Does Green Infrastructure Look Like?”
- **Part III** analyzes Parish-specific factors that would influence a successful future green infrastructure strategy, including Parish-wide data on elevation, impervious surfaces, the Parish’s current regulatory framework, and the objectives that will guide the implementation of green infrastructure elements.
- **Recommendations** synthesizes information from the first three sections to describe specific regulatory, logistical, and programmatic approaches Jefferson Parish can take to better integrate green infrastructure throughout the Parish.

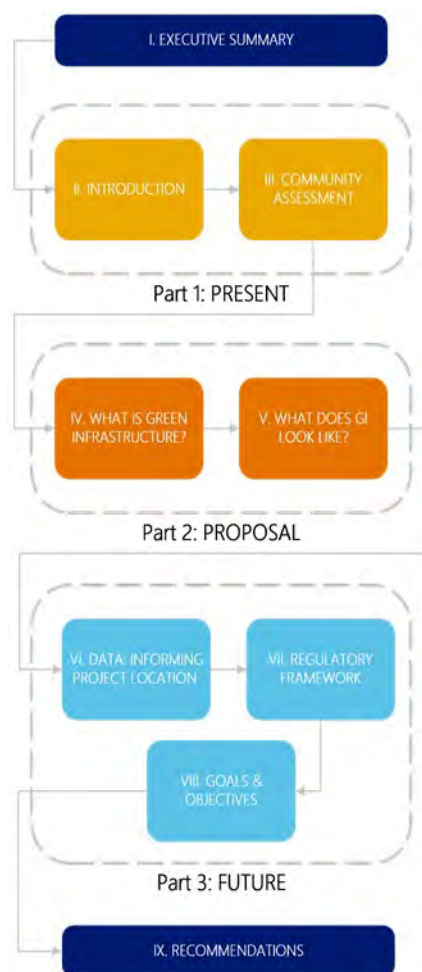


Figure 3. Organizational Structure of the GIP.

### Part I: Present

#### Introduction

Best practices acknowledge that gray infrastructure alone is ineffective at managing both water quality and flood risk. Better, more resilient drainage comes from a balance between traditional methods and using natural processes to hold and filter water. Many communities have balanced gray and green infrastructure as a way to cost-effectively manage stormwater while achieving benefits for their residents.

To prepare for the future, Jefferson Parish must do the same. The Green Infrastructure Plan is a document that first proposes a future vision where “Jefferson Parish residents are served by an exceptional state-of-the art drainage system that uses pipes and pumps—and works with nature—to protect their property during flood events, advancing a sustainable approach to effectively reduce risk to people and property over time.” It then outlines how Jefferson Parish can realize that vision.

The Plan has four primary aims:

- **Support goals** advancing green infrastructure and low impact development (LID) principles.

- **Explain high-risk hazards** and other challenges.
- **Present solutions** at an individual and community scale to reduce instances of nuisance flooding, prolong the life of gray infrastructure, lessen the likelihood that flooding will continue to worsen due to subsidence, and reduce the flooding impacts of hurricanes.
- **Establish recommendations** and next steps.

### *Community Profile*

The community profile assesses the Parish's strengths and challenges with stormwater management. This section of plan highlights certain characteristics of our community that impact our risks and needs:

- Jefferson Parish is located in southeastern Louisiana and runs from the area west of New Orleans to Grand Isle on the Gulf of Mexico. As of the 2020 Census, it is the most populous parish in Greater New Orleans. Although the Parish contains six incorporated municipalities, most of its population lives in unincorporated areas.
- Relatively low population growth and an aging population contribute to a projected stable or decreasing housing need over the next two decades.
- The Parish's current drainage system, significantly built between 1970 and 2000, functions well and should continue receiving investments. However, it stands to benefit from green infrastructure strategies aimed at reducing maintenance costs and improving long-term system performance.
- Key hazards experienced by Jefferson Parish include subsidence and increased flood risk, as highlighted in the 2020 Multijurisdictional Hazard Mitigation Plan.
- The Parish contains a significant amount of high-quality wetland habitat, as well as a large proportion of impervious surfaces that can degrade water quality by allowing chemicals to run off impervious surfaces into waterways.
- Local hazards (subsidence and increased flood risk) are projected to worsen, underscoring the need for green infrastructure such as permeable pavement, onsite water retention, LID on private property, and tree planting efforts.



## Part II: Proposal

### What is Green Infrastructure?

Perhaps the most common question a resident might ask is “what is green infrastructure?” It is a broad term covering a variety of elements and strategies. The Green Infrastructure Plan defines it as “the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspire stormwater and reduce flows to sewer systems or to surface waters,” consistent with the 2019 U.S. Water Infrastructure Improvement Act.<sup>3</sup>

Other questions include what green infrastructure is, what it looks like compared to traditional infrastructure, how to prevent mosquito breeding in green infrastructure elements like rain gardens and bioswales, and other concerns.

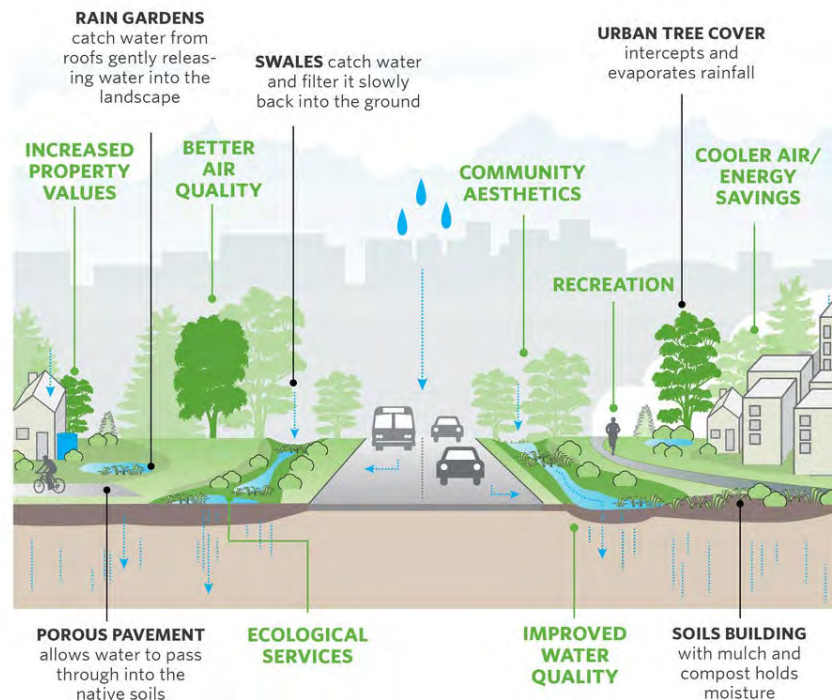


Figure 4. Benefits of Green Infrastructure. Image Source: <https://stormwater.cob.org/whystormwater/>

Green infrastructure provides direct and indirect benefits in the areas of **economy, equity, and environment**, often called the “**triple bottom line**.” These benefits include:

- Mitigating subsidence and recharging groundwater
- Improving air and water quality
- Creating community aesthetic benefits
- Improving the “heat island effect,” which cools air and results in energy savings
- Economic development related to neighborhood desirability, raising property values

In addition to “triple bottom line” benefits, a 2007 EPA study examining seventeen (17) projects across the U.S. found that green infrastructure outperformed traditional stormwater management from a cost perspective in all but one example. Oftentimes, this came from the decreased maintenance costs of green infrastructure. These decreased

<sup>3</sup> Environmental Protection Agency (EPA). *What is green infrastructure?* <https://www.epa.gov/green-infrastructure/what-green-infrastructure>



expenses can make green infrastructure as much as 25 percent less costly than traditional infrastructure over its life cycle.

### *What Does Green Infrastructure Look Like?*

The most commonly associated green infrastructure elements may be bioswales and rain gardens, but green infrastructure can take forms that are appropriate for a variety of scales and locations. These green infrastructure elements can be categorized into *filtration, surface infiltration, subsurface infiltration, and retention/detention* elements.

### *Recommended Green Infrastructure Elements*

The Plan highlights ten (10) recommended green infrastructure elements that the project team has selected as appropriate to the context of Jefferson Parish. It also includes case studies of existing elements. Examples are included below.

<b>Table 1. Recommended Green Infrastructure Elements, adapted from JP Green Infrastructure Plan.</b>			
<b>Element</b>	<b>Scale Applicability</b>	<b>Constraints</b>	<b>Notes</b>
<b>Bioretention Areas</b>	Individual Street Neighborhood Regional	Soils, groundwater	Maintenance effort similar to traditional planters
<b>Constructed Wetlands</b>	Neighborhood Regional	Space, vectors	Highly context-sensitive
<b>Detention Basins</b>	Street Neighborhood Regional	Space, groundwater	Traditional
<b>Downspout Disconnection</b>	Individual	Structural (foundation)	Need positive drainage from building
<b>Green and Blue Roofs</b>	individual	structural, capacity	Structural analysis required
<b>Permeable Pavements</b>	Individual street	groundwater	Requires vacuum equipment
<b>Rainwater Harvesting</b>	Individual	Capacity	Non-potable uses only
<b>Retention Basins</b>	Street Neighborhood Regional	Space, groundwater, vectors	Aesthetic, place-making benefits
<b>Urban Reforestation</b>	Individual Street Neighborhood Regional	Space	Many benefits not related to stormwater
<b>Vegetated Swales and Areas</b>	All	None	Can provide pre-treatment

### *Location and Scale*

The scale at which green infrastructure elements are applied depends largely on design, site conditions and the amount of runoff and drainage area intended to be treated or

sourced. Even apparent site scale designs (like green or blue roofs or rainwater harvesting) could be applied at a neighborhood or community scale if administered across multiple sites.

For this reason, the project team groups projects into three categories, but describes them independently to avoid limiting creative applications long-term. The project team also considers special circumstances and opportunities to incorporate green infrastructure elements in local road, highway and bridge development projects.

### ***Part III***

#### ***Data Types and Key Findings***

Green infrastructure is not appropriate in all locations and at all scales. The Green Infrastructure Plan emphasizes that the location of any new pilot projects or investments in green infrastructure elements should be data-driven to consider the local topography, hydrology, and built environment. Data collected by the project team in this section is intended to serve as a reference that will inform where new green infrastructure investments should be located. Optimal locations are not based on any single variable, so the intent of this section is to provide a multi-dimensional snapshot of Jefferson Parish. Collected data include:

- Rain Volume
- Calculated Flood Depths
- Topography
- Impervious Surfaces
- Soil Permeability and Typologies
- Depth to Water Table
- Water Quality Data

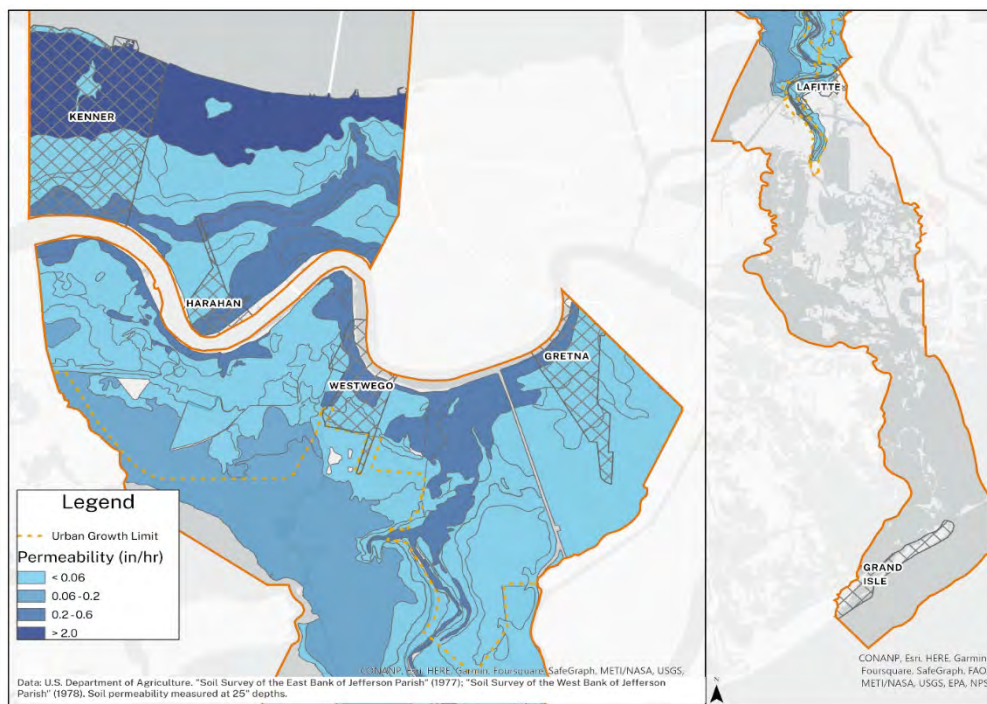


Figure 5. Measured permeability by soil type at a 24" depth within Jefferson Parish.

Key findings from analysis of these data are that:

- Jefferson Parish experiences some of the highest average rainfall rates in the state and country, and this precipitation displays a high degree of spatial variability.
- Available space is the most significant challenge to implementing green infrastructure parish-wide, particularly on the East Bank, so reducing existing impervious surfaces throughout the Parish, especially in over-paved and under-utilized parking areas, should be a key strategy for officials.
- High elevation areas in Jefferson Parish, which tend to have low soil permeability, are likely not appropriate for infiltrative infrastructure elements. Instead, these areas should consider rain barrels, cisterns, and/or green roofs.
- Low elevation areas are more prone to flooding, tend to have higher soil permeability rates, and are constrained by depth to water table ratios, which lend themselves to site, neighborhood, and corridor projects.
- To maximize the benefit of these data, Parish departments should develop a standard set of draft project area criteria to apply to new green infrastructure development.

### Regulatory Framework

Green infrastructure development in Jefferson Parish is shaped by a number of local, state, and federal regulations, including MS4 permits approved by the Louisiana Department of Environmental Quality and Louisiana Pollutant Discharge Elimination System (LPDES) permits for construction activities. Development regulation within Jefferson Parish is primarily located in Chapters 33 and 40. Although the Parish has recently added Low-Impact Development (LID) standards to Chapter 33, there is an opportunity to expand on the incentives offered and further clarify parking, stormwater,

and green infrastructure standards.

General improvements to parking requirements, based on a set of parking studies conducted by Volkert, include the following summarized recommendations from the consultant:

- Parking ratios should contain minimum and maximum amounts in order to curb excess parking construction
- Parking requirements should be reduced where mass transit is available or enforceable shared parking arrangements are made
- Overall imperviousness of parking lots should be reduced
- Incentives for structured parking lots (i.e. parking garages, which fit more parking into a smaller surface area) should be considered
- Opportunities exist to combine LID, parking, and stormwater regulations into a single section for clarity and ease of use

**No changes to the development regulations in Chapter 33 Unified Development Code and 40 Zoning of the Jefferson Parish Code of Ordinances are being proposed in this report. Detailed changes may be addressed in the future.**

Improvements to the Parish's erosion and sediment control measures are also addressed, drawing on recommendations from a 2022 Erosion and Sediment Control Assessment completed for Jefferson Parish. These include consolidating erosion and sediment control measures and increasing enforcement and specificity of regulations.



*Figure 6. Summary of recommendations by category from Green Infrastructure Plan*

## **Recommendations**

The Plan's recommendations are summarized below into three main categories:

1. **Day-to-Day Operations** include policies or programs aimed at integrating green infrastructure project development into current processes and systems Parish-wide, including:
  - a. Develop Technical Design Guidance Manuals for private sites and public spaces

- b. Review and integrate green infrastructure elements into public projects
  - c. Create a Construction Inspection Program to ensure appropriate design and construction
  - d. Create an Inspections and Maintenance Program to ensure long-term performance as designed
  - e. Select, train, and consistently utilize software or tools to assess site specific cost reasonableness
  - f. Enable and maintain clear tracking, evaluation, and reporting
  - g. Support Continued outreach, education, and training
2. **Regulatory Framework** recommendations include text amendments to the Code of Ordinances to affect development processes in a way that decreases stormwater runoff, supports the drainage system, enhances public and private spaces, and improves on site design techniques and low impact development practices.
- a. Where possible, consolidate stormwater management, parking requirements and Low Impact Development (LID) standards in a single location
  - b. Reduce imperviousness of parking areas and parking lot runoff through LID incentives
  - c. Add consolidated guidance for Parish officials, such as the Department of Environmental Affairs, to implement and enforce sedimentation and erosion control measures
  - d. Reduce parking ratios and create flexibility for off-street parking requirements
  - e. Clarify off-site and shared parking requirements and support parking alternatives when appropriate
3. **Funding and Next Steps:** Supporting improved project planning, creation of sustainable funding sources, and enabling more competitive green infrastructure project designs, including:
- a. Development of Green Infrastructure Project Area Criteria
  - b. Public Investment in Pilot Projects for Public Education
  - c. Development of a Green Infrastructure Capital Improvement Program

### ***Council Adoption and Next Steps***

Sec. 25-106 of the Jefferson Parish Code of Ordinance references various elements of the Comprehensive Plan:

- Land use and the future land use map;
- Transportation and related subplans;
- Community facilities and open space;
- Natural hazards and resources and related subplan;
- Economic development and related subplan; and
- Implementation tasks and subarea plans.

Planning recommends that the Parish Council formally adopt the Green Infrastructure Plan as a part of the *Envision 2040 Jefferson*. Planning is proposing to amend Sec. 25-106 to include the Green Infrastructure Plan as a subplan of the comprehensive plan.

## Related Matters for Other Subplans

The Parish Council adopted Resolution No.137226 on March 17, 2021, which approved the Jefferson EDGE 2025 economic development strategic plan dated February 2021 as the overall five-year economic development strategic plan for Jefferson Parish.

The Parish Council adopted Ordinance No. 26232 on June 30, 2021, which amended Lafreniere Sub plan, particularly necessary amendments in Section 3, the *revitalization + redevelopment plan* and Section 4, *implementation strategies and policy recommendations + actions*.

Although formally a part of the Comprehensive Plan, the reference for Resolution No. 137226 and Ordinance No. 26232 were not added to Chapter 25. Planning recommends adding the missing resolution reference for EDGE 2025 as a related housekeeping matter with this study.

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## CONCLUSION AND STAFF RECOMMENDATION

(for Amended Ordinance Text, see page 15 of this report)

### Staff Recommendation

The Planning Department recommends adoption of the Jefferson Parish Green Infrastructure Plan as a subplan of the Comprehensive Plan. The Green Infrastructure Plan was drafted over the course of two years with the input of numerous stakeholders and the public. Its purpose and recommendations support, expand on, and correspond with several high-level goals and objectives outlined in the Comprehensive Plan. Its strategies and recommendations, which are intended to improve stormwater management by reducing nuisance flooding, improving water quality, increasing community resilience, and incentivizing attractive, livable neighborhoods have a direct relationship to the health, safety, and general welfare of Jefferson Parish residents.

### Consistency with Comprehensive Plan

This recommendation supports the following *Envision Jefferson 2040* goals and objectives:

- Goal 9, Objective 1 of the Land Use Element: “Provide regulatory or other incentives for construction methods and designs that minimize environmental impacts, promote environmental quality, or mitigate climatic changes and extreme weather events.”
- Goal 9, Objective 2 of the Land Use Element: “Protect waterways from pollutants or erosion caused by stormwater runoff or wastewater discharge.”
- Goal 10, Objective 3 of the Land Use Element: “encourage integrated storm water management, green infrastructure, and other low-impact development techniques to minimize flooding and mitigate impacts of climate.”
- Goal 10, Objective 6 of the Land Use Element: “Promote development and site design that are less vulnerable to damages from flood, wind, subsidence, and other hazards.”
- Goal 10, Objective 7 of the Land Use Element: “Design and build infrastructure that is less vulnerable to flooding and includes low-impact development measures or integrated storm water management where practical.”



Goal 4, Objective 5 of the Natural Hazards & Resources Element: Expand incentives and adopt standards for integrated stormwater management and low-impact development. To achieve this recommendation, the Planning Department recommends the following text amendments:

- Adopt the Green Infrastructure Plan by:
  - Amending the text of Chapter 25 *Planning and Development*, Article VI. *Comprehensive Plan*, Section 25-106 *Plan specifications, generally* to include the Green Infrastructure Plan as a recognized subplan of the Jefferson Parish Comprehensive Plan *Envision Jefferson 2040* (#1)
- Add resolutions for recent amendments to the Jefferson EDGE and Lafreniere Sub Area Plan (#1)

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#### AMENDED ORDINANCE TEXT

Legend: added text ~~deleted text~~ moved text

Staff recommends the following text amendments:

1. **Amend Chapter 25 *Planning and Development*, Sec. 25-106 *Plan specifications, generally*, Article VI. *Comprehensive Plan*, to adopt the Jefferson Parish Green Infrastructure Plan as a subplan of the Comprehensive Plan and add resolutions for recent amendments to other subplans of the Comprehensive Plan, to read as follows:**

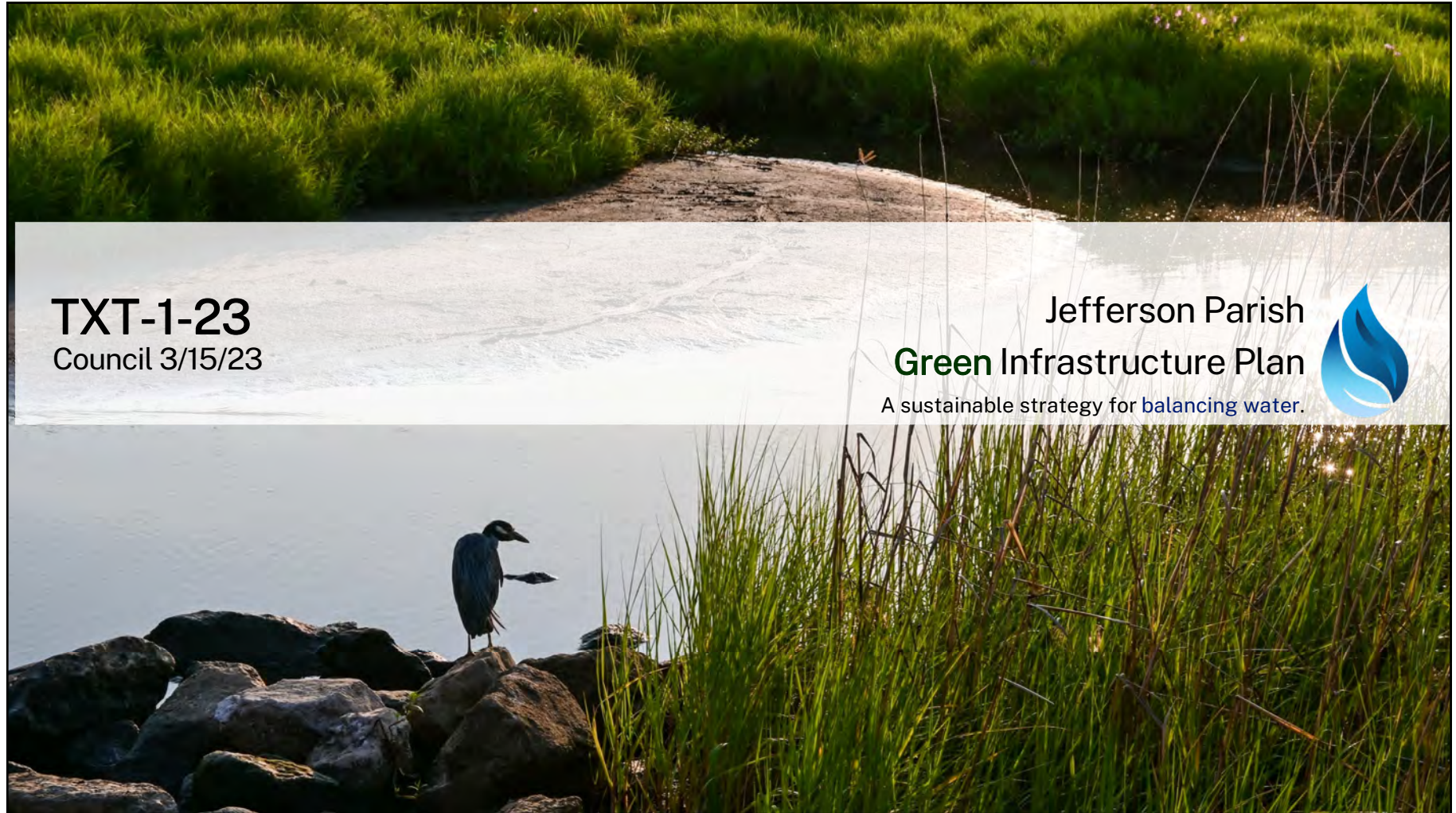
#### **Sec. 25-106. Plan specifications, generally.**

In furtherance of the Parish Charter, the Plan shall include the following components:

(1) *Elements*.

- a. Land Use and the Future Land Use Map;
- b. Housing and the following subplans:
  1. *Consolidated Plan for the Jefferson HOME Consortium* and related Action Plans, which the Parish Council adopted on June 4, 2003 by Resolution No. 98638, on May 21, 2008 by Ordinance No. 22493, on June 26, 2013 by Resolution No. 121180, and on June 6, 2018 by Resolution No. 131624, and as subsequently amended; and
  2. *Housing Stock Enhancement Strategic Plan*, as set forth in the Jefferson EDGE, prepared by the Jefferson Parish Economic Development Commission (JEDCO), January 19, 2017;
- c. Transportation and the following subplans:
  1. *Thoroughfare Plan*, which the Parish Council adopted on December 13, 2006 by Ordinance No. 22933, and as subsequently amended;
  2. *Bicycle Master Plan*, which the Parish Council adopted on April 30, 2014 by Ordinance No. 24734, and as subsequently amended; and
  3. *Public Transit Strategic Plan*, which the Parish Council adopted on November 6, 2019 by Ordinance No. 25891, and as subsequently amended;
- d. Community Facilities & Open Space;

- e. Natural Hazards & Resources and the following subplan:
    - 1. Jefferson Parish *Multijurisdictional Hazard Mitigation Plan*, which the Parish Council adopted on May 25, 2005 by Resolution No. 103529, on January 13, 2010 by Resolution No. 113811, and on April 29, 2015 by Resolution No. 124846, and as subsequently amended; and
    - 2. **Integrated Stormwater Management and the following subplan: Jefferson Parish Green Infrastructure Plan, which the Parish Council adopted on [MONTH] [DAY], 2023 by Ordinance No. [INSERT ORDINANCE NO.], and as subsequently amended.**
  - f. Economic Development and the following subplan: *Jefferson EDGE*, prepared by JEDCO and adopted by the Parish Council on May 17, 2000 by Resolution No. 91590, on November 16, 2005 by Resolution No. 104400, on August 12, 2009 by Resolution No. 112894, ~~and~~ on August 26, 2015 by Resolution No. 125550, and on March 17, 2021 by Resolution No. 137226, and as subsequently amended.
- (2) *Implementation Tasks.*
- (3) *Subarea plans.* The following subarea plans are hereby made a part of this Plan:
- a. *Metairie CBD Land Use and Transportation Plan*, which the Parish Council adopted on February 29, 2004 by Ordinance No. 21987, and as subsequently amended;
  - b. *Fat City Redevelopment Strategic Implementation Plan*, which the Parish Council adopted on September 2, 2009 by Ordinance No. 23627, and as subsequently amended;
  - c. *Bucktown Neighborhood Plan*, which the Parish Council adopted on February 7, 2007 by Ordinance No. 22984, and as subsequently amended; and
  - d. *Fairfield Strategic Plan*, which the Parish Council adopted on October 7, 2015 by Ordinance No. 25020, and as subsequently amended.
  - e. *Lafreniere Sub Area Plan*, which the Parish Council adopted on November 6, 2019 by Ordinance No. 25891, amended on June 30, 2021 by Ordinance No. 26232, and as subsequently amended.
  - f. *Terrytown Neighborhood Revitalization Study Strategic Plan*, which the Parish Council adopted on December 18, 2019 by Ordinance No. 25916, and as subsequently amended.
- (4) *Appendices*, including but not limited to:
- a. Community Profile;
  - b. Opportunities & Constraints; and
  - c. Implementation Progress.



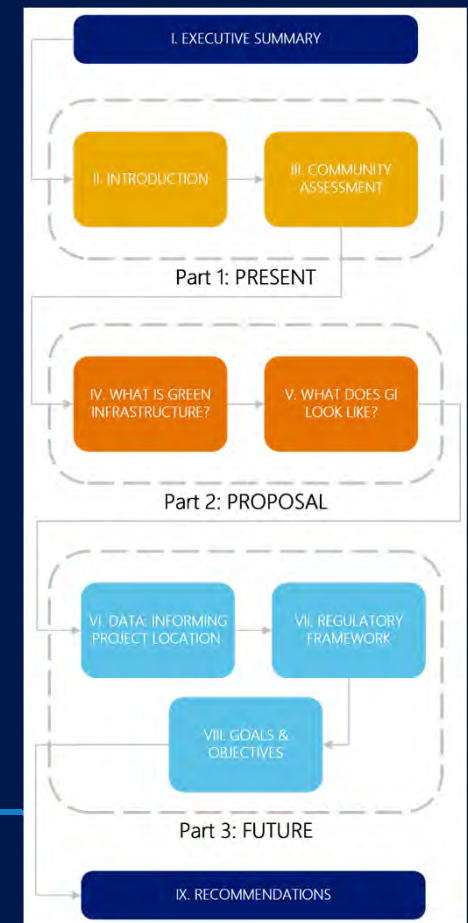
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# Overview

- In 2016, Jefferson Parish Stormwater Management Advisory Committee (JPSWMAC) found a focus on **integrated stormwater management** was desirable to **comprehensively address stormwater issues** (Res. No. 128317).
- Green Infrastructure Plan (GIP) is the result of these findings
- Visioning document: guidance to Administration and Council on best practices to implement green infrastructure
  - Establishes urgency of issues cause by excessive paving
  - Proposes a vision statement for Jefferson Parish
  - Promotes investment in public spaces
  - Highlights existing Jefferson Parish green infrastructure success stories
  - Provides data to support pilot project selection
- The Green Infrastructure Plan, like other important parishwide planning documents, should be formally adopted as a part of the Comprehensive Plan
  - Triggers amendment to Chapter 25 of the Code and legislative approval from the Parish Council

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# What does the GI Plan do?

## The Plan:

- **Supports goals** advancing green infrastructure and low impact development (LID)
- **Explains high-risk hazards** and other challenges
- **Presents solutions** to reduce instances of nuisance flooding, protect the life of our gray infrastructure, etc.
- **Establishes recommendations** and next steps

### CASE STUDY ELMWOOD | JEFFERSON PARISH, LOUISIANA



Figure 1. Photos of 2004 Elmwood flooding (Credit: JP Planning Dept)

In May 2004, rainstorms overwhelmed the drainage system in Elmwood and sent stormwater flooding onto the streets. Standing water on roads stranded some Parish employees working in the Joseph S. Yenni Building. Subsequent drainage improvements, including a pumping station and retention ponds at the Clearview & Earhart Expressway interchange, have lessened periodic flooding. However, Elmwood's combination of paved surfaces and growth (its population grew by 21.9% between the 2010 - 2020 Census) make it a key strategic location for new green infrastructure.

Not coincidentally, Elmwood is highlighted in the 2013 Greater New Orleans Urban Water Plan, the product of the "Dutch Dialogues" with water experts in the Netherlands. That plan increases green space by reimagining the Yenni Building parking lot, one of the lowest elevations in the area, as a center for underground water detention. A 2016 concept plan similarly increases green space in the Yenni parking lot and adds a walking path. The vision in both plans is a more beautiful and flood-resistant Elmwood that balances traditional drainage with natural water infiltration.



# Goals

## 1. Reduce flooding and improve environmental quality by slowing, storing and cleaning high energy runoff before it enters the drainage system

- Advance Low Impact Development principles on public and private property

## 2. Create or enhance public spaces

- Pursue cost effective projects
- Ensure green infrastructure is easily accessible for the public
- Educate the public about the benefits of green infrastructure

## 3. Overcome technical, regulatory, and institutional obstacles

- Align and advance similar Parish efforts
- Enable a unified approach to green infrastructure reflected across the Parish Code of Ordinances
- Ensure fair and enforceable subdivision standards for new development that performs well in flood events and helps to support future growth in the Parish





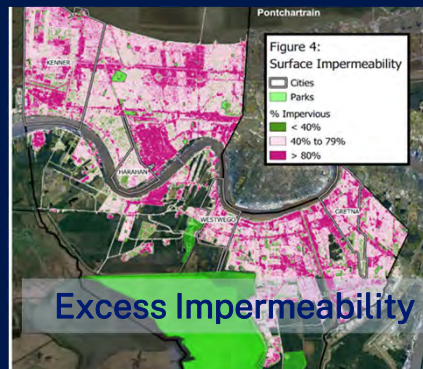
# High Risk Hazards

Intense rainfall, clayey and loamy soils, and land mass that is predominately below sea level impact, define, and constrain characteristics of the **drainage system**.



Source: Joshua Kent, LSU  
New Study Maps Rate of New Orleans Sinking (lsu.edu)

Between 1996-2018, there were **54 recorded floods** in the Parish.



**Subsidence** cracks pipes and warps and destabilizes existing built infrastructure.

As runoff moves across **impervious services**, it accumulates and transports pollutants, which are washed into Parish waters, impacting **water quality**, aquatic habitat, and fish.



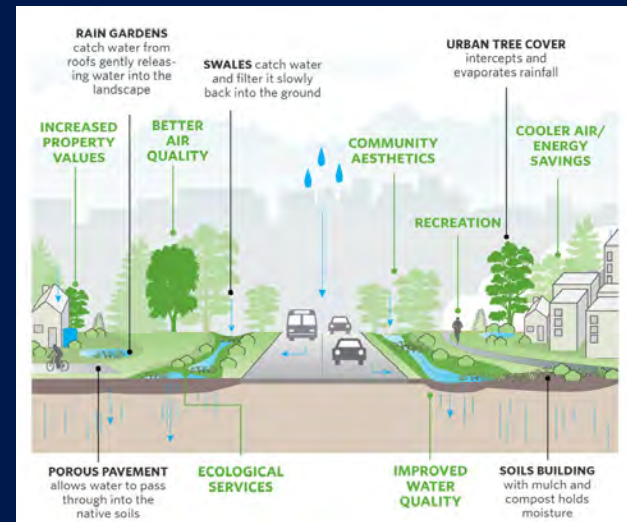
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# Solutions

- Together — when designed and applied properly — gray and green infrastructure can work in tandem to create a unified, balanced drainage network that will deliver sustainable, cost-effective benefits at scale and over time.
- When used in conjunction with gray infrastructure, green infrastructure can effectively manage the “first flush” of stormwater by slowing the speed of runoff and decentralizing its absorption into the soil.
- Green infrastructure produces significant cost savings because it tends to require less maintenance than gray infrastructure.
- The incorporation of green infrastructure elements has environmental, economic, and equity benefits (often called the “triple bottom line”) that provide layered benefits for the community.

**What does green infrastructure look like compared to traditional infrastructure?** While drainage pipes and other types of gray infrastructure are below ground, much of green infrastructure is visible at the ground level as sunken gardens, planter boxes, grassed swales, strategically planned landscaping, tree-lined boulevards, and permeable pavements.



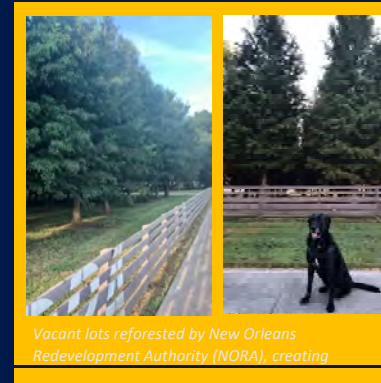
# Solutions

The Plan illustrates different types of green infrastructure elements and how they can be applied at various scales.

- Bioretention Areas
- Constructed Wetlands
- Detention Basins
- Downspout Disconnection
- Green and Blue Roofs
- Permeable Pavements
- Rainwater Harvesting
- Retention Basins
- Urban Reforestation
- Vegetated Swales and Areas

Scales include:

1. Site and Neighborhood
2. Regional or Watershed
3. Coastal Areas
4. Local Road, Highway and Bridge Development Projects





# Solutions

The Plan emphasizes the importance of data in determining project location.

The project team reviewed and summarized key findings associated with the following maps and other related data:

- Rain Volume
- Calculated Flood Depths
- Topography
- Impervious Surfaces
- **Soil Permeability and Typologies**
- Depth to Water Table
- Water Quality Data

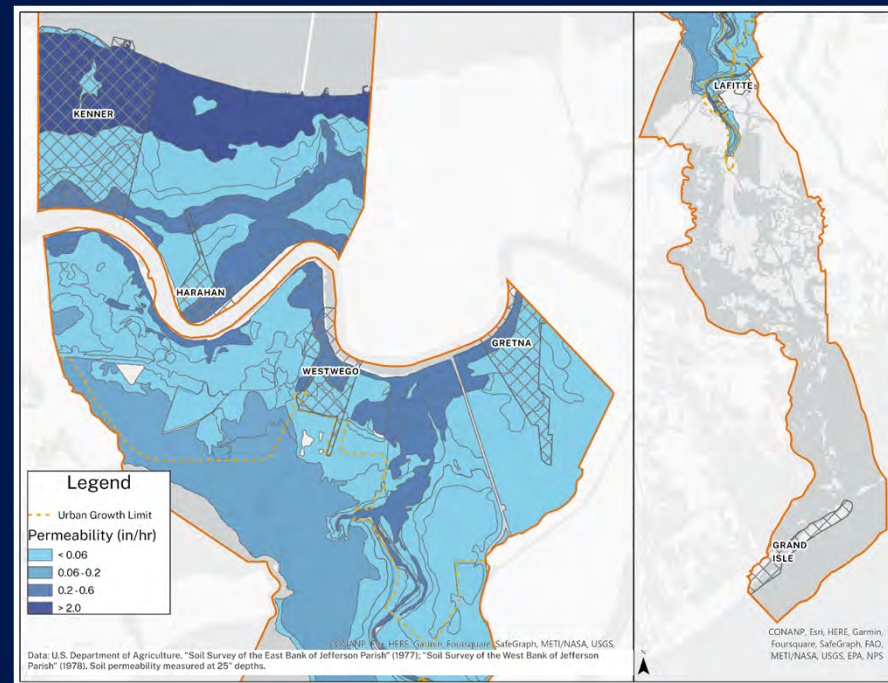


Figure 23. Measured soil permeability, Jefferson Parish (Credit: Jefferson Parish Planning Department).

**Measured soil permeability, Jefferson Parish**



# Recommendations

## DAY-TO-DAY OPERATIONS

Recommendations for new policies and programs designed to change current processes within Jefferson Parish government.

## REGULATORY

Recommended directions for text amendments to the Code of Ordinances to affect development processes.

## FUNDING and NEXT STEPS

Recommendations designed to improve project planning, create sustainable funding sources, align with regional planning, and enable more competitive project designs.

### CASE STUDY BUCKTOWN BOARDWALK | JEFFERSON PARISH, LOUISIANA

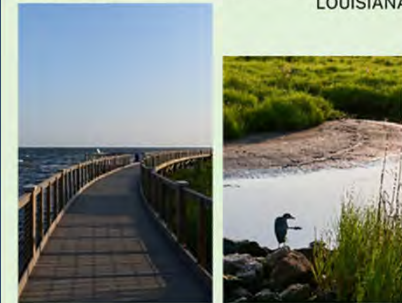


Figure 12: (Left) Bucktown Boardwalk with a view of Lake Pontchartrain (Right) Wildlife enjoying the constructed wetland as viewed from the boardwalk (Credit: Samuel Mercier)

Located along the shores of Lake Pontchartrain, the Bucktown Boardwalk provides parkgoers 1,000 feet of walkway through a 3.4-acre man-made living shoreline, a type of constructed wetland. Built with silt dredged from the lake bottom, the living shoreline is designed to provide recreational and resiliency benefits. Coastal grasses in the marsh give structure to the soil and prevent it from erosion. The wetlands create a natural barrier to protect Jefferson Parish's levees from storm surge by slowing waves from the lake. Opened in May 2020, the boardwalk and marsh are part of a \$1.7 million coastal resiliency project that also includes benches along the boardwalk, bird watching stands, two recreational pavilions, and educational signs informing residents about the importance of working towards a sustainable relationship with water through the construction of resilient green infrastructure elements.

When a funding source is identified, planned expansions to the park include a children's playground, space for the Bucktown Seafood Market, a great lawn similar to the one at New Orleans City Park, and a footbridge across the nearby 17<sup>th</sup> Street Canal connecting Jefferson and Orleans Parishes. In addition, an expansion of the marsh into a "living shoreline" between Bonabel Boat Launch and the Boardwalk and construction of an offshore breakwater with native aquatic plants is also planned. This new constructed wetland will provide storm surge protection, create a pleasant recreation area for boaters and kayakers, and build new habitat for local wildlife such as birds, crabs, and fish. Bucktown Boardwalk and the planned expansion are prime examples of how green infrastructure can provide more resilient water infrastructure while also expanding recreational opportunities for the residents of Jefferson Parish.



# Comprehensive Plan

Sec. 25-106 of the JP Code of Ordinance references various elements of the Comprehensive Plan:

- Land use and the future land use map;
- Transportation and related subplans;
- Community facilities and open space;
- Natural hazards and resources and related subplan;
- Economic development and related subplan; and
- Implementation tasks and related subarea plans.

## Recommendation:

Adopt the Green Infrastructure Plan as a subplan

- Amend Sec. 25-106 to include a reference to the Green Infrastructure Plan and address related matters

## Major Plan Linkages

