Study Title: Coastal Resilience Land Use Study

2024-4099-ZC

Purpose: Analyze existing zoning, land use, and development patterns in the Bayou Liberty and Lacombe areas of St. Tammany Parish and recommend improvements that support sustainable future development. This Study is part of the response to Ordinances C.S. 23-7251AA, C.S. 24-7510, and C.S. 24-7511, which imposed moratoriums on permits for the construction of certain buildings in St. Tammany Parish.[1]

Public Notice: 1/1/25, 1/15/25, 1/29/25

Planning and Zoning Commission Hearing: 2/4/25
Recommendation: Approve

Parish Council: 2/6/25, 4/3/25

Location: Council Districts 7 and 11

FINDINGS

1. *Parish-wide Context.* As the Parish grows, both the Council and Administration have continued to improve traffic, enhance drainage, and promote strategic growth through the adoption of the Unified Development Code, the implementation of the New Directions 2040 Comprehensive Plan, and the completion of comprehensive plans for multi-modal transportation and drainage.

2. *Study Purpose*. As these parish-wide initiatives and land management strategies are underway, community concerns and District leadership have highlighted the need to evaluate whether new development in the Study Area would exacerbate existing challenges associated with localized flooding and limited infrastructure capacity. To this effect, this Study supports leadership's decision-making on whether to: (1) permit additional residential and commercial development in the Study's undeveloped areas in accordance with existing standards, or (2) proactively require more resilient construction methods and lower densities in the Study Area to preserve critical floodplain assets, limit future flooding, and focus on improving infrastructure capacity to meet current needs (see "Summary of Community Engagement" section for more detail); and/or (3) lower densities in areas with high flood risk (CPRA future scenario +9 ft) via rezoning to conserve and protect natural functions. The Parish Council and Planning Department have directed Desire Line LLC to produce this report and analysis in order to conduct the subject study and produce recommendations in the study area.

3. *Moratoria in Effect.* The Parish Council passed moratoria in the Study Area to temporarily limit development activities while this Study is underway to: (1) support analysis of the Study Area's existing zoning, land use, and development patterns and (2) develop recommendations to reduce the potential negative impacts of future development. Moratoria include Ordinance Nos. 23-7251AA, 24-7510, 24-7511, and 24-7705.

4. *Study Goals and Methodology*. The goal of this Study is to support future sustainable development in the Study Area through the development of practical and implementable recommendations to amend local zoning districts, future land use designations, and land management strategies. The Study methodology includes:

[1] Note: Ordinance C.S. 23-7251AA was passed on May 18, 2022, and extended on October 5, 2023, to expire on May 1, 2024. Ordinances C.S. 24-7510, and C.S. 24-7511 were passed on April 4, 2024, extending the moratoria through October 3, 2024 becoming Ordinance Council Series No. 24-5408 and 24-5409. Parish Council then extended Ordinance 24-5408 with Ordinance 24-5572, extended Ordinance 24-5409 with Ordinance 24-5573 at the October 3rd 2024 Council meeting. https://mccmeetingspublic.blob.core.usgovcloudapi.net/sttammanyp-meet-9e6c4487395e43e686e08fb7ad46a4c8/ITEM-Attachment-001-8ba4bd4deedb48d5970425a29c5fe04c.pdf

a. Analysis of land history, ownership, and development patterns.
b. Research and analysis of areawide zoning, existing land use, future land use, permits, code violations, variances, and development characteristics.
c. Outreach and engagement with community stakeholders, including attendance and facilitation of mapping exercises at local events and district-wide meetings, including meetings as part of the Parish's Repetitive Loss Area Analysis efforts and reports specifically focusing on the Bayou Lacombe and Bayou Liberty areas[2].
d. Flood and coastal risk analysis based upon FEMA FIRM data, CPRA land loss and flood risk data, topographic data, and wetland data.
e. Analysis of infrastructure and drainage system design[3], capacity, and potential for cumulative development impacts within the watershed and the coastal floodplain.

This methodology aims to support Parish residents and leadership's understanding of local flood risk levels, so all may meaningfully consider recommendations proposed in this Report to reduce increased flood risk associated with future growth and development in the Study Area.

5. *Consistency with the Comprehensive Plan.* The Parish 2040 Comprehensive Plan supports coastal and ecological conservation efforts that also benefit existing residential areas. These efforts include proactive land management approaches that: (1) limit future residential and commercial development to balance existing substantial flood risk with sustainable growth in the Parish, (2) preserve sensitive natural floodplains and wetlands, (3) provide critical defense against coastal land loss, and (4) limit flood damage to life and property. For more detail, refer to the 2040 Comprehensive Plan's Land Use Goal 2, 3, 4 and 6 and the Consultant Analysis in this Report.

6. *Development Patterns.* Development patterns suggest that future growth is most likely to occur in residentially zoned areas and consist of single-family homes. Existing development in the Study Area is primarily low-density residential (i.e.; 88.2% of structures are single-family homes), with some limited clusters of commercial sites, particularly along Highway 190/W. Gause Blvd. The densest neighborhoods in the Study Area include the Ozone Woods subdivision, where 852 addresses are located within approximately 0.42 square miles, and the subdivisions just east of Mandeville, including Quail Creek, Forest Brook, Hidden Pines, and the Woodlands, where approximately 2,900 residential addresses are located within approximately 2.6 square miles. The Parish has invested in the construction of numerous drainage and detention projects in the study area, including a detention pond benefitting the Quail Creek and Forest Brook neighborhoods, however some of these projects only accommodate the currently anticipated 100-year event, and do not account for future construction or growth in the area[4].

7. *Undeveloped Parcels.* Within the Study Area, there are 18 large tracts (i.e. over 172 acres) that are currently undeveloped **(Map 2).** Notably, the largest of the undeveloped parcels, spanning 2.57 square miles and located just east of Mandeville and directly south of I-12, could potentially accommodate around 1,600 additional homes if developed under existing regulations. Undeveloped tracts in the area include the Honeybee, Maison Du

[2] The Parish published a Repetitive Loss Area Analysis for this area in 2022.
[3] www.mvn.usace.army.mil/Portals/56/St.%20Tammany%20Parish%20Louisiana%20Feasibility%20Study%20Main%20Report%206%207%202021.pdf
[4] See lists of projects in the Parish and incorporated areas: https://www.mvn.usace.army.mil/Portals/56/docs/environmental/RPEDS/STP%20SA%20-%20Appendix%20B%20-%20Plan%20Formulation.pdf and https://www.google.com/maps/d/u/0/viewer?mid=1_30uhL70k8TiY4vDY9dgllPjWC2StqOK&ll=30.38808130748413%2C-90.02950667627948&z=14

Village, and Falconbridge parcels, which currently are zoned PUD, but have not been developed in accordance with their initial approval of such zoning changes, and therefore may be rezoned.

8. The Honeybee parcels are in a highly environmentally sensitive area. With the northern portion containing critical wetlands and the southern portion in a special flood hazard area, this area is not suitable for dense residential development, so the proposed rezoning includes recommendations to rezone this site to L-1 (with a 1-acre minimum lot size).

9. The Maison Du Village parcel has not been developed as specified in the ordinance granting the PUD approval, and is in the 500-year flood zone and in close proximity to the 100-year flood zone. Due to this elevated flood risk, the future development of homes on lots smaller than 10,000 square feet (as initially proposed) is inappropriate, as it presents a potential increase to flood risk and flood damages in the area, even for residents in newly-built homes. The recommendations herein propose rezoning the Maison Du Village parcel to L-2, with a minimum lot size of one half acre.

10. The Falconbridge parcel was zoned PUD in 1977 but remains undeveloped. This area has relatively lower flood risk compared with the rest of the study area, but should still be developed within established residential district standards. The subject recommendations include rezoning this parcel from PUD to L-1, with a minimum lot area of one acre, in order to provide residential buildable area without introducing significantly higher density neighborhoods that are inconsistent with the surrounding area.

11. *Permit Trends*. Between 2019 and 2021, construction permits issued in the Study Area increased 79.3%, with 92 permits issued in 2019 and 165 permits issued in 2021. Permits again increased by 50.3% in 2022, with 248 permits issued (likely attributed to recovery activities following Hurricane Ida). Following the passage of the Study moratorium, permit requests declined to 34 in 2023. Of these building permits, 6% were commercial permits and 60.5% were for the construction of new single-family homes.

12. *Zoning in the Study Area*. Most of the Study Area is zoned for either residential uses (61.1%)[5] or for uses and activities permitted in the PF-2 Public Facilities District (30.7%), which allows for the location of public or non-profit owned facilities dedicated to historic, conservatory, environmental education and outdoor facilities, and which largely encompass the Big Branch National Wildlife Refuge and the Fontainebleau State Park (**Maps 1** and **3**). Within the Study Area, commercial and industrial zoned areas (4.03%) are primarily concentrated along major highways. Along Highway 190, the predominant zoning categories are HC-2, HC-3, NC-1, and NC-2, which permit restaurants, lodging, plant nurseries, and auto-shops, with one site zoned I-1 developed with a concrete contractor and another undeveloped site zoned I-2. Of note, 76 parcels were rezoned in the Study Area since the last comprehensive rezoning map was adopted in 2009; of which 36.7% were rezoned to commercial; 30.4% to residential; and 12.7% to industrial. These parcels occupy a relatively small amount of total land (i.e.; 2.13 square miles; or 2.7% of the Study Area).

13. *Flood Risk Summary.* The Study Area is subject to significant coastal and riverine flood risk; is located in watersheds separated by difficult to manage, low-lying, interconnected ridges; and is surrounded by 19,000 acres (38% of the Study Area) of wetlands that provide critical flood protection and storage for the Region. A significant portion of the study area is located within the most intense flood zones A, AE, V, or VE on the

[5] Residential uses are primarily composed of the L-1 Large Lot Residential District (old equivalent district = A-2(D) Suburban, 36.0%), the L-2 Large Lot Residential (old equivalent district = A-3(D) Suburban District, 7.1%), the R-1 Rural Residential District (old equivalent district = A-1(D) Suburban, 6.1%), and the R-2 Rural Residential district (old equivalent district = A-1A Suburban, 5.9%).

effective FIRM, and is where approximately one-third of the Repetitive Loss (RL) and Severe Repetitive Loss (SRL) properties are located[6]. Many single-family homes located in the Study Area are also located in flood zones with a history of flooding and are constructed on pier or piling foundations that reflect this history. However, a significant amount of homes are also constructed as "slab-on-grade" homes using fill as a method of mitigating flood risk[7]. There are also three "Areas of Special Concern[8]" designated in the study area, where a drainage basin study can be required to demonstrate if there will be adverse drainage impacts on surrounding properties, indicating an ongoing heightened level of scrutiny based on the concern that new development can contribute to local drainage challenges. Findings from the Parish Advanced Infrastructure Plan, including Drainage Master Plans for four sub-areas in the Parish, prepared by Neel-Schaffer in 2010 indicated that inefficient drainage infrastructure above Interstate 12 (I-12) combined with runoff from rainfall is increasing water volume and flood intensity within the Study Area, which would be further compounded by increasing construction density in existing undeveloped wetlands[9].

14. *Constructing to Freeboard with an Open Foundation.* This Study finds that the implementation of freeboard through open foundation systems offers a cost-effective solution to mitigate flood risks and enhance community resilience. FEMA states in their 2008 Supplement to the 2006 Evaluation of the National Flood Insurance Program's Building Standards, "One reason freeboard was introduced into building codes was to account for the inherent uncertainties associated with flood maps. Flood maps reflect the data collected at the time of mapping and should be considered a 'snapshot in time.' Changes to the land following the mapping (development or erosion) can drastically impact stillwater elevations and wave heights[10]." Considering that the flood maps in the study area are from 1984, 1989, and 1999, homeowners would benefit from consideration of how flood risk has increased since the maps were initially created.

15. *Cost of Elevation.* While the upfront cost of elevating a home to three feet above Base Flood Elevation (BFE) does increase, the long-term financial benefits far outweigh this investment. Homes elevated to this level can achieve up to 72% savings on flood insurance premiums and reduce expected flood costs by 67%.[24] In addition to financial benefits seen through elevating to freeboard, it can also prevent further repetitive loss properties, protect neighboring properties from flooding, and stabilize property values. These benefits collectively lessen the strain on disaster recovery programs, support economic growth, and enhance eligibility for state and federal funding, making freeboard a practical and sustainable strategy for addressing flooding in the Study Area.

16. *Fill vs. Pier Foundation Styles.* There are two general methods to construct or elevate a home in the floodplain; these are: "slab and fill," meaning constructing a slab home on compacted fill or "open foundation," meaning constructing a home using piers or pilings with an open area below the home. Sometimes the open area or the "crawlspace" on a pier foundation home appears enclosed through aesthetic treatment but remains open with

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[6] Repetitive Loss and Severe Repetitive Loss property designations result from numerous flood insurance claims, and therefore can under-estimate risk outside of areas in the Special Flood Hazard Area or "flood zone" where residents have a requirement to purchase flood insurance. For example, many residents can have flooding or "near-misses" where they almost receive water in their homes, but these risks are not captured by an analysis of flood insurance claims. See FEMA website for more information: https://www.fema.gov/about/glossary/repetitive-loss-structure

[7] The St. Tammany Parish Low Impact Development Guidebook recommends implementation actions that can support long-term resilience even in areas with a history of flooding and slab foundation homes. https://www3.stpgov.org/pdf/low_impact_development_guidebook.pdf

[8] See maps in Analysis section for a map showing these areas.

[9] See data on the Parish's Coastal Study here: https://www.stldcd.com/st-tammany-parish-coastal-master-plan-updates.html and the maps for the Drainage Master Plan Study here: https://baker.maps.arcgis.com/apps/webappviewer/index.html?id=1ca3b8bc64d249f69250bc4b9eb06a89 as well as the Capital Improvement Plan https://cms3.revize.com/revize/sttammanyparish/Documents/Department/Engineering/CIP%20Supplement%20(Proposed%20Budget%20Version%2010-3-24).pdf. The Parish has also undertaken a series of area-based drainage master plans completed by Neel-Schaffer.

[10] FEMA 2008 Supplement to the 2006 Evaluation of the National Flood Insurance Program's Building Standards.

vents or slats. One of the scientific bases of floodplain management is that the floodplain is an area with a limited volume or "storage capacity," and that the addition of buildings on slab foundations or the addition of fill or dirt removes storage capacity from the floodplain[11], resulting in a smaller area for water to collect, and a higher level of water above the ground in a flood. One analogy commonly used for this effect is that of a bathtub, which has a limited volume – if a large quantity of dirt were placed into the bathtub, the water would rise in the bathtub as a result.

17. *Mitigating impacts of fill.* When fill is used in the floodplain, best practices in building science in the floodplain and coastal areas dictate that minimal fill be used (up to two feet), and placed in a manner that includes slope to a natural grade within the subject property to reduce potential impacts of flood water "ramping" along fill slopes, eroding fill, or negative impacts of fill on trees and retention features[12].

18. *Vulnerable Populations.* Although most of the Study Area lies in census blocks where residents have incomes equal to or higher than the area median income, there are portions of the study area where residents are socially vulnerable or socioeconomically constrained (based on CDC SVI data - see more in the Analysis section), largely concentrated near the City of Slidell and Pearl River. Additionally, Justice40, a federal initiative to invest in communities marginalized by underinvestment and pollution, has placed three tracts within the Study Area (out of nine total in St. Tammany Parish).[13]

19. *Infrastructure in the Study Area.* Initially developed with rural infrastructure standards, the Study Area now faces challenges such as limited drainage capacity, road accessibility, sewer system connectivity, and individual system failures. Additionally, the area's drainage system is heavily impacted by Lake Pontchartrain's inundation and tides. For example, much of the drainage system relies on gravity drainage to bayous and canals that connect to the Lake, meaning that high tide and storm surge blocks stormwater from draining out of the study area. These challenges cannot be resolved through new development proposals, but rather require the retrofitting of existing systems with limited resources available locally. To address these challenges, maintaining and incrementally improving existing assets in the Study Area will support more long-term sustainable development patterns. Improvements such as road widening, installation of subsurface drainage and bike/pedestrian pathways, sewer system consolidation and inspections, and securing access agreements for improved drainage maintenance can provide area benefits. However, these improvements alone will not offset the potential cumulative impacts of further growth. To maximize the benefits of these projects, the area must both limit development generally and—where permitted to build—ensure that new construction adapts to existing and future flood risk.

20. *Sewer Infrastructure Improvements Needed.* Another significant challenge in the Study Area is the lack of available Parish consolidated sewer infrastructure and access. The Parish has a long-running strategy of submitting grant applications and requests for federal and state program funding to improve sewer infrastructure and reduce the prevalence of individual septic systems in the Area. A specific example of this is the Parish's grant program as part of the CDBG program[14] for sewer system repair and replacement for low- to moderate-

[11] LSU Ag Center – Foundations in Flood Hazard Areas. https://www.lsuagcenter.com/topics/family_home/home/design_construction/construction/foundation%20floors%20roof%20walls/foundation%20floors/foundations-in-flood-hazard-areas

[12] Ibid.

[13] See the Council on Environmental Quality's Climate and Economic Justice Screening Tool https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5

[14] https://www.stpgov.org/departments/grants/cdbg-entitlement.php

income households in the Ozone Woods area[15].

21. *Conclusion.* Development patterns, the presence of large undeveloped parcels, current and future zoning, and permit trends suggest that—without intervention—there is a high likelihood that residential development will continue in the Study Area under existing conditions and regulations. Analysis of the Study Area's flood risk suggest that (1) developing new buildings or neighborhoods in critical functioning floodplain areas or wetlands is very likely to increase flood risk for current and future residents; (2) limited new development within a flood zone is possible with construction methods that adapt to flood risk challenges (i.e. no fill, pier or piling foundations); and (3) in a scenario of "no change," only a limited number of sites within the Study Area are appropriate for the future development of new subdivisions or a sizable development for new housing units, specifically those situated outside the flood zone of Special Flood Hazard Area (SFHA) near I-12. Upon review of area-wide infrastructure, the most effective immediate response is to maintain and incrementally enhance existing service levels in the Study Area, while providing additional housing units outside the study area, in areas of the Parish less subject to high flood risk. This approach will support more sustainable long-term development patterns.

TOOLS TO CONSIDER

Tools available to Stakeholders and the Parish to immediately respond to the Study Findings, Conclusions, and Analysis are summarized herein for consideration.

Land Use and Development Tools

1. *Base Zoning District Changes*: Changes to base zoning districts can effectively reduce density in the Study Area by—for example—rezoning areas from Suburban Residential (S-1 or S-2) to the Estate (E) zoning district. This would require larger lots and result in fewer structures per acre. These districts are adopted by ordinance and mapped on the official zoning map of the Parish, which is administered by the Department of Planning and Development and Code Enforcement.
   - *Timeline/Effect:* These changes take effect as land is developed, redeveloped, or sold in the future. In these cases, new zoning requirements will determine what permits can be issued and how land can be divided.
   - *Pros*: This tool has a direct impact to reduce building density.
   - *Con*: Impacts of using this tool take many years to demonstrate results, because development happens slowly.

2. *Critical Drainage Areas:* This designation is applied to 100-year floodplains and wetlands, and trigger specific road standards, drainage basin studies, and apply a "no-net fill" provision to development sites. However, Critical Drainage Areas allow fill mitigation on-site, meaning that residents can use fill under a structure as long as they are digging a pond or retention area to compensate for the volume of fill used. Critical Drainage Areas are adopted by the Parish Council via ordinance and the Critical Drainage Area map is administered by the Department of Engineering.
   - *Pros:* This tool is an established method of applying resilient standards in the Parish.
   - *Cons:*

[15] Low- to Moderate- Income generally refers to individuals whose income is 80% or less of the area median income (AMI) and is used as a qualifying criteria for some grant programs. Source: https://catalog.data.gov/dataset/hud-low-and-moderate-income-areas

- This tool is geographically aligned with the floodplains and wetlands, and therefore does not enable the Parish to address increasing flood risk in areas outside of FEMA flood zones, which is the case within the study area.
- Any change to the critical drainage area regulations will have impacts across the Parish, including outside the study area.
- The use of fill mitigation means that a significant amount of fill can be concentrated in an area where natural floodplain storage would normally occur, thereby reducing the effectiveness of water storage on a site.
- The allowance of fill mitigation on site can result in unusual site topographic conditions (hills and valleys) that can have unintended impacts.

3. *Areas of Special Concern:* Areas of Special Concern are established based on engineering analysis that indicates areas of flooding located outside of flood zones. This designation prohibits the use of fill to alter elevation, requires two feet of freeboard home elevation above the crown of the street, and prohibits the use of retention ponds for fill mitigation. Areas of Special Concern are adopted by the Parish Council via ordinance, they appear on the Critical Drainage Area map, and are administered by the Department of Engineering.
   - *Pros*:
     - This tool is also an established method of applying resilient standards in the Parish.
     - This tool results in homes built with an open pier foundation because encapsulated fill is not allowed in these areas. This can be beneficial by allowing existing area for water retention to remain in neighborhoods.
   - *Cons*: Similar to Critical Drainage Areas, this tool is generally used for entire subdivisions based on drainage studies, and any change to these requirements will impact Areas of Special Concern outside the study area.

4. *Creation of Resilience Overlay Zoning Districts*: Overlay zones are adopted by ordinance, become part of the official parish zoning map, and can apply standards to lots and building construction in the areas where they are mapped. They are not required to be tied to a specific flood map or drainage study, and can be used to require higher regulatory standards to limit future increases in flood risk in an area.
   - *Pros*: Can be applied on a lot-by-lot geographic basis.
   - *Cons*: Impacts can take many years to demonstrate results, as the requirements of the overlay district will only apply to new construction or major alterations of buildings, and development can happen slowly over time.

Project and Capital Improvements Toolkit

5. *Flood Risk Reduction Engineered Projects*: This broad category includes improvements to drainage system components, the construction of structural flood protection like levees, and the construction of coastal resilience projects. The Parish is heavily engaged in applying for and implementing flood control (or risk reduction) projects that impact the study area and the Parish more broadly (refer to the Analysis section for more information on projects). Flood risk reduction projects, in absence of land use changes, are a partial, but incomplete solution to the flood risk profile in the study area, as the cost of projects needed to fully reduce flood risk in the area would be prohibitively high and outside the funding capacities of the Parish or the State.
   - *Pros*: Impact of these projects can be felt as quickly as they are implemented.
   - *Cons*: Partial solution, high cost, and positive impacts can be undone by further development of buildings and structures in high risk areas.

6. *Infrastructure Projects*: Improvements to sewer, water, and roads in the area are critical, and the Parish has pursued many projects like this in the Study Area. Although these projects may not highly reduce flood risk, they can prevent long-term damage to water quality and can reduce potential cascading effects of flooding combined with the failure of water, sewer, and road systems in a hurricane or flood event.
   - *Pros*: Impacts can be felt as quickly as they are implemented.
   - *Cons*: Does not resolve flood risk or recurrence, and can have a relatively high cost.
7. *Land Acquisition Projects*: One of the most effective ways to preserve open land in areas subject to flooding, like the study area, is for homeowners or stakeholder-run groups or governments to purchase and hold land in the area, thereby preventing the development of the land with neighborhoods, houses, and buildings.
   - *Pros*:
     - Impacts can be immediate upon purchase of land and this tool is the most effective way to prevent land from being developed in the future.
     - The Parish has taken significant steps in the context of the Coastal Master Plan and Wetland Plan to identify significant wetlands that can help prioritize land acquisition projects[16].
   - *Cons*: Can be costly, subject to the availability of land for purchase, and requires maintenance of the purchased land.

8. *Resilient Housing Projects*: The construction of resilient housing outside of high risk flood prone areas is a critical means to both address the demand for housing and the increased flood risk in the Study Area. One important tenet of floodplain management is "do not put people in harm's way," which many floodplain professionals interpret as a statement against the construction of new neighborhoods or houses in high flood risk areas, as this kind of construction can lead to residents experiencing devastation in a future flood event. Residents in high flood risk areas with limited income can experience compound devastation in a flood or hurricane event, underscoring the importance of available affordable housing units outside the floodplain. Potential resilient housing projects can allocate grant funding and market-based loans and financing to developers to construct new housing units that can withstand the 500-year (0.2 percent AEP) flood event or are in areas outside of the 500-year floodplain (0.2 percent AEP risk), thereby enabling affordable housing supply that meets the demands of the low- and very low-income residents in a way that does not expose residents to increased flood risk. Additional attention should be given to the type of infrastructure provided, such as consolidated sewer treatment plants, natural channel design, placement of structures in clusters away from flood sources and protection of the natural floodplain components. Grant funding could be used to construct "resilient subdivisions" designed to avoid the many pitfalls of typical development, such as recurring road and home flooding, with unique adaptive features that help homes withstand a flood event or are located in an area with low flood risk[17].
   - *Pros:* Impacts can be immediate upon program implementation; this can help satisfy demand for housing outside of areas that are critical wetlands in St. Tammany.
   - *Cons:* Costs and the availability of land can be a limiting factor.

Tools Applicable to the Study Area.

Based on the considerations listed in the findings above, the most appropriate tools to use to address the conclusions of this Study include: 1) amendments to base zoning districts, 2) creation of resilience overlay districts, 3) flood

[16] See parts of the Coastal Master Plan here: https://www.stldcd.com/uploads/1/2/3/4/123444781/app_e_-_environmental.pdf

[17] See the Parish's Low Impact Development Guidebook for more information on this: https://cms3.revize.com/revize/sttammanyparish/Low_Impact_Development_Report_2022_10_13.pdf

control and infrastructure project implementation (underway), 4) land acquisition projects, and 5) resilient housing projects.

ST. TAMMANY PARISH GOVERNMENT RECOMMENDATIONS

The St. Tammany Parish Government concurs with the recommendations below, produced by Desire Line LLC, a consultant to the Parish.

The following recommendations support sustainable development in a balanced manner by: reducing opportunities for traditional, dense residential development in the Study Area, requiring that new construction adapt to existing and future flood risk via the creation and mapping of a "Resilience Overlay" Zone, and preserving critical drainage functions.

1. *Reduce opportunities for traditional, dense residential development in the Area.*
    a. Rezone sites from L-1, L-2, and S-1 in the Study Area to E, L-1, R-1, R-2, and PF districts, specifically where the SFHA and flood sources are located. Rezone undeveloped sites with high flood risk, undeveloped sites with significant presence of wetlands, and sites subject to significant coastal flood risk to PF-2 designated conservation areas.
    b. This recommendation will ***keep residents out of harm's way by protecting existing investments and limiting new exposure to flood risk****, and will enable the preservation of the natural floodplain to act as flood storage.*
    c. Maintain existing zoning in the northwest section of the Study Area and closer to I-12.

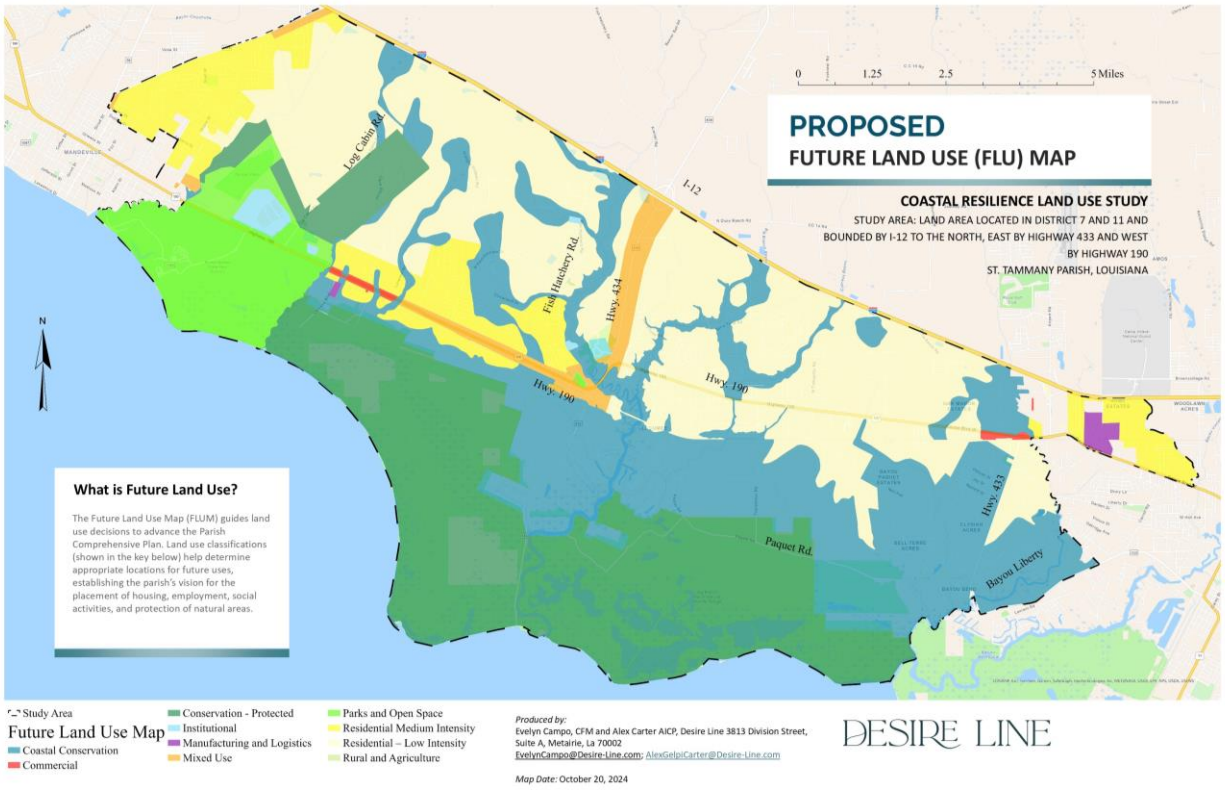
2. *Add two "Resilience Overlay" zones* to require more resilient housing construction in areas prone to flooding, to preserve resident's investments in their homes, and reduce parish-wide insurance premiums through FEMA's Community Rating System (CRS) Program. Because these requirements apply to new construction, this recommendation includes the provision that the Board of Adjustments shall not issue variances to these provisions, and that the relief to these requirements shall only be provided through a zoning change removing the overlay.
    a. The Resilience Overlay 1 Zone is recommended to (1) be mapped in alignment with the SFHA, wetlands, repetitive loss, and coastal flood risk areas (anticipating 4+ feet of water with the 100-year event) south of Highway 190 in the study area, and (2) include provisions that are specifically tailored to reduce coastal flood risk in high risk areas, such as:
        i. A prohibition on fill, including a prohibition of encapsulated fill for foundations.
        ii. A three-foot freeboard standard for new construction.
        iii. The requirement for open (pier or piling) foundations for all homes.
        iv. Limitations on outdoor storage of mechanical equipment or construction materials.

    b. The Resilience Overlay 2 Zone is recommended to (1) be mapped in the SFHA, wetlands, coastal risk areas, and areas where repetitive loss structures are clustered, including areas outside of the SFHA, and (2) to include provisions such as:
        i. A "zero net fill" requirement, allowing the use of retention areas as fill mitigation and allowing encapsulated fill foundations.
        ii. A three-foot freeboard standard for new construction.

3. *Partner with Habitat for Humanity Northshore East and West to support construction of resilient housing and resilient subdivisions located outside of the study area.* This strategy can provide the Parish with more housing choice options, a blue-print for more sustainable development patterns, and enable low- to moderate- income households and those that are income-constrained or living on a fixed income to move away from high flood risk areas and into more dependable and resilient homes that still have access to the jobs and natural resources in St. Tammany.

THE PLANNING COMMISSION HEREBY VOTES ON THE FOLLOWING MOTION TO AMEND THE FUTURE LAND USE MAP AND COMPREHENSIVE PLAN

Motion: Extend the Coastal Conservation category north to the undeveloped land around Ozone Woods, Belle Terre Acres, and Bayou Pacquet Estates and amend the FLUM and Comprehensive Plan as follows:

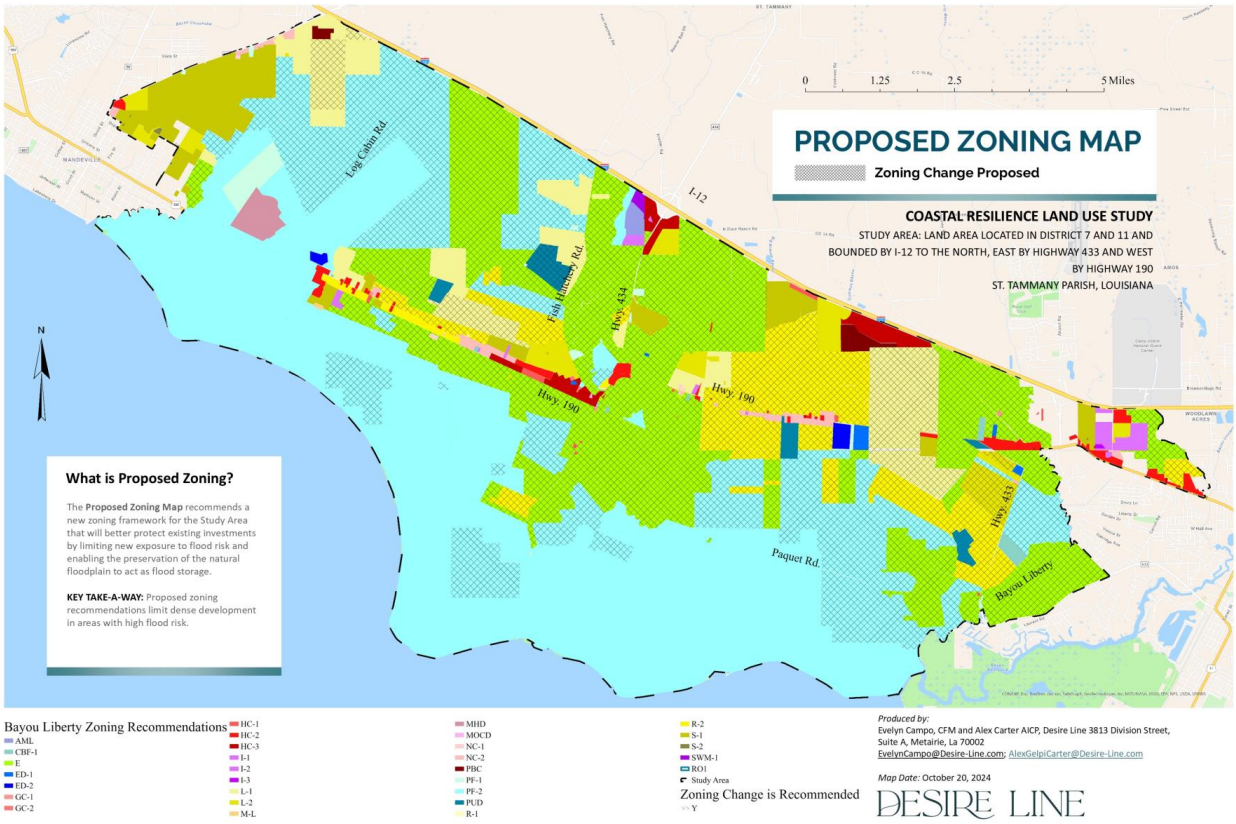


That the Parish Comprehensive Plan of the Parish is hereby amended to redefine the Coastal Conservation future land use category as follows:

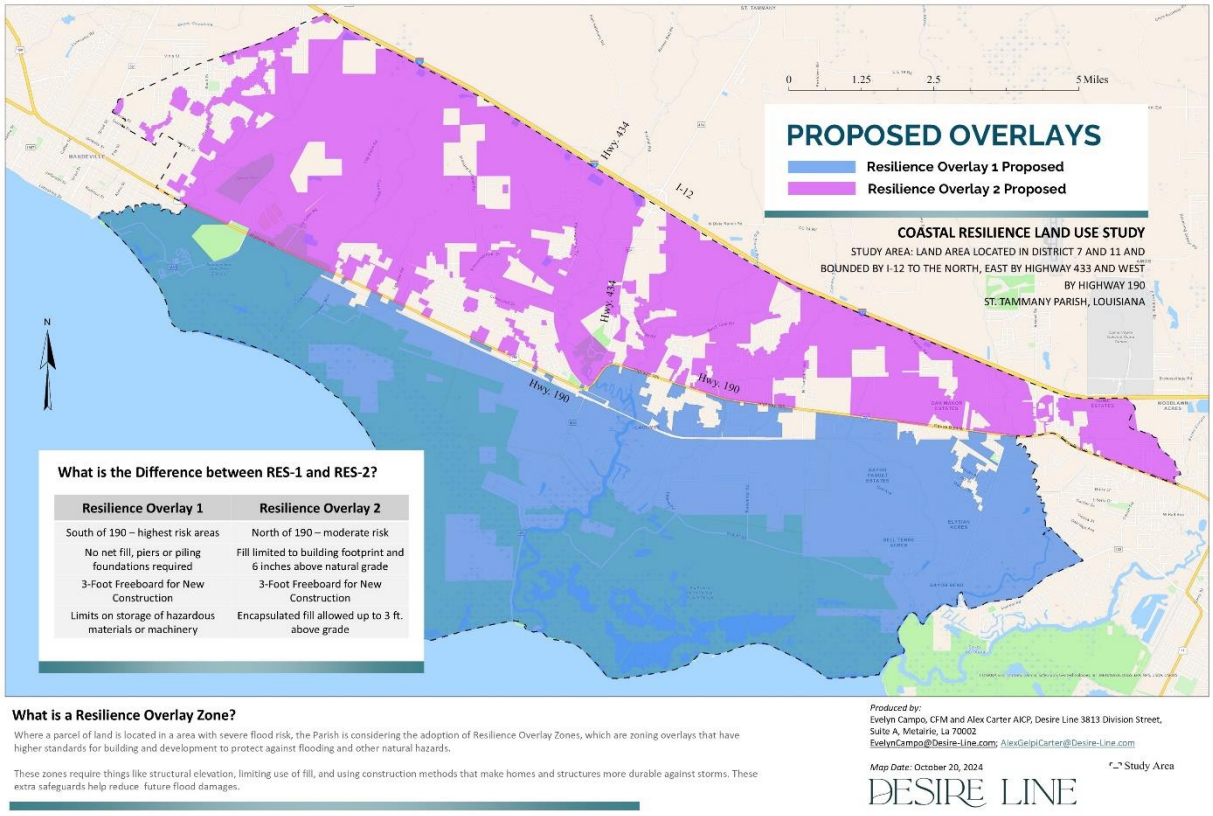
Page 18 of the Comprehensive Plan:

Coastal Conservation areas are within **the vicinity of** the Parish's "coastal zone" (all areas south of Interstate 12, per Louisiana Revised Statute § 49:214.24) ~~that are not currently developed with intense uses~~, and are within the 100-year floodplain **or at significant risk of future flooding**. Coastal Conservation areas are critically important for a variety of fisheries and wildlife, essential to water quality and groundwater recharge, and should be conserved to ensure species and habitat sustainability. Coastal wetlands also serve as storm buffers, and help to minimize storm runoff and subsequent flood damage to area homes and businesses. The areas include undisturbed coastal marshes, swamps, and tidal wetlands and adjacent lands accommodating very low-intensity human land uses - namely, highly dispersed residences, though low-impact agricultural, commercial, and public and institutional uses, such as recreation, tourism, research, and education may be appropriate. **Where this future land use category is placed in areas that are currently developed, the Parish should aim to reduce building density over many decades, while providing safer areas for residential communities to form.**

Map 1: Recommended Base Zoning Districts

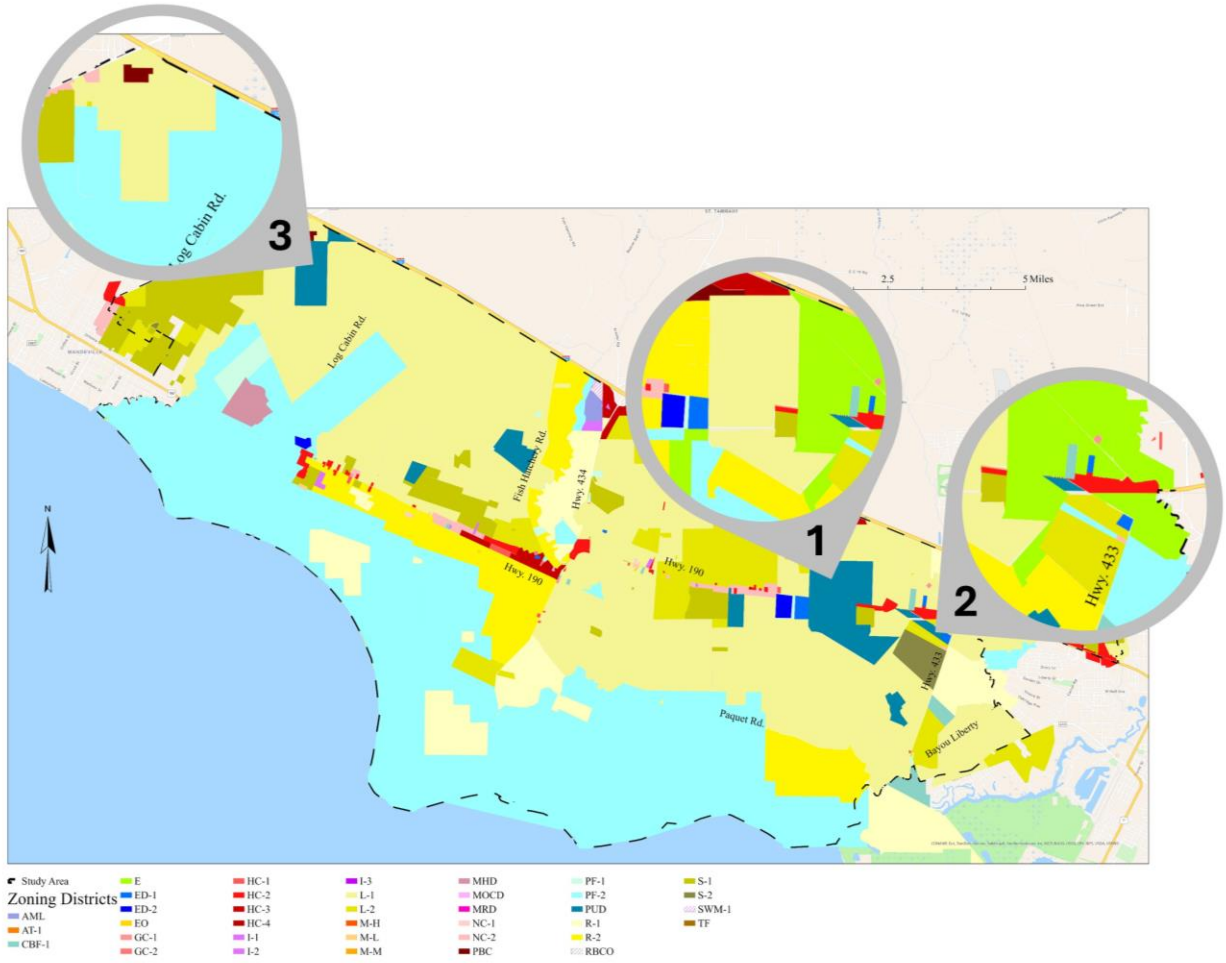


Map 2: Recommended Resilience Overlay District Map



Map 3: Parcels Recommended for Rezoning

Map 4 Current Zoning Map with Proposed Rezoning of PUD and TND Sites

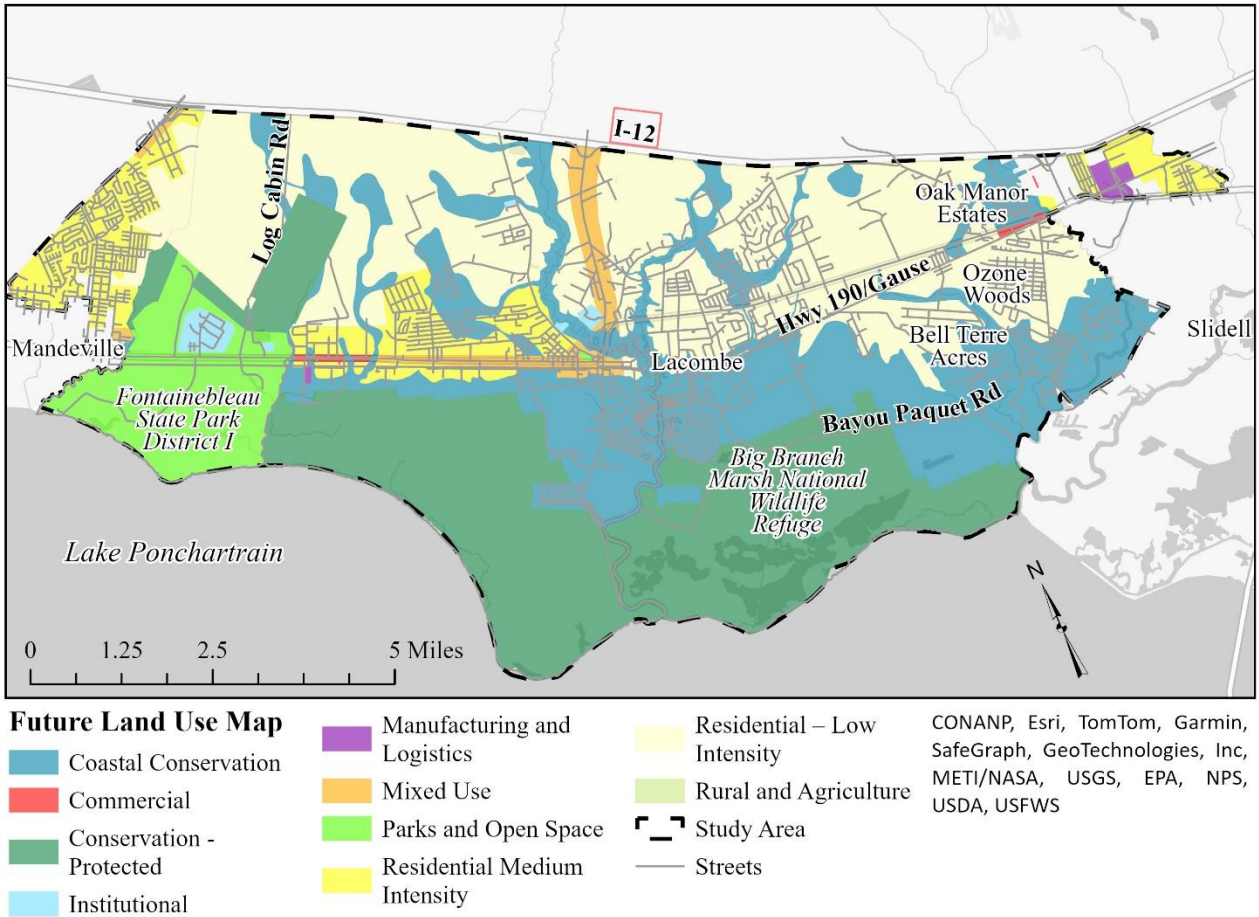


Recommended Rezoning Table

Map #	Ord. #	Underlying Zoning Class	Existing Overlay	Recommended Zoning Change	Justification
1 Honeybee Parcels 133553, 133554, and 110365	09-2020	NA	PUD	**L-1 Large Lot Residential** • 1 acre minimum lot size	Parcels that make up the PUD are currently undeveloped. Critical wetlands are located in northern parcels, and the southern parcel is in a flood zone. Rezoning these parcels reflects a proactive approach to sustainable land use planning that align with the prioritization of safety, environmental stewardship, and long-term community resilience. This approach ensures that these undeveloped parcels are consistent with the surrounding zoning classifications and allowable density and are used in a manner consistent with their environmental and hazard characteristics.
2 Maison Du Village (ZC05-10-072) Parcel 112936	06-1242	NA	PUD	**L-2 Large Lot Residential** • ½ acre minimum lot size	Rezoning the parcel located along Sylve Rd. aligns with the character of adjacent sites, creating a cohesive development pattern. The proposed rezoning to the parcel along Sylve Rd. is located in close proximity to a flood zone, requiring lower density to minimize flood risks. The proposed ½ acre lot size is more suitable to this area, as it ensures responsible and sustainable development. Additionally, this parcel has not received a work order approval. Rezoning to L-2 provides a practical and balance approach, accommodating development potential while addressing current environmental and safety considerations.
3 Falconbridge (ZC10-07-077) Parcel 54494	10-2398	L-2 Large Lot District	PUD	**L-1 Large Lot Residential** • 1 acre minimum lot size	Despite being zoned as a PUD since 1977, this parcel remains undeveloped, suggesting that the existing zoning designation is no longer suitable or effective for this site. Topographic and LiDAR imaging also shows that this parcel, and directly surrounding sites are surrounded by higher land, creating a "bathtub" effect. Water entering the

					parcel cannot drain efficiently due to its reliance on gravity drainage. This condition significantly limits the feasibility of higher density development associated with a PUD. The proposed L-1 zoning district promotes low-density development, which is more suitable for this site's unique topographic and drainage constraints and is consistent with the surrounding zoning. The reduced density minimizes impervious surfaces allowing more natural absorption of rainfall and mitigating flood risks in this area as well as areas south of the site.

Map 5: Future Land Use Map



SUMMARY OF COMMUNITY ENGAGEMENT

Understanding existing conditions, best practices, emerging trends, and challenges is key to the success of this project. Collaboration and engagement with the public helps ensure accuracy of data with regards to existing conditions and supporting identification of emerging trends and lands use challenges. Community engagement allows community members to share their opinions, insights, and specialized knowledge of their neighborhood and local conditions. Community engagement involved presenting at and/or tabling three in-person meetings:

1. Bayou Liberty Association Meeting (2/28)
2. District 7 Community Meeting (3/28)
3. Bayou Liberty Community Picnic (4/13)
4. Community Meeting (TBD) to discuss draft recommendations (zoning/land use/funding)

Mark the Map Activity (to be filled out after future engagement events)

Images 1 & 2. Lacombe Resident Photographs of Flash Flooding on April 9, 2024.

Source: Julia Rogers, Lacombe Resident.

Along with in-person meetings, the Parish has also encouraged community members to reach out with questions, comments, and share information via email or phone call. Findings (*as of 9/3/24)* from community engagement demonstrate that residents from the Study Area express a strong community commitment to preserving the environmental and historic integrity of the area, including its critical floodplain functions and wetlands by limiting future development that may increase flood risk.

1. *Preservation Efforts in the Study Area.* Residents have collected and digitized a significant amount of information dating back to the 1950s, detailing efforts to control commercial development and preserve the area's natural and historic heritage. Community members have historically opposed high-impact commercial and residential developments in order to preserve the wetlands and support their healthy ecological functions. The community has also engaged outside experts, such as archaeologists, to support their position of limiting future development. In this respect, the community has historically been opposed to high density development and values preservation of the natural landscape.

2. *Protection of Indigenous and Historical Sites*. Residents emphasize the importance of preserving indigenous sites and maintaining the historic character of the area. Along with areas of archaeological significance, the Study Area includes historic buildings valued by community members.

3. *Community and Environmental Advocacy.* Residents highlighted flood control, environmental degradation, and the preservation of local wetlands and green space as important considerations in the development of the Study Area. Residents have taken proactive steps to lobby for developments that respect the area's environmental constraints.

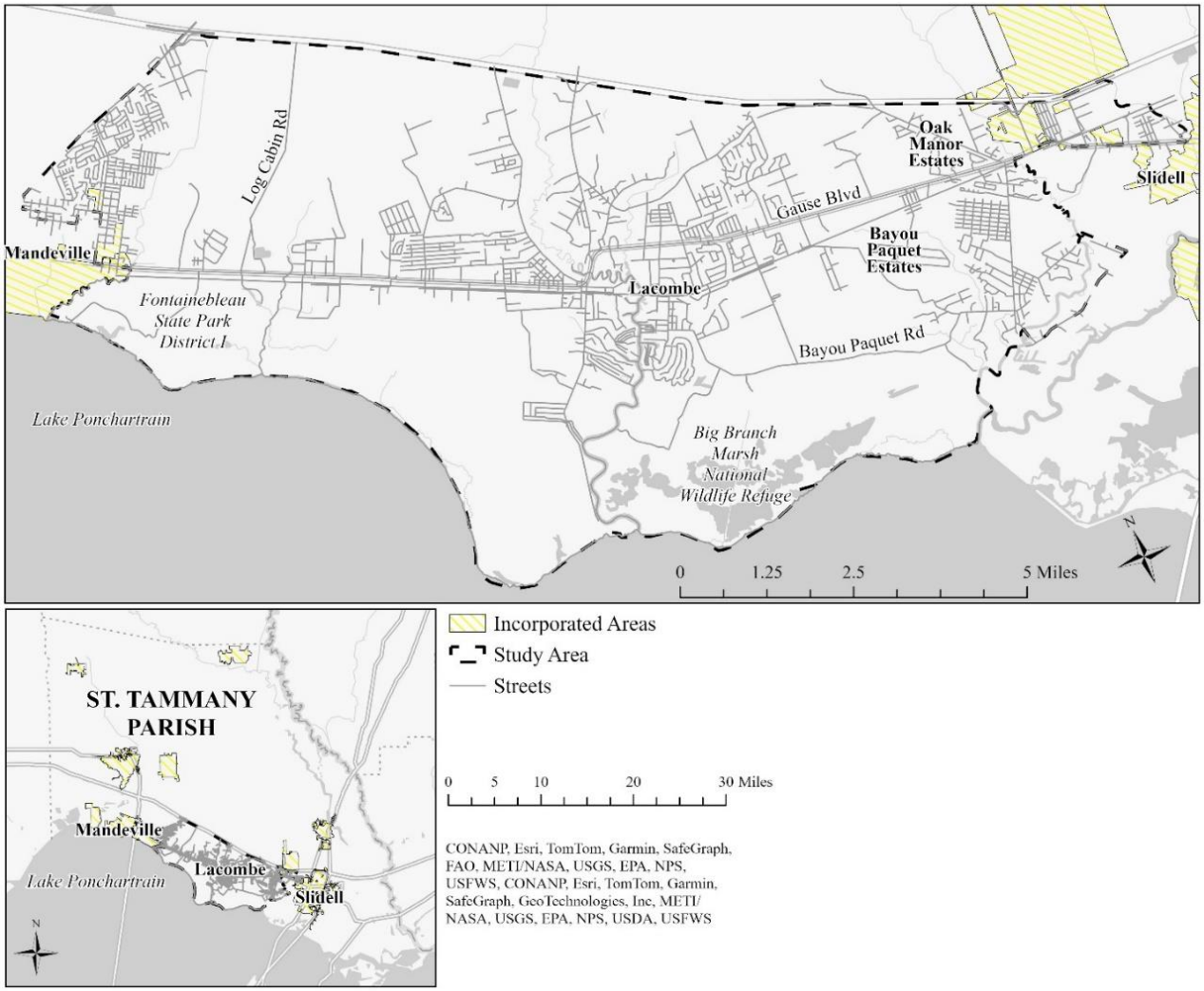
4. *Future Development Concerns.* Interactions with residents highlighted concerns about potential developments that could affect local wetlands and historical sites, such as the possible construction of large warehouse facilities or high-density residential developments. Residents are concerned that future high-density developments will cause further flooding and impact the unique character of the area.

CONSULTANT ANALYSIS

Study Area

This Study includes areas of unincorporated St. Tammany Parish, bounded by Interstate 12 to the north, Highway 1088 to the west, Highway 433 south of I-12 to the east, and by Lake Pontchartrain to the south (**Map 1**). The Study Area is approximately 79.2 square miles and encompasses sections of Parish Council Districts 7 and 11. Several blocks of the incorporated cities of Mandeville and Slidell are included in the far eastern and far western sections of the Study Area.

Map 1. Study Area.



Background, Purpose and Need

Parish-wide Context

As the Parish grows, the Council and Administration have continued to improve traffic, enhance drainage, and encourage strategic development. These efforts are guided by the adoption of a Unified Development Code, the New Directions 2040 Comprehensive Plan, and completion of multi-modal transportation and drainage plans.

Relationship to the Unified Development Code Rewrite.

In December 2023, the St. Tammany Parish Council approved the adoption of a Unified Development Code (UDC), which consolidates all local rules and regulations for land development in a single code. The UDC took effect in August 2024. This Study includes an analysis of the impact of the UDC on the Study Area and makes recommendations within the context of the newly adopted UDC zoning districts and regulations. For Study clarity, the zoning districts that existed prior to the adoption of the UDC update in December 2023 are referred to as the **"old zoning districts,"** the zoning districts included in the UDC update in December 2023 are referred to as the **"current zoning,"** and the zoning recommendations part of this Study are referred to as the **"proposed zoning."** Conversion charts for each zoning district are located in **Appendix B.**

Study Purpose.

While these parish-wide plans and land management strategies are underway, community concerns and District leadership spurred the need to assess whether new development in the Study area would intensify existing challenges associated with local flooding and limited infrastructure capacity. To this effect, this Study supports leadership's decision-making on whether to: (1) permit additional residential and commercial development in the Study's undeveloped areas in accordance with existing standards, or (2) proactively require more resilient construction methods and lower densities in the Study Area to preserve critical floodplain assets, limit future flooding, and focus on improving infrastructure capacity to meet current needs (see "Summary of Community Engagement" section for more detail).

Moratoria in Effect.

The Parish Council passed moratoria in the Study Area to temporarily limit development activities while this Study is underway to (1) support analysis of the Area's existing zoning, land use, and development patterns and (2) develop recommendations to reduce the potential negative impacts of future development. Moratoria include:

a. **Ordinance C.S. 23-7251AA**, which placed a moratorium on the receipt of submissions by the St. Tammany Parish Planning and Zoning Commissions for the re-subdivision or re-zoning of property zoned A1-A8 Residential and/or the issuance of permits for residential construction or placement of any residential building structures on property zoned A1-A8 Residential on property bounded to the north by Interstate 12, to the west by Old Todd Rd and Transmitter Rd, and bounded to the east by Northshore Blvd and Hwy 433 south of I-12; and

b. **Ordinance C.S. 24-7510,** which placed a moratorium on the receipt of submissions by the St. Tammany Parish Department of Planning and Development and/or the issuance of permits by the Department of Permits and Inspections for construction or placement of any new building structures in Forest Glen Subdivision, located in Council District 7; and

c. **Ordinance C.S. 24-7511**, which imposed a moratorium on the receipt of submissions by the St. Tammany Parish Department of Planning and Development and/or the issuance of permits by the Department of

Permits and Inspections for the construction or placement of any new residence or dwelling within Tammany Forest Subdivision, located within the geographic boundaries of Council District 7, east of Hwy 434 and on the east and west sides of Berry Todd Road.

Study Goals and Methodology.

The goal of this Study is to support future sustainable development in the area—which is subject to significant flood risk—through the development of practical and implementable recommendations to amend local zoning districts, future land use designations, and land management strategies. The Study methodology includes:

a. Analysis of land history, ownership, and development patterns.

b. Research and analysis of areawide zoning, existing land use, future land use, permits, code violations, variances, and development characteristics.

c. Outreach and engagement with community stakeholders, including attendance and facilitated mapping exercises at local events and district-wide meetings.

d. Flood and coastal risk analysis based upon FEMA FIRM data, CPRA land loss and flood risk data, topographic data, and wetland data.

e. Analysis of infrastructure and drainage system design, capacity, and potential for cumulative development impacts within the watershed and the coastal floodplain.

This methodology aims to support Parish residents and leadership's understanding of local flood risk levels, so all may meaningfully consider recommendations proposed in this Report to reduce increased flood risk associated with future growth and development in the Study Area.

Development Patterns

Early Development

The area now called St. Tammany Parish was first settled by humans approximately 8,000 years ago, and the Tchefuncte, Choctaw, Biloxi, Pensacola, Acolapissa, and Houma tribes resided in the region when European colonists arrived in the seventeenth century.[18] Some of the oldest European development in the Parish occurred along Bayou Liberty and in the Lacombe area: a 1722 census listed several European settlers as living in Lacombe, and Camp Salmen Lodge and the Francois Cousin House were built in 1789 on Bayou Liberty[19]. Camp Salmen operated a ferry across the bayou from the early 1800s into the 1900s, when the property was acquired by the Salmen Brick and Lumber Company.[20] In 2006, Salmen Lodge was added to the National Register of Historic Places. In the eighteenth and nineteenth centuries, the community established along Bayou Liberty came to be called "Bonfouca" and its residents produced building materials, such as brick, lumber, and shingles that were exported to New Orleans.[21]

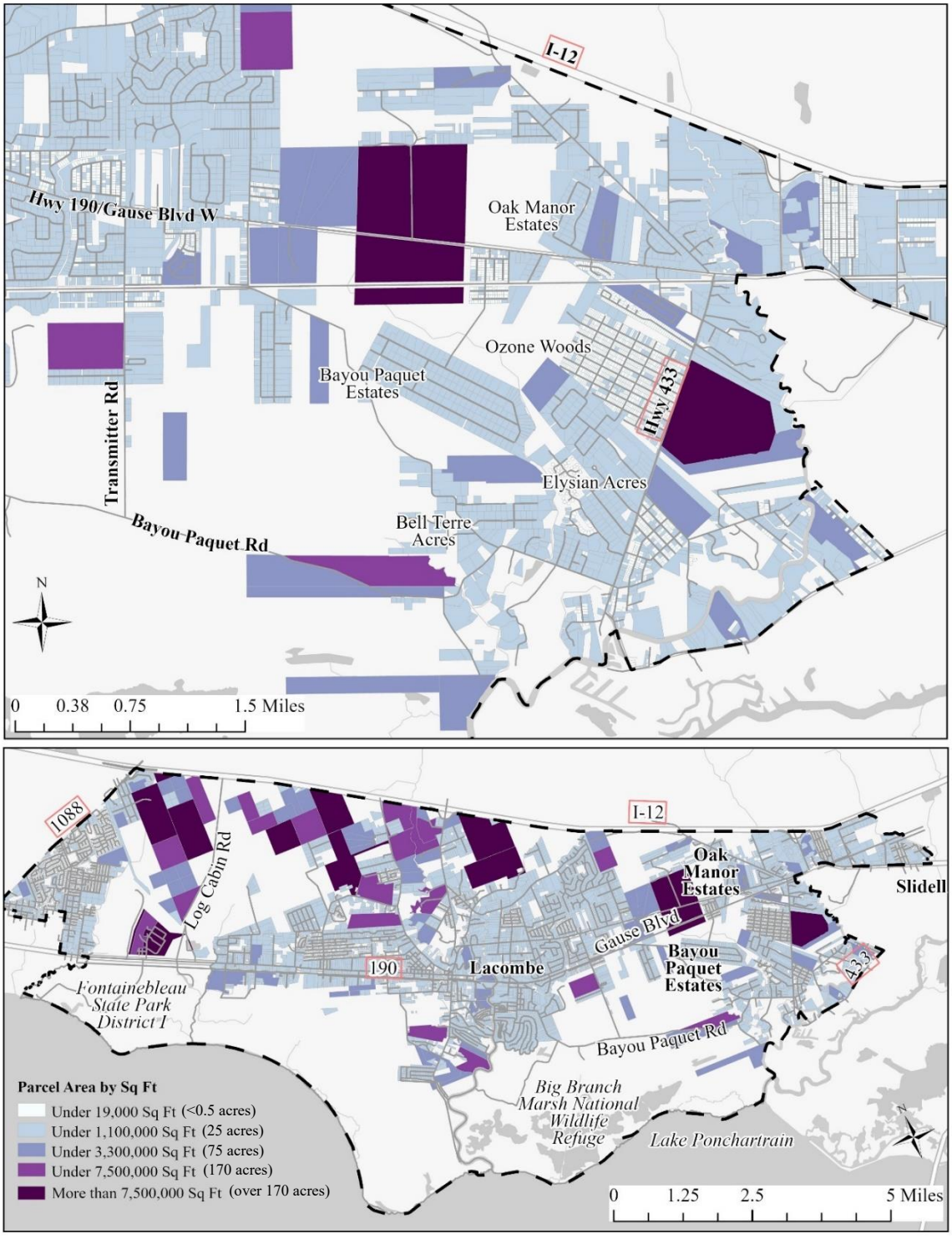
[18] New Directions 2040 Comprehensive Plan. (2022). St. Tammany Parish Government. https://www3.stpgov.org/pdf/ND2040_Comprehensive_Plan.pdf
[19] St. Tammany Parish Library. (2019). History At A Glance: Lacombe, Gateway to the Big Branch Marsh National Wildlife Refuge. https://www.sttammanylibrary.org/blogs/post/history-at-a-glance-lacombe-gateway-to-the-big-branch-marsh-and-wildlife-refuge/
[20] Camp Salmen Nature Park. *Discover our History*. http://www.campsalmennaturepark.org/index.php/info/history
[21] Friends of Camp Salmen Nature Park, Inc. *A History Of The Old Trading Post At Camp Salmen On Bayou Liberty*. https://www.friendsofcampsalmen.org/salmen-lodge-updates/camp-salmen-np-salmen-lodge-photos-history/

Existing Development Patterns

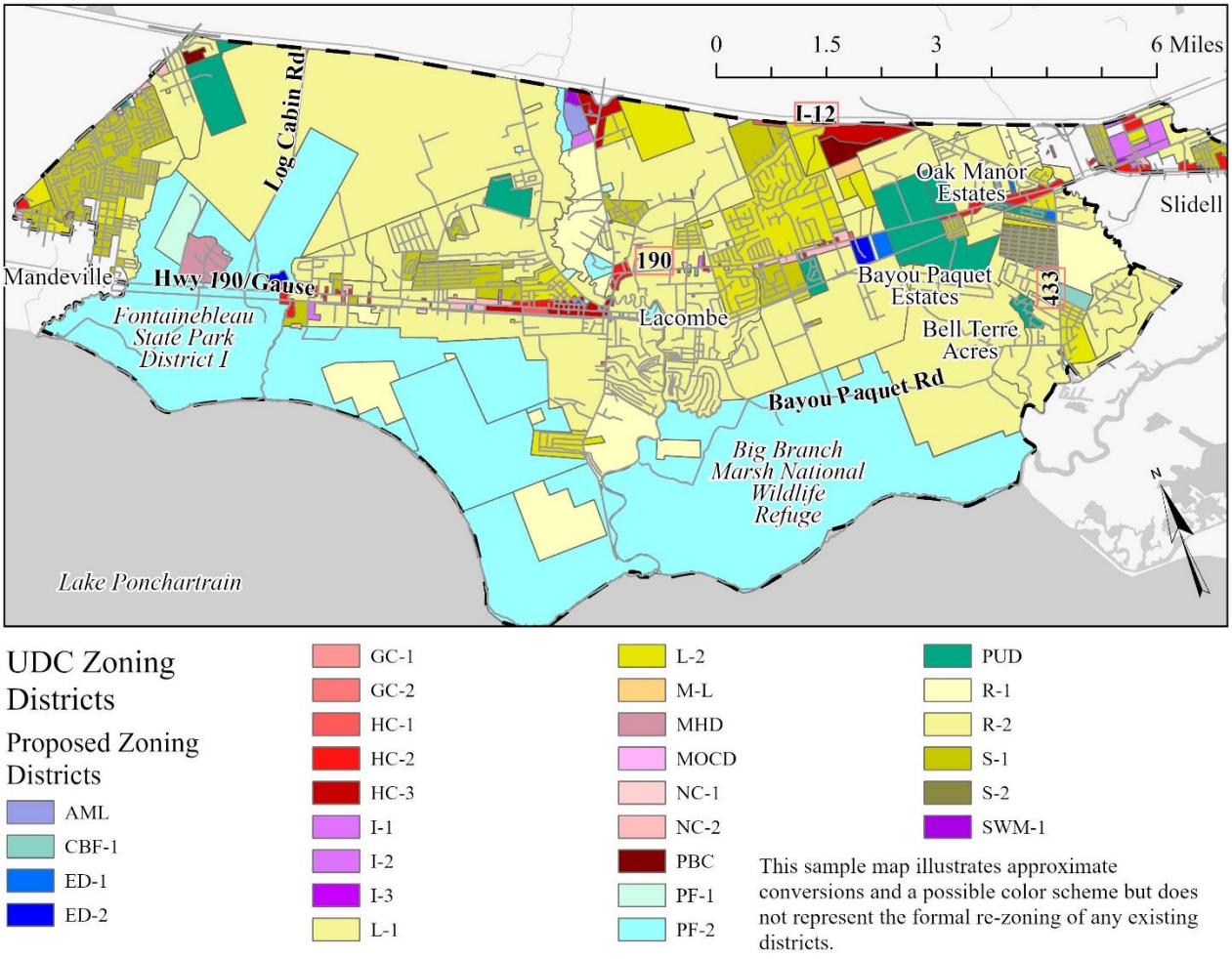
The Study Area contains approximately 79.2 total square miles, including approximately 11,080 structures. In analyzing these structures, most of existing development is residential (at least 88.2%, or 9,772 structures); and 293 structures (or 2.6%) are commercial or industrial. Existing commercial businesses are generally local businesses or small-scale stores, such as gas stations, coffee shops, and a bed and breakfast. Parcel sizes vary widely: while some large parcels remain undeveloped, residential neighborhoods vary from estate-sized parcels (7 acres) to more characteristic suburban lots (1 acre). In Bayou Paquet Estates, a residential subdivision with 161 parcels, the average parcel size is approximately 1.56 acres; by comparison, in the nearby Ozone Woods subdivision, the average parcel size is approximately 0.22 acres (**see Map 2**).

Map 2 on the following page highlights sites in the Study Area larger than 172.2 acres. Many of these sites, particularly west of Lacombe, are just south of the I-12 corridor in areas better protected from storm surge and flooding from Lake Pontchartrain. See the *Zoning* section for more detail.

Map 2: Parcel Area (2022).



Map 3. Current Zoning.



Zoning

Under the Parish's existing zoning classifications, the Study Area is largely comprised of two zoning districts: the L-1 Large Lot Residential (old zoning equivalent = A-2(D) Suburban District) makes up 36.0% or 28.8 square miles of the area, while the PF-2 Public Facilities District makes up 30.6% or 24.6 square miles of the total area (see **Table 1**). The PF-2 Public Facilities District is the zoning district for both the Big Branch Marsh National Wildlife Refuge and Fontainebleau State Park District I, which encompass much of the marshland along the shore of Lake Pontchartrain. Overall, 32 zoning districts are in the area, where most occupy minimal square mileage: for example, 13 parcels are zoned commercial in the Area and represent approximately 2.95% of the total Study Area.

Outside of the Study Area, along the I-12 corridor, are hubs of highway commercial and industrial zoning, typically close to or in between city centers. Planned Unit Developments, or PUD zoning districts, are located in Eden Isles to the east of the Study Area and scattered north of Abita Springs and Mandeville and both north and south of I-12. PUDs are designed to encourage flexibility in land development, creative design, more orderly development and to promote and preserve the scenic features of a site. The objectives of the St. Tammany Parish PUD districts include

environmentally sensitive design that is of a higher quality than would be possible under the regulations otherwise applicable to the property.

Commercial and Industrial Development in the Study Area.

Highway 1088 mainly features NC-2 zoned commercial properties, including the Mandeville Sports Complex and the Wrestling Academy of Louisiana. On Highway 434, zoned areas include HC-3, SWM-1, I-1, and I-2. This includes two waste management companies, but commercial activity is limited. Along I-12, there is minimal commercial or industrial development, with one parcel zoned HC-3 and one zoned PBC, both currently undeveloped. One tattoo shop is developed along Highway 433 on a parcel zoned HC-1. Finally, the Gause Blvd West corridor is a hub of commercial activity, primarily zoned HC-2 and NC-2, and containing a diverse mix of shops, lodgings, restaurants, and a flea market.

PUDs in the Study Area.

The Study Area currently contains 14 Planned Unit Developments (PUDs), 6 of which have been developed. District 7 contains a total of 5 PUDs; 2 of which have been developed. District 11 contains 9 PUDs; 4 of which have been developed. In District 7, 3 of the PUDs were zoned by Ord. No 09-2020, or the 2009 Comprehensive Rezoning Ordinance. The remaining 2 PUDs were zoned by Ord. No 10-2398 and Ord. No 16-3651. Six PUDs in District 11 were zoned by Ordinance No. 09-2020, and the remaining sites were updated through the adoption of Part II: The Unified Development Code (Ordinance No. 23-5339).

Three PUDs in District 11 (previously 3 TND sites), “Honeybee”, were zoned through the 2009 Comprehensive Rezoning Ordinance. One of these sites was the subject of a request for an underlying zoning reclassification to A-4 Single-Family Residential District (2021-2354-ZC) and Planned Unit Development Overlay (2021-2355-ZC); both of which were denied by the Parish Council on March 3, 2022 (Resolution No’s. C-6581 and C-6582). Most recently, this site was the subject of a rezoning request for a reclassification from TND-2 (Traditional Neighborhood Development) to TND-2 (Planned Traditional Neighborhood Development). Development plans proposed 780 single-family homes, 350 apartments, 180 townhouses, and 10,000 sq. ft. of commercial space. The St. Tammany Parish Zoning Commission denied this request on Nov. 2, 2022, and this decision was upheld by the Parish Council on Dec. 1, 2022. This proposal brought up concerns regarding flooding and drainage issues in the area, which ultimately lead to the passing of moratorium Ordinance C.S. 23-7251AA.

One of the major changes in the UDC rewrite was the elimination of the TND Districts and changes to the Planned Unit Development (PUD) standards. The changes to the PUDs standards were intended to advance more innovative, mixed-use development approaches that were not permitted in the old zoning districts. These changes made PUD more consistent with the Comprehensive Plan when completed in accordance with the PUD approval process. See **Appendix C** “PUD Standards and Requirements” for more details.

Rezoning Requests

23.8% (79 parcels) of the Study Area have been rezoned since the existing zoning map was adopted in 2009. Of the 79 re-zoned parcels, 36.7% are now commercially zoned, 30.4% are residentially zoned, and 12.7% are industrially zoned. These rezoned parcels occupy a relatively small amount of total study land area, with only 2.13 square miles rezoned since 2009 (representing 2.7% of the total land area in the Study Area).

Table 1 groups and simplifies the types of zoning districts together to clarify permitted land uses in the Study Area. 61.1% of the land in the Study Area is zoned for single-family residential uses, while multiple-family residential uses

are permitted on only 3.3% of land area[22]. Public facilities zoning districts comprise 31.9% of total land area, while commercial and industrial uses make up only 3.6% of land area together. As seen in **Map 3**, commercial zoning is mainly located along Highway 190/Gause Boulevard west, the main transportation corridor in the Study Area. Most of the land area zoned for commercial use are zoned either HC-2 or HC-3, both Highway Commercial Districts, and together represent approximately 1.6% of the total study land area.

[22] Note: While a permitted use, areas zoned for multi-family development does not indicate such uses are present.

Table 1. Current and Old Zoning Districts in the Study Area.

Old Zoning District	Current Zoning District (per UDC Rewrite)	Total Square Miles	Percent of Area within Study Area
A-1(D) Suburban	**R-1 Rural Residential**	**4.90**	**6.11%**
A-1A Suburban	**R-2 Rural Residential**	**4.76**	**5.94%**
A-2(D) Suburban	**L-1 Large Lot Residential**	**28.82**	**35.96%**
A-3(D) Suburban	**L-2 Large Lot Residential**	**5.69**	**7.10%**
A-4 Single-Family Residential	S-1 Suburban Residential	4.40	5.49%
A-4A Single-Family Residential	S-2 Suburban Residential	0.42	0.53%
A-6 Multiple-Family Residential	M-L Low Multi-Family Residential	0.08	0.10%
AML Advanced Manufacturing and Logistics	Same District Title	0.11	0.14%
CBF-1 Community-Based Facilities	Same District Title	0.33	0.42%
ED-1 Primary Education	Same District Title	0.11	0.14%
ED-2 Secondary Education	Same District Title	0.13	0.16%
EO Entertainment Overlay	*Deleted*; lot converted into HC-2 Highway Commercial	0.01	0.01%
HC-1 Highway Commercial	Same District Title	0.09	0.11%
HC-2 Highway Commercial	Same District Title	0.63	0.79%
HC-3 Highway Commercial	Same District Title	0.64	0.80%
I-1 Industrial	Same District Title	0.14	0.17%
I-2 Industrial	Same District Title	0.22	0.28%
I-3 Heavy Industrial	Same District Title	0.01	0.01%
MD-1 Medical Residential	MOCD Medical Office	0.01	0.01%
MD-3 Medical Facility	MHD Medical Hospital	0.35	0.43%
NC-1 Professional Office	NC-1 Neighborhood Office	0.02	0.02%
NC-2 Indoor Retail and Service	NC-2 Neighborhood Commercial	0.11	0.13%
NC-3 Lodging	NC-2 Neighborhood Commercial	0.01	0.01%
NC-4 Neighborhood Institutional	NC-2 Neighborhood Commercial	0.28	0.35%
NC-5 Retail and Service	GC-1 General Commercial	0.01	0.01%
NC-6 Public, Cultural and Recreational	GC-2 Public, Cultural, and Recreational	0.01	0.01%
PBC-1 Planned Business Campus	PBC Planned Business Campus	0.21	0.27%
PF-1 Public Facilities	Same District Title	0.46	0.58%
PF-2 Public Facilities	**Same District Title**	**24.56**	**30.65%**
PUD Planned Unit Development	Same District Title	1.25	1.56%
SWM-1 Solid Waste Management	Same District Title	0.04	0.06%
TND-2 Traditional Neighborhood Development	*Converting* to PUD Planned Unit Development	1.33	1.66%
	Approximate Total	**80.1***	**100.01%****

*Note: Total is slightly higher than the 79.2 square mile Study Area as some districts cross the Study Area boundaries and were modified to approximate the Study Area, resulting in minor data discrepancies. Numbers are approximate.
**Note: Percents were rounded to two decimals, resulting in a percent total higher than 100%.

Table 2. Current Zoning Districts by Category of Use.

Type of Use	Number of Districts	Percent of Land
Single-family	6	61.1%
Multi-family	3	3.3%
Commercial	13	3.0%
Facilities (educational, recreational, religious, etc.)	5	31.9%
Industrial (including sewer management)	5	0.6%
Total	**32**	**99.9%***

Note: Percentages were rounded to one decimal, resulting in slightly less than a total of 100%.

The five zoning districts that represent the greatest percentage of land in the Study Area are summarized as follows:

Table 3. Zoning District Summaries

L-1 Large Lot Residential District
(28.8 square miles or 35.96% of area)

Category	Old Zoning District	Current Zoning District
	A-2(D) Suburban	**L-1 Large Lot Residential**
Purpose	Intended for single-family residential environments on large, multi-acre lots in less populated areas to preserve low densities. Commercial uses are strictly prohibited.	Intended for single-family residential environments on moderate-sized lots, served by central utilities, located near commercial and employment centers. Commercial uses are prohibited.
Permitted Uses	Single-family dwellings, certain agricultural and utility uses. Other similar and compatible uses as determined by zoning administrator.	Household agriculture, community central water treatment facilities, and single-family dwelling, *Community home, day care home, farm stand, farm, greenhouse, nursery, electrical energy substation, small wireless facility, stormwater retention or detention facility.
Temporary Uses	Administrative permits for uses like home offices, real estate sales offices, subdivision signs, etc.	On-location TV/film productions, temporary real estate offices.
Minimum Lot Area	Residential: 1 unit/acre Nonresidential: 40,000 sq ft	Residential: 1 acre Non-Residential: 40,000 sq ft In legal nonconforming lots of record that meet all requirements in Sec. 500-2.1 contiguous lot regulations may apply and be approved result in a limited decrease in lot area requirements .
Minimum Lot Width	150 ft	150 ft
Setbacks	Front: 50 ft Side: 15 ft Rear: 25 ft	Front: 50 ft Side: 15 ft Rear: 25 ft
Maximum Lot Coverage	Residential: 15% Nonresidential: 40%	60%
Height Regulations	35 ft. except for farming related structures	35 ft. above natural grade, except for non-habitable structures
*Uses permitted subject to development plan review by the Department of Planning and Development		

PF-2 Public Facilities District
(24.56 square miles or 30.65% of area)

Category	Old Zoning District	Current Zoning District
	PF-2 Public Facilities District	**PF-2 Public Facilities District**
Purpose	To provide locations for public or non-profit owned facilities dedicated to historic, conservation, environmental education, or outdoor activities.	To provide locations for public or non-profit owned facilities dedicated to historic, conservation, environmental education, or outdoor activities.
Permitted Uses	State or federal wildlife management areas, state parks, local parks, privately owned conservation areas, habitat and wetland mitigation banks, passive recreation, marinas, pavilions, displays, and similar structures to the above-mentioned uses used to enhance environmental education programs.	Animal services, conservation areas, habitat and wetland mitigation banks, local/state/national parks, marinas/boat launches, passive recreational facility, post office * Electrical energy substation, small wireless facility, stormwater retention or detention facility
Temporary Uses	Snowball stands, Christmas tree sales, seasonal seafood peddlers, seasonal produce stands, fireworks sales, on-location TV/film productions, mobile food trucks.	On-location TV/film productions
Minimum Lot Area	No new lot less than 20,000 square feet.	No new lot less than 20,000 square feet.
Minimum Lot Width	60 feet with central water/sewer; 80 feet without central water/sewer.	60 feet with central water/sewer; 80 feet without central water/sewer.
Maximum Lot Coverage	50%	50%
Height Regulations	Maximum 45 feet above natural grade or base flood elevation.	Maximum 45 feet above natural grade or base flood elevation.
*Uses permitted subject to development plan review by the Department of Planning and Development		

L-2 Large Lot Residential District
(5.69 square miles or 7.1% of area)

Category	Old Zoning District	Current Zoning District
	A-3(D) Suburban	**L-2 Large Lot Residential**
Purpose	Single-family residential on moderate-sized lots with urban services. Located in areas convenient to commercial and employment centers.	Single-family residential on moderate-sized lots with urban services. Located in areas convenient to commercial and employment centers.
Permitted Uses	Single-family dwellings, private garages, guest houses (1,000 sq. ft. on 1 acre), community water facilities, household agriculture, similar uses.	Household agriculture, community central water treatment facilities, and single-family dwelling, *Community home, day care home, farm stand, farm, greenhouse, nursery, electrical energy substation, small wireless facility, stormwater retention or detention facility.
Temporary Uses	Home offices (600 sq. ft.), roadside stands (<200 sq. ft.), real estate offices (<600 sq. ft.), subdivision entrance signs, fairs, festivals (3 days max, 5,000 sq. ft., 200 vehicle trips/day), private recreational uses, ponds, agricultural uses in rural overlay, community homes for handicapped, utility structures, temporary plants, day care home, TV/film productions (temporary structures).	TV/film productions (no sets), temporary real estate office.
Minimum Lot Area	Residential: 2 units per acre. Nonresidential: 40,000 sq. ft.	Residential: 0.5 acres Nonresidential: 40,000 sq. ft. (public facilities may be located on lots of lesser area*) In legal nonconforming lots of record that meet all requirements in Sec. 500-2.1 contiguous lot regulations may apply and result in a limited decrease in lot area requirements.
Lot Width	100 ft	100 ft
Setbacks	30 ft front, 10 ft (plus 1 ft. for each ft. over 20 ft. in height) side, 25 ft (plus 1 ft for each ft over 20) rear.	Front: 30 ft Side: 10 ft Rear: 25 ft
Lot Coverage	Residential: 50%. Single-family cluster: 70%. Nonresidential: 40%.	60%
Height Regulations	35 ft.	35 ft.
Utilities	Central water and sewerage system shall be required where applicable as per chapter 125	Individual sewerage systems must be approved by Parish Health Department if no central facilities; for lots without central water facilities wells must be 50 ft. away from any sewerage system
*Uses permitted subject to development plan review by the Department of Planning and Development		

R-1 Rural Residential District
(4.9 square miles or 6.1% of area)

Category	Old Zoning District	Current Zoning District
	A-1(D) Suburban	**R-1 Rural Residential**
Purpose	Low-density single family Residential with some agricultural and utility uses	Low-density single-family residential with some agricultural and utility uses
Permitted Uses	Single-family dwelling, private garage and accessory structures, garage apartment or guest house (<1,000 sq. ft. on 1 acre), community central water, well, and storage facilities, household agriculture, similar and compatible uses.	Household agriculture, community central water treatment facilities, and single-family dwelling, *Community home, day care home, electrical energy substation, farm stand, farm, family-owned cemetery, greenhouse, nursery, small wireless facility, solar energy systems, stormwater retention or detention facility.
Temporary Uses	Home offices (600 sq. ft.), roadside stands (<200 sq. ft.), real estate offices (<600 sq. ft.), subdivision entrance signs, fairs, festivals (3 days max, 5,000 sq. ft., 200 vehicle trips/day), private cultural and recreational uses ponds, agricultural uses in rural overlay, community homes for handicapped, utility structures, temporary plants, day care home, TV/film productions (no sets).	TV/film productions, temporary real estate office, temporary residence
Minimum Lot Area	Residential: 5 acres Nonresidential: 40,000 sq ft.	Residential: 5 acres Nonresidential: 40,000 sq ft. (public utility facilities may be located on lots of lesser area*) In legal nonconforming lots of record that meet all requirements in Sec. 500-2.1 contiguous lot regulations may apply and result in a limited decrease in lot area requirements.
Minimum Lot Width	300 ft	300 ft
Setbacks	Front: 50 ft Side: 15 ft (both sides), add 1 ft per ft over 20 ft building height Rear: 25 ft, plus 1 ft per ft in buildings over 20 ft	Front: 50 ft Side: 15 ft (both sides) Rear: 25 ft
Lot Coverage	Residential: 15% Nonresidential: 40%	50%
Height Regulations	35 ft. except for farming related structures	35 ft. except for non-habitable structures
Utilities	Individual systems must be approved by Parish Health Department if no central facilities.	Individual systems must be approved by Parish Health Department if no central facilities.
*Uses permitted subject to development plan review by the Department of Planning and Development		

R-2 Rural Residential District

(4.8 square miles or 5.9% of area)

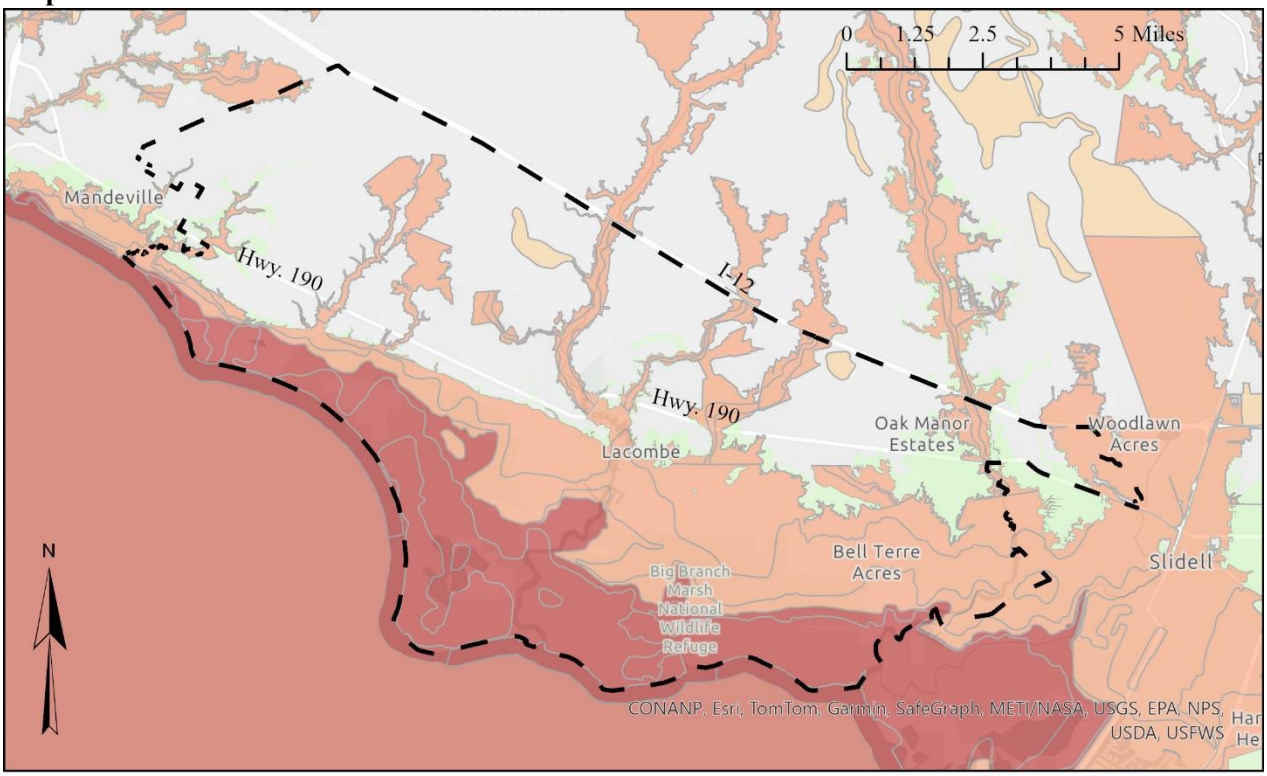
Category	Old Zoning District	Current Zoning District
	A-1A(D) Suburban	**R-2 Rural Residential**
Purpose	Single-family residential on large, multi-acre lots in less populated areas with low densities.	Single-family residential at low-density in less populated areas.
Permitted Uses	Single-family dwelling, private garage and accessory structures, garage apartment or guest house (1,000 sq. ft. on 1 acre), community central water, well, and storage facilities, household agriculture, similar uses.	Household agriculture, community central water treatment facilities, and single-family dwelling, *Community home, day care home, electrical energy substation, farm stand, farm, family-owned cemetery, greenhouse, nursery, small wireless facility, solar energy systems, stormwater retention or detention facility.
Temporary Uses	Home offices (600 sq. ft.), roadside stands (<200 sq. ft.), real estate offices (<600 sq. ft.), subdivision entrance signs, fairs, festivals (3 days max, 5,000 sq. ft., 200 vehicle trips/day), private recreational uses, ponds, agricultural uses in rural overlay, community homes for handicapped, utility structures, temporary plants, day care home, TV/film productions (temporary structures).	On-location TV/film productions (no sets), temporary real estate office, temporary residence.
Minimum Lot Area	Residential: 3 acres Nonresidential: 40,000 sq. ft.	Residential: 3 acres. Nonresidential: 40,000 sq. ft. In legal nonconforming lots of record that meet all requirements in Sec. 500-2.1 contiguous lot regulations may apply and result in a limited decrease in lot area requirements.
Minimum Lot Width	200 ft	200 ft
Setbacks	Front: 50 ft Side:15 ft, plus 1 ft per foot over 20 ft height Rear:25 ft plus 1 ft per ft over 20 ft height	Front: 50 ft Side: 15 ft Rear: 25 ft
Lot Coverage	15% for residential, 40% for non-residential	50% for both residential and non-residential (including both principle and accessory buildings)
Height Regulations	35 ft. except for non-habitable structures	35 ft. except for non-habitable structures
Utilities	Individual systems must be approved by Parish Health Department if no central facilities.	Individual systems must meet Parish Health Department standards if no central facilities.
*Uses permitted subject to development plan review by the Department of Planning and Development		

Flood Risk, Wetlands, and Coastal Flooding

Residential structures in the Study Area are mostly single-family homes, many of which are located in flood zones and areas that have historically flooded. Many of these homes are constructed on pier or piling foundations that help mitigate flood risk. However, a significant number of homes are constructed with "slab-on-grade" foundations, many of which are within areas that have been raised through the use of fill. Homes constructed after 1984 have been required to comply with FEMA National Flood Insurance Program (NFIP) requirements, including elevation of the first floor to or above the Base Flood Elevation (BFE).

The Study Area is subject to significant coastal and riverine flood risk, with approximately 57% of the Area (by acreage) within flood zones A, AE, V, or VE on the effective FIRM, 34% within flood zones A or AE on the preliminary FIRM, 23% in zones V or VE on the preliminary FIRM, and 6% within the 0.02% AEP or "500-Year" flood zone. Grade varies from approximately +30 NAVD88 (near I-12) to 0 NAVD88 (at Lake Pontchartrain) within the Study Area, with BFE in the flood zones ranging from +8 NAVD88 (along Bayou Castaine) to +24 NAVD88 (along Cypress Bayou and Big Branch Bayou). Map 5 shows ground elevation in the Study Area.

Map 4. Flood Zones.

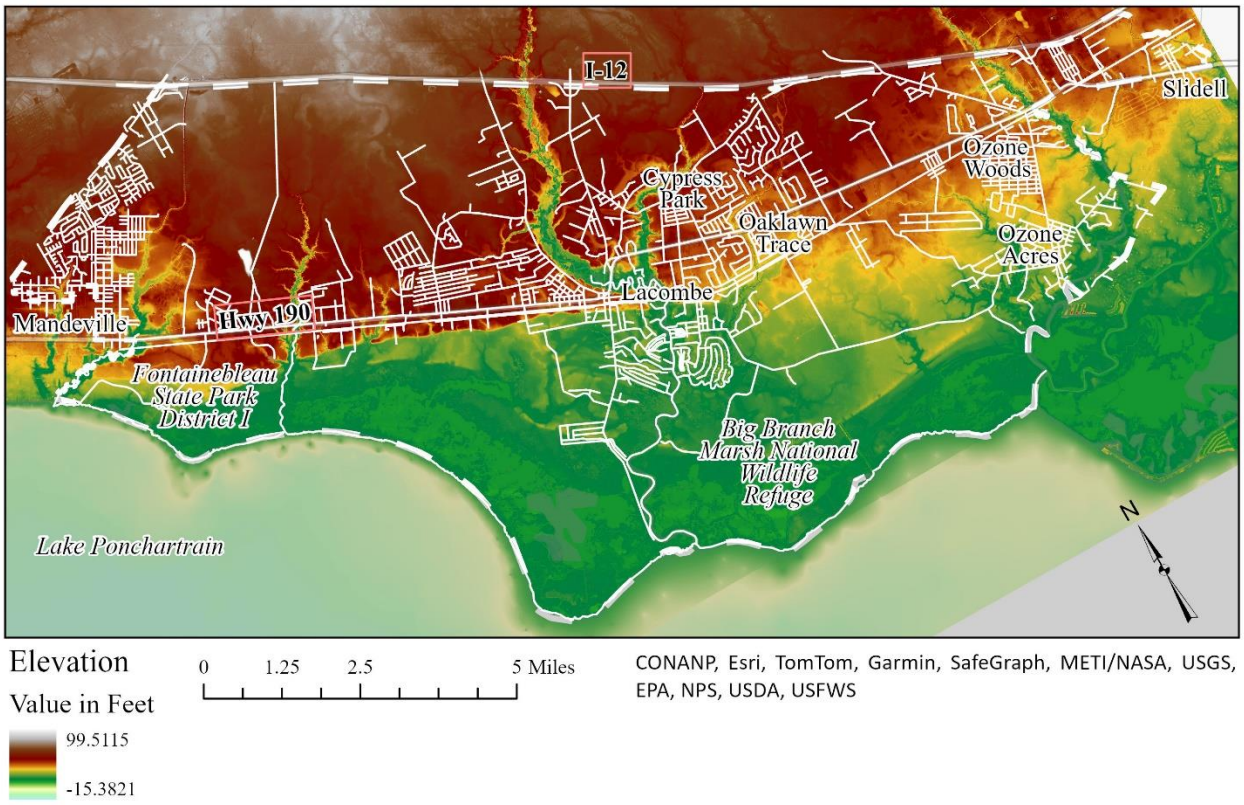


AmendedStudyArea

Special Flood Hazard Area

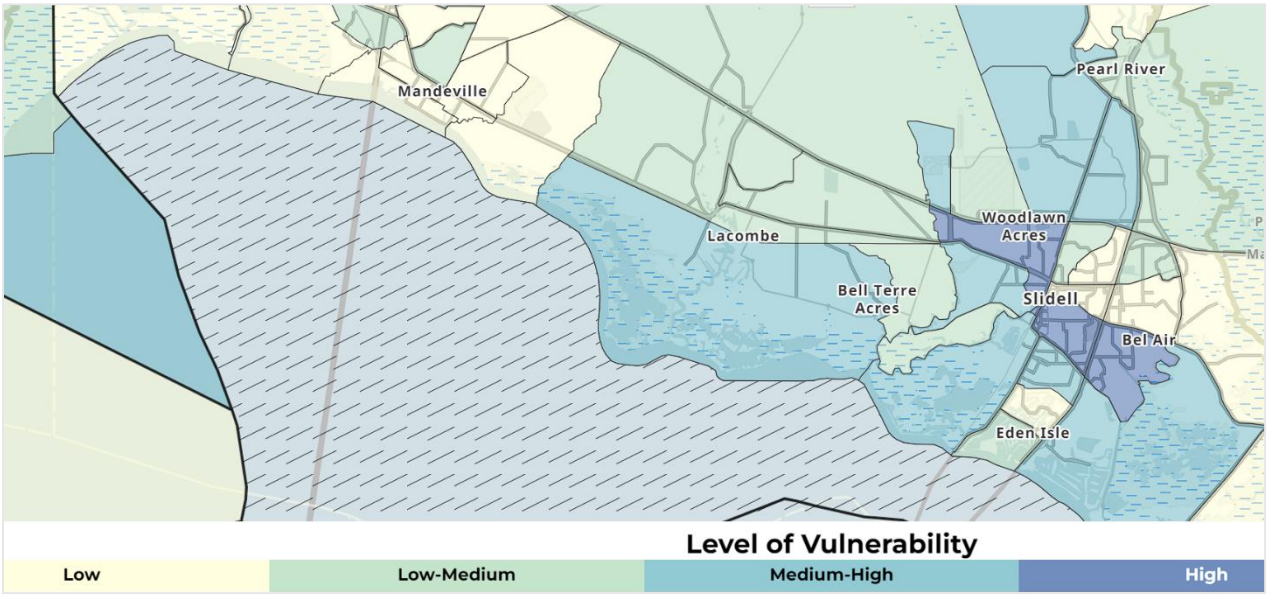
- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- A
- AE
- OPEN WATER
- VE
- X

Map 5. Elevation.

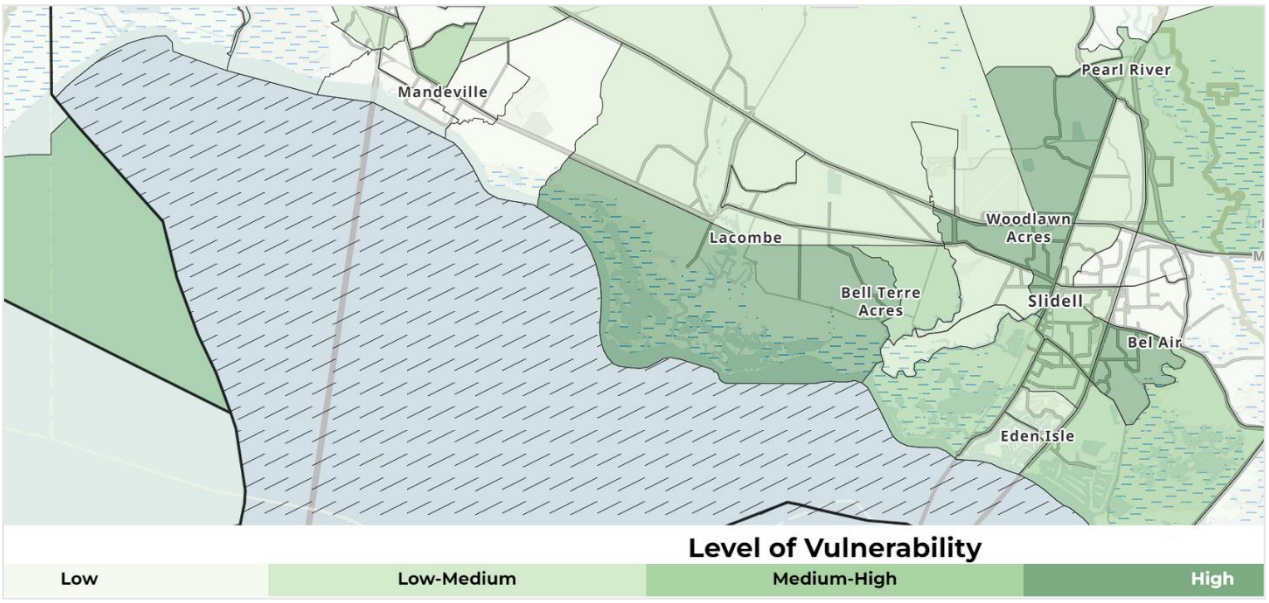


Map 6 Overall Social Vulnerability Index (SVI) in the Study Area (2022)

Map source: Center for Disease Control (CDC)
https://www.atsdr.cdc.gov/placeandhealth/svi/interactive_map.html



Map 7 Socioeconomic Vulnerability in the Study Area (2022).
Map source: Center for Disease Control (CDC)
https://www.atsdr.cdc.gov/placeandhealth/svi/interactive_map.html



Flood Risk and Social Vulnerability.

Low elevation naturally predisposes the majority of the Study Area to frequent and severe flooding, which is increased by the fact that the Study Area borders Lake Pontchartrain. High flood risk in the area poses a threat to the safety, livelihood, and wellbeing of residents of the Study Area; particularly those who are socioeconomically vulnerable. With much of the Study Area being below sea level, a flood event would exacerbate the existing socioeconomic disparities and hinder recovery efforts.

Infrastructure in some of the high SVI portions of the Study Area is not resilient to flood events, making it increasingly difficult to implement effective resilience interventions. Marginalized communities are often disproportionately impacted by environmental hazards, and new developments and infrastructure projects can make flooding in these areas worse. In addition to flood risk, the Justice40 initiative has identified the following disadvantages in portions of the Study Area[23]:

- *Climate Change.* Portions of the Study Area are at or above the 90th percentile for expected agriculture loss rate, expected building loss rate, expected population loss rate, projected flood risk, OR projected wildfire risk AND are at or above the 65th percentile for low income.
- *Energy.* Portions of the Study Area are in census tracts that are at or above the 90th percentile for energy cost or PM2.5 in the air AND are at or above the 65th percentile for low income.

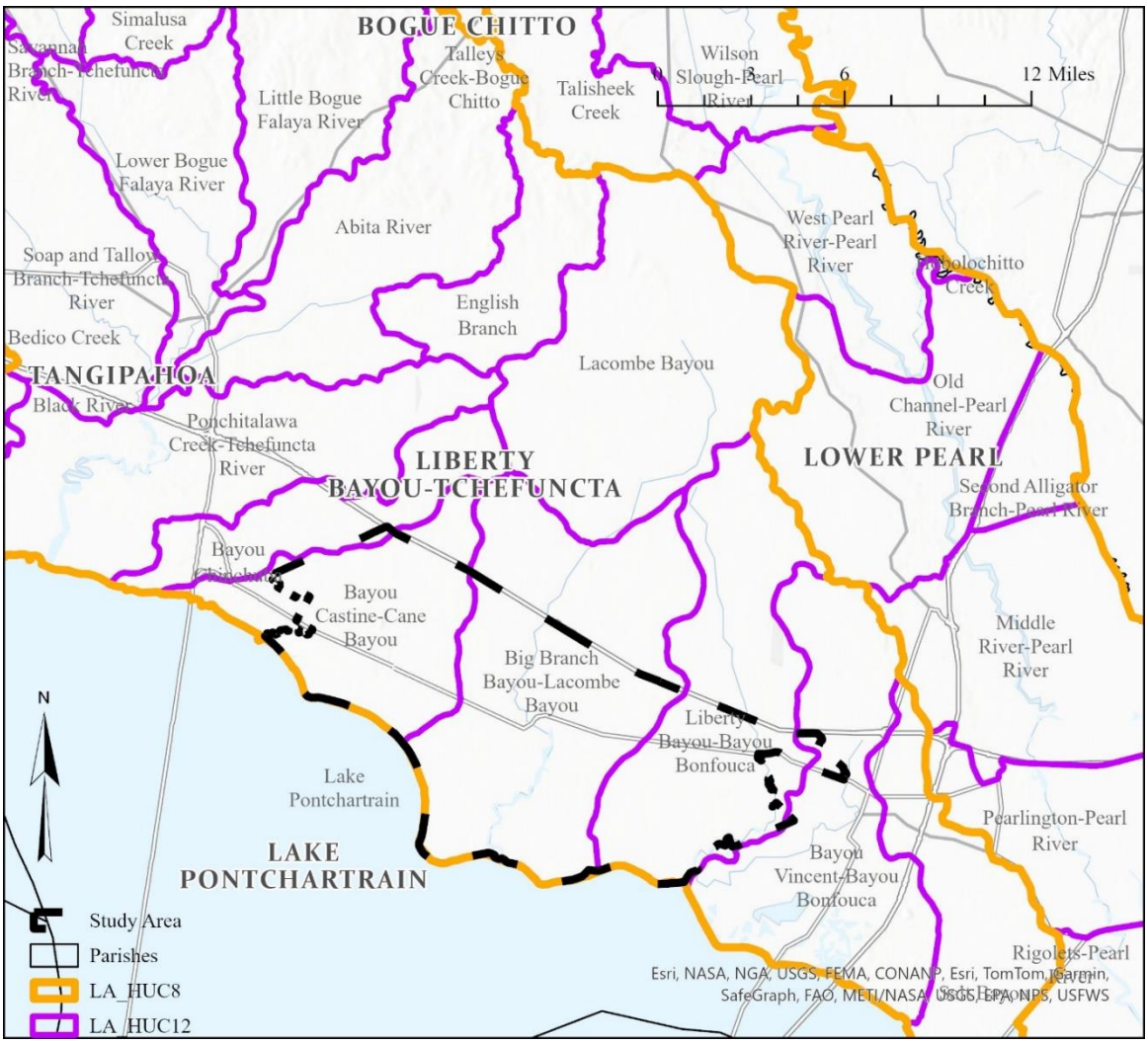
[23] See the Council on Environmental Quality's Methodology for identifying disadvantaged communities https://screeningtool.geoplatform.gov/en/methodology#3.82/39.81/-94.17

- *Health.* Portions of the Study Area are in census tracts that are at or above the 90th percentile for asthma, diabetes, heart disease, OR low life expectancy AND are at or above the 65th percentile for low income.
- *Legacy Pollution.* Portions of the Study Area are in census tracts that have at least one abandoned mine, formerly used defense site, OR are at or above the 90th percentile for proximity to hazardous waste facilities, proximity to Superfund sites (National Priorities List (NPL)), OR proximity to Risk Management Plan (RMP) facilities AND are at or above the 65th percentile for low income.
- *Workforce Development.* Portions of the Study Area are in census tracts that are at or above the 90th percentile for linguistic isolation, low median income, poverty, OR unemployment AND more than 10% of people ages 25 years or older whose high school education is less than a high school diploma.

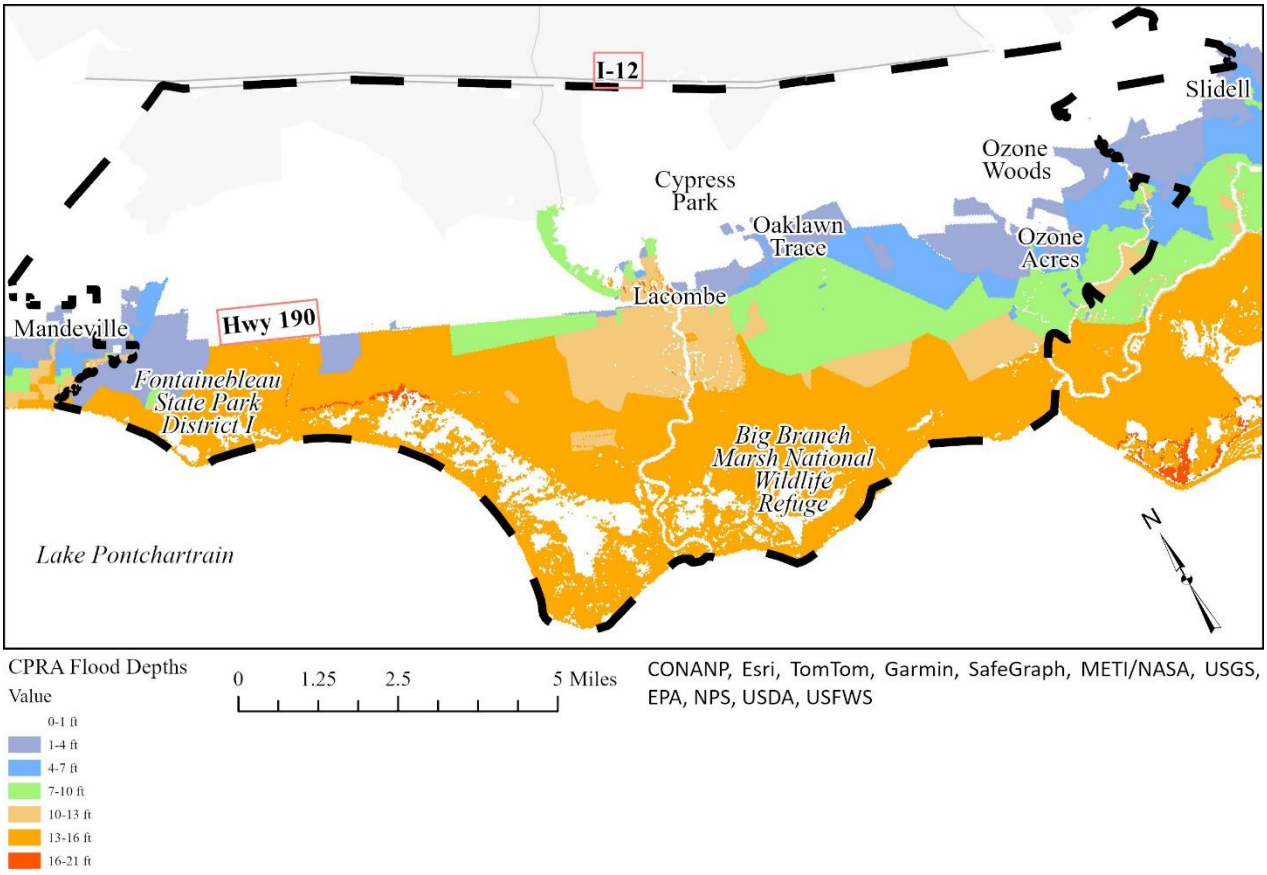
In order to address some of these vulnerabilities, the Parish has begun the process of investigating potential areas for the construction of resilient neighborhoods outside of high risk flood areas and has coordinated with community partners, such as Habitat for Humanity West to isolate grant-funded and market-based solutions to housing demand outside of the Study Area.

The Study Area lies in the Liberty Bayou – Tchefuncte Hydrologic Unit Code (HUC) 8 watershed with the Liberty Bayou – Bayou Bonfouca HUC 12 watershed to the farthest east of the Study Area, the Big Branch Bayou – Lacombe Bayou HUC 12 watershed through the middle of the Study Area (running north-south) and the Bayou Castine – Cane Bayou HUC 12 watershed running along the west – south west side of the Study Area. A small northwestern portion of the Study Area lies in the Bayou Chinchuba HUC 12 watershed.

Map 8. HUC 8 and HUC 12 Watersheds in the Vicinity.



Map 9. Coastal Flood Risk (2023 Plan projections[24]).



Approximately 19,000 acres in the Study Area (38%) are designated as wetlands according to the U.S. Fish and Wildlife Services National Wetlands Inventory[25]. Study Area flood sources include coastal impacts from Lake Pontchartrain and riverine flood risk from Cypress Bayou, Bayou Paquet, Liberty Bayou, Big Branch Bayou, and Lacombe Bayou. Based on the CPRA flood risk map (2017), approximately 19,000 acres of the Study Area are subject to future flood risk of 1 ft. or more above grade in year 50 of the CPRA "medium environmental, with plan" scenario. Coastal flood risk is most significant south of Highway 190 and north along Liberty Bayou, while riverine risk is most apparent along Cypress Bayou, Bayou Paquet, Big Branch Bayou, and Lacombe Bayou.

The Study Area is subject to significant coastal and riverine flood risk and is experiencing the confluence of both forces, placing existing residents at risk. Further development in this Area could exacerbate this problem by removing critical functioning floodplain area or wetlands from the region. Because the watersheds in this region are separated by low-lying ridges and all are interconnected within the HUC-8 watershed, very few areas of the region would be

[24] Image shown uses CPRA 2023 Master Plan Data on "higher" environmental scenario, for the 1% AEP flood, at year 52 "with plan" scenario.
[25] Wetlands play a critical role by storing water that would otherwise flood nearby neighborhoods and structures. The EPA estimates that one acre of wetlands can store 1-1.5 million gallons of flood water. Source: https://www.epa.gov/sites/default/files/2016-02/documents/functionsvaluesofwetlands.pdf

appropriate for new residential units, with the exception of those areas outside of the flood zone or Special Flood Hazard Area (SFHA) closest to I-12.

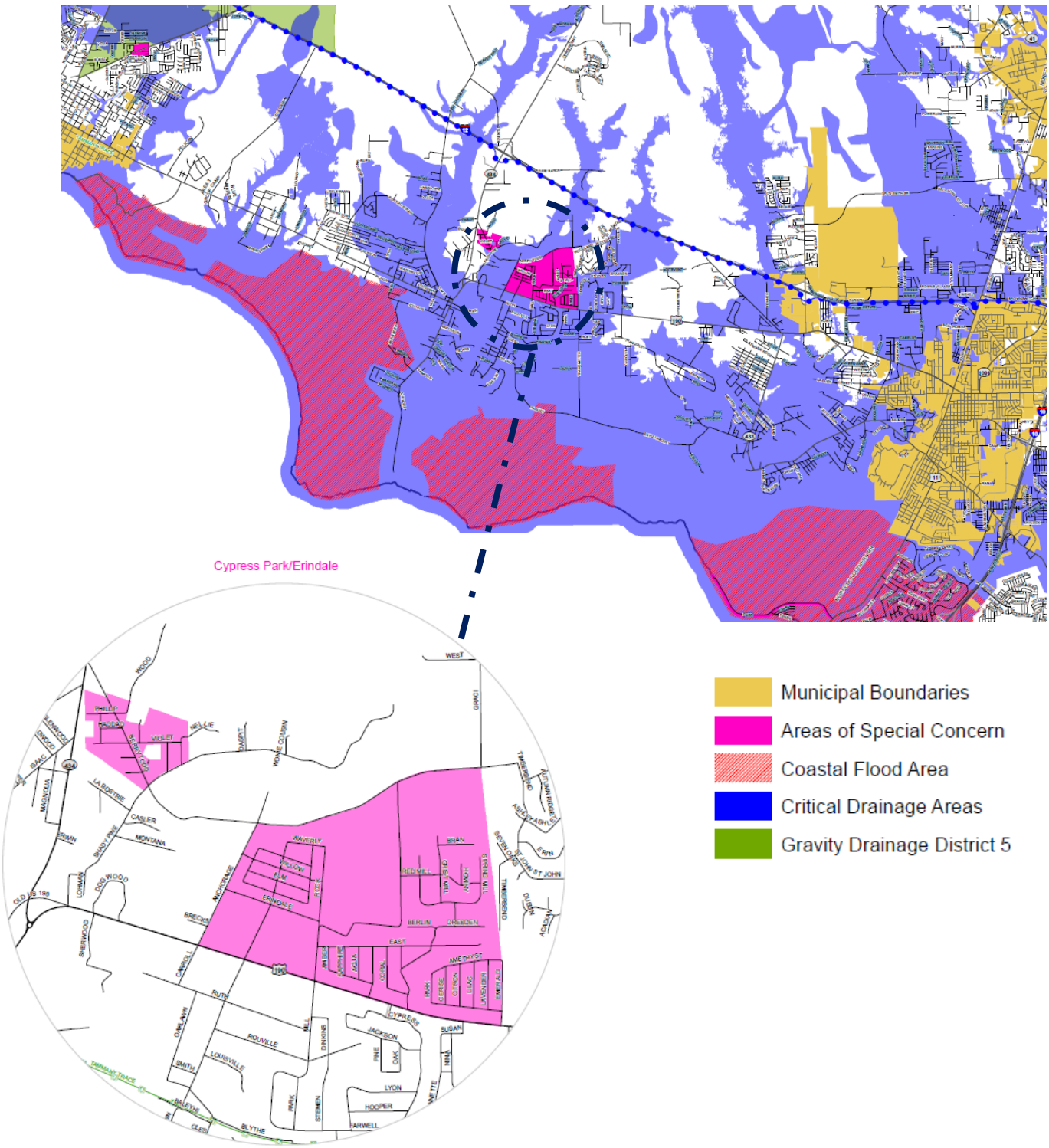
Drainage Areas of Special Concern

A Drainage Area of Special Concern is an area that is experiencing development without an approved hydrological plan. While these areas might not lie within critical drainage zones, the Department of Engineering has identified them as particularly susceptible to adverse drainage and flooding impacts due to continued development and fill.

There are two Areas of Special Concern in the Study Area. One is Cypress Park/Erindale area (zoned L-2), which is comprised of 5 subdivisions and roughly 190 acres of unplatted land. The second area is Tammany Forest Subdivision (zoned S-1), a smaller subdivision located right off Highway 434. These areas are at an increased risk of flood damage, and conducting a drainage basin study may be necessary to assess potential drainage impacts on neighboring properties. To mitigate these risks, Areas of Special Concern require the enforcement of specific fill and building regulations, including regulations that state “no fill shall be permitted on parcels that would raise or increase the surface elevation above its natural or pre-development elevation” and “the lowest finished floor elevation must be at least 24 inches above the crown of the road.”

Category	Critical Drainage Area	Area of Special Concern
Description	Areas determine by the Department of Engineering to be of critical importance for stormwater management	Specific areas identified within certain subdivisions that require additional scrutiny due to development risks
Purpose	To protect areas essential for the conveyance, moderation, or storage of stormwater to prevent flooding	To address areas susceptible to drainage and flooding impacts due to continued development
Criteria for Designation	Includes areas anticipated to be inundated by a 100-year storm, wetlands, and areas of concentrated stormwater flow	Identified based on ongoing development without approved hydrological plans, leading to potential adverse impacts
Examples of Areas Included	Flood Hazard Areas designated by FEMA, wetlands, and designated critical drainage maps and maintained by the Parish.	Specific portions of Tammany Hills, Alexiusville Subdivisions, Cypress Park, and Erindale Subdivisions
Regulations and Standards		
Hydrological Requirements	Required hydrological studies to demonstrate no adverse impact on flood levels and flow patterns	Developers mut submit comprehensive drainage plans that are reviewed for potential impact
Floodplain Management	Structures must comply with Base Flood Elevation (BFE) requirements	Additional approvals may be needed for structures within flood-prone areas
Fill and Grading Standards	Strict limitations on fill material usage to ensure flood storage capacity is not compromised	Restrictions on fill materials to ensure it does not exacerbate drainage issues
Stormwater Management	Must include detailed stormwater plans ensuring no net increase in runoff post-development	Developers may be required to establish drainage easements to facilitate proper stormwater management
Monitoring and Compliance	Continuous monitoring during and after development to ensure compliance with hydrological and stormwater standards	Increased scrutiny and inspections to ensure adherence to development standards
Map Availability	An official Critical Drainage Area Map is maintained and updated by the Department of Engineering	Boundaries and descriptions of Areas of Special Concern are defined within the UDC

Map 10. Critical Drainage Areas in the Study Area Vicinity.



Streets within the Study Area are classified according to the 2023 St. Tammany Parish Multi-Modal Transportation Plan draft as follows[26]:

Highway 1088: Arterial
Highway 190/W. Gause Blvd: Arterial
Highway 433: Arterial
Highway 434: Arterial
N Pontchartrain Drive: Collector
Fish Hatchery Road: Collector
Berry Todd Road/Old Todd Road: Collector
Dixie Ranch Fire Tower Road: Collector
Transmitter Road: Collector
S Tranquility/C C Road: Collector
Bayou Paquet Road: Collector
All other roads: Local

Map 11. Transportation Network in the Vicinity.

Highway 1088 defines the westernmost boundary of the Study Area. Highway 434 runs through the center of Lacombe and connects its core with I-12. Highway 433 runs north-south and Highway 190 runs east-west; the two

[26] 2023 St. Tammany Multi-Modal Transportation Plan. (2023). St. Tammany Parish Government. http://www.stpgov.org/mmtp

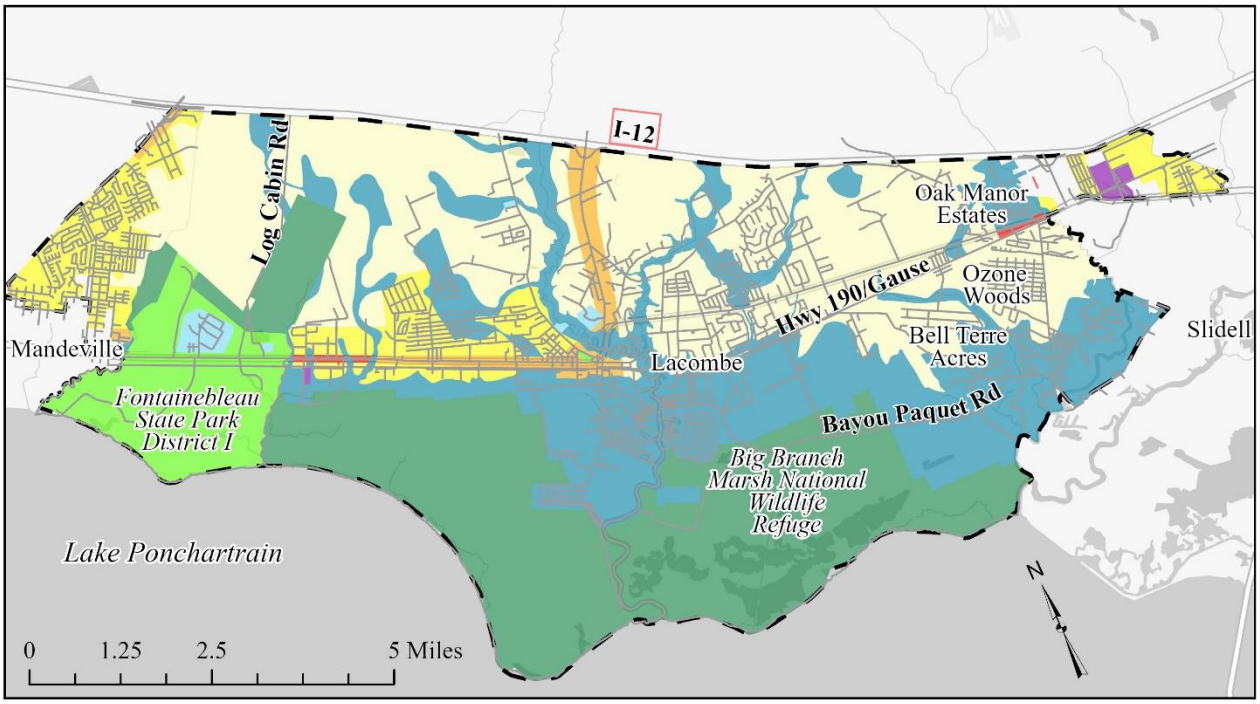
arterial roads intersect in the northeastern corner of the Study Area. S. Tranquility / C C Road runs approximately south-east from Highway 190 to Bayou Paquet Road. Bayou Paquet Road runs east-west and serves as the southernmost collector road in the Study Area.

Future Land Use Map Classifications

In 2022, St. Tammany Parish adopted the 2040 New Directions Comprehensive Plan and its accompanying Future Land Use Map (FLUM). The Future Land Use Map provides a tool for decision-makers and stakeholders to understand the Parish's vision for future growth, including neighborhood hubs, floodplains, roadway projects, and growth management areas. Parish staff refer to the FLUM when considering changes to zoning classifications, and when budgeting for future projects and policies impacting land use. The FLUM is an advisory tool and does not change zoning classifications. All rezoning applications must follow local policies and procedures.

Per the FLUM (**Map 10**), more than half of the Study Area is designated for coastal conservation (25.8%) and conservation - protected (26.7%). Fontainebleau State Park represents five square miles (6.4%) of this protected land area, and is designated as "parks and open space." The FLUM designates 40.2% of the Study Area for residential uses, including 30.3% for low-intensity residential uses and 2.1% for mixed-use areas (permitting both commercial and residential uses) along major corridors. A brief description of each future land use category is provided on the following page.

Map 12. Future Land Use Map of Study Area from New Directions 2040.



Coastal Conservation (CCA)	Areas within the Parish's coastal zone (south of I-12) that are not currently developed with intense uses, and are within the 100-year floodplain.
Conservation – Protected (CP)	Ecologically sensitive lands and wetlands where new development is strictly regulated to lower impacts to natural resources.
Low-Intensity Residential (RLI)	Predominantly single family, detached homes on very large lots (Generally 1 acre or more per unit.) The lower density creates a more spacious character appropriate as a transition between the Parish's Rural or Conservation areas and more intense land uses.
Medium-Intensity Residential (RMI)	Generally 1 to 8 units per acre. Central water and sewer more practical, and infrastructure like sidewalks, subsurface drainage, and street lighting are more common.
Commercial (C)	Concentrations of offices, retailers, services, and other employers that generate varying levels of traffic. They range from neighborhood-

	serving uses such as personal care and convenience goods, to large-scale shopping centers. May also include high intensity residential uses.
Institutional (I)	Provide adequate space in central, accessible areas for provision of public and public-serving facilities and services, such as large health care facilities, houses of worship, higher education campuses, and large fire and police stations.
Mixed Use (MU)	A flexible category that encourages higher concentrations of residential and commercial uses, allowing shorter trips between destinations and opportunities for walkable, compact development patterns. May also include high intensity residential uses.
Parks & Open Space (P&OS)	Public and private park and recreational areas serving primarily recreational uses, including commercial recreation uses, such as golf courses.
Rural and Agricultural (R&A)	Very low-intensity uses in non-urbanized areas, such as agriculture, horse farms, timberlands, ranches, and very large single family lots (generally larger than 3 acres).

Building Permits in the Study Area

630 building permits were requested in the Study Area between 2019 and 2023. Of these building permits, 6% were commercial permits predominantly for commercial remodeling, land clearing, or seasonal adaptations, and 60.5% were for the construction of new single-family homes. A significant spike in construction occurred in 2021 and 2022 in the aftermath of Hurricane Ida. The moratoria in the Study Area likely impacted the decrease in permits seen in 2023.

Table 4. Residential Permits Issued in Study Area by Type, 2019-2023.

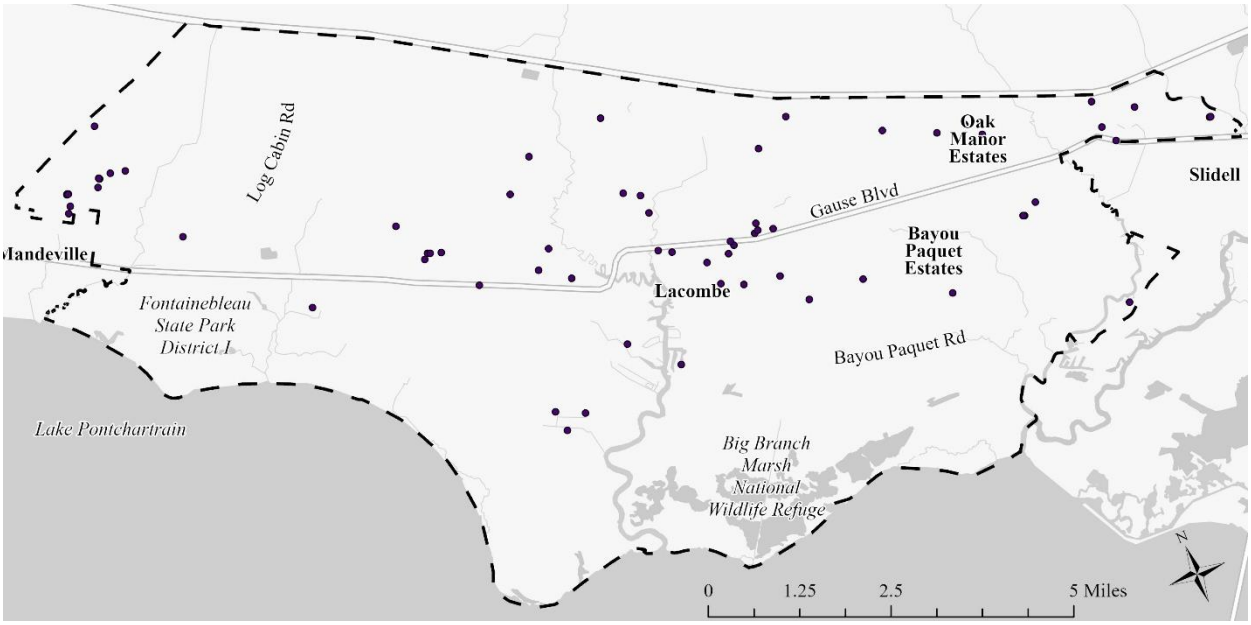
Year	Total Permits	Stick-Built Construction	Mobile Home	Addition or Accessory	Solar Panels	Swimming Pools	Remodel	Demo
2019	90	67	4	3	2	2	7	0
2020	110	102	1	2	1	2	1	1
2021	159	131	2	5	1	6	13	1
2022	201	67	8	40	7	24	54	1
2023	32	14	12	4	0	0	13	1
Total	592	381	27	54	11	34	88	4

Table 5. Commercial Permits Issued in Study Area by Type, 2019-2023.

Year	Total Permits*	New Construction	Seasonal Permits	Addition or Accessory	Remodel	Demo**	Solar
2019	2	0	0	1	1	0	0
2020	2	0	0	1	0	1	0
2021	5	0	3	0	2	0	0
2022	28	4	6	0	9	8	1
2023	2	0	0	0	0	2	0
Total	**38**	**4**	**9**	**2**	**12**	**11**	**1**

* Sign permits were excluded from the overall count.
** Land clearing permits included in this count for the years 2022 and 2023.

Map 13. Locations of New Construction Single Family and Mobile Home Permits 2019-2023.



While permit requests spread across the Study Area throughout the past five years (**Map 13**), the largest concentrations are directly northeast of incorporated Mandeville and in the vicinity of Lacombe.

Variances and BOA Adjustments

The St. Tammany Parish Board of Adjustments (BOA) has the power to permit variations (also called variances) on the use of property that is not otherwise permitted under the property's zoning requirements. 23 Board of Adjustments cases were heard in the Study Area between 2019 and 2023: 3 cases (15%) were for commercial properties; 8 cases were to reduce setback requirements; 8 cases were to reducing buffer requirements; and 6 cases were for after-the-fact waivers. As 592 permits were filed in the same period, it appears that relatively few properties required variances for construction to occur.

Table 6. Board of Adjustment Cases, 2019 – 2024.

Year	Case Number	Type	Description
2023	2023-3596	Residential	Request by an applicant in a PUD Planned Unit Development Overlay for an after the fact variance request to reduce the required front yard setback from 25 ft to 21 ft 9 in to allow for the completion of the construction of a single-family residence.
2023	2023-3538	Residential	Request by an applicant in an A-2 Suburban District to increase the maximum allowable size of a boat house from 800 sq ft to 1,000 sq ft on a state-designated scenic river.
2023	2023-3492	Residential	Request by an applicant in an A-1A Suburban District for a waiver to the required 25 ft no cut street buffer along 16th Street for 153 ft, a waiver to the required 50 ft no cut buffer on the south side for 153 ft, and a reduction of the required 50 ft no cut buffer to 25 ft for approximately 207 ft.
2023	2023-3441	Residential	Request by applicant in an A-2 Suburban District for an after the fact request to exceed the maximum allowable height for an accessory structure and to exceed the 25% allotted expansion amount of a legal non-conforming structure.
2023	2023-3390	Residential	Request by applicant in an A-1A Suburban District for a variance to remove 4 trees located within the required southern 50 ft no cut buffer.
2022	2022-3126	Residential	Request by applicant in an A-4 Single Family Residential District to reduce the required front setback from 30 ft to 10 ft to allow for the construction of a single-family residence.
2022	2022-2814	Residential	Request by applicant in an A-4 Single-Family Residential Zoning District for a variance to reduce the required street side setback yard setback from 20 ft to 10 ft to allow for the construction of a single-family residence.
2022	2022-2820	Residential	Request by applicant in a CBF-1 Community Based Facilities Zoning District & A-2 Suburban Zoning District for a waiver of the required pond setback on each side of the property line.
2022	2022-2768	Residential	Request by applicant in an A-4 Single Family Residential Zoning District for after the fact variances to reduce rear yard setback from 25 ft to 6 ft and required side yard from 15 ft to 4 ft.
2021	2021-2625	Residential	Request by applicant in an A-4 Single Family Residential Zoning District for an after the fact waiver to allow for the driveway concrete paving to remain within 5 ft of the property line.
2021	2021-2515	Unknown	Request by applicant in a CBF-1 Community Based Facilities Zoning District for a waiver of the required 8 ft opaque fence on the north and east sides of the property where abutting A-2 Suburban Zoning District.
2021	2021-2477	Residential	Request by applicant in an A-3 Suburban Zoning District for an after the fact waiver of the required 50 ft no cut buffer from the top of the bank of Cypress Bayou.
2021	2021-2475	Residential	Request by applicant in an A-2 Suburban Zoning District to increase the maximum allowable length of an accessory structure from 50 ft to 60 ft and the maximum allowable width of an accessory structure from 50 ft to 55 ft.

Year	Case Number	Type	Description
2021	2021-2427	Residential	Request by applicant in an A-2 Suburban Zoning District to reduce the required front yard setback from 50 ft to 35 ft to allow for the construction of a single family residence.
2021	2021-2390	Unknown	No information available.
2021	2021-2340	Commercial	Request by applicant in an A-2 Suburban Zoning District for a waiver of the required 25 ft roadway buffers.
2021	2021-2207	Utility	Request by applicant in an A-2 Suburban Zoning District to reduce the required 50 ft no cut buffer to 15 ft to allow for the placement of a driveway.
2020	2020-2135	Residential	Request by applicant in an A-2 Suburban Zoning District for an after the fact waiver of the required 50 ft no cut buffer along the south side of the property, where the single family residence is located, and to replant the partially cleared no cut buffer southern 50 ft no cut buffer.
2020	2020-2089	Commercial	Request by applicant in a HC-1 Highway Commercial Zoning District to reduce the required tower setbacks from 191 ft to 42 ft on the north side, to 183 ft 7 in on the south side and to 24 ft 3 in on the west side, reduce the required setback for the ground equipment from 15 ft to 10 ft on the north side and from 25 ft to 10 ft on the west side, a reduction of the required 25 ft planting area around the tower equipment to 10 ft on the north and west sides of the site, a waiver of the required 25 ft planting area around the tower area on the south and east sides of the site, and a waiver of the required number of shrubs/Class C trees within the planting area.
2020	2020-2084	Residential	Request by applicant in an A-4 Single Family Residential Zoning District to reduce the required front yard setback from 25 ft to 11 ft to allow for the construction of an addition to an existing residence.
2020	2020-2045	Residential	Request by applicant in an A-1A Suburban Zoning District to reduce the required 25 ft no cut buffer along 14th Street to 10 ft and reduce the required 50 ft no cut buffer to 35 ft and 40 ft, along a portion of north side of the property.
2020	2020-1907	Residential	Request by applicant in an A-2 Suburban Zoning District for an after the fact variance to complete the clear cutting of a portion of the required 50 ft side yard no cut buffers.

Infrastructure Capacity and Planned Improvements in the Study Area.

The Study Area is facing several infrastructure challenges linked to its transition from rural to suburban development patterns, impacting the effectiveness and sustainability of drainage, road, and sewer systems. Within the Study Area is the Parish designated “Area III – Service Area: Unincorporated Areas of Lacombe and Greater Slidell”, which is currently undergoing the mill and overlay, patch and overlay, beautification, and drainage improvements. Challenges to these improvements are as follows:

Drainage Systems

The Study Area faces significant flood risks, highlighting the importance of well-designed, constructed, and maintained drainage ditches. Open-swale drainage has both benefits and drawbacks in this development pattern. Open-swale drainage helps manage overflow during major floods, adding functional capacity when critically needed. However, these systems face persistent issues such as vegetative overgrowth and litter accumulation,

which can obstruct critical water flow. In some subdivisions, private covenants help maintain theses ditches, preserving their functionality, but other areas lack such agreements, placing a high burden on the Parish to maintain hundreds of miles of conveyance on limited maintenance and operational budgets. Despite these challenges, the Parish has pursued a number of infrastructure projects, including improving access to drainage ditches, and larger projects such as the Slidell Ring Levees and implementation of subsurface drainage.

Road System

The local roads in the Study Area are often characterized by narrow lanes and limited shoulders adjacent to deep drainage ditches, complicating routine and emergency vehicular movement. Constraints like narrow turnarounds affect everyday activities from garbage collection to emergency response. The Parish's Multi-Modal Transportation Plan (MMTP) draft addresses these concerns with potential projects aimed at enhancing mobility, such as roadway expansions and integrating subsurface drainage systems. However, such improvements are frequently hindered by spatial constraints and access limitations. Roadways that are not formally designated to the Parish can present a challenge in implementation, as there is often a lack of physical rights of access or the adequate space for installation. Potential candidates for future installation of subsurface drainage should be identified by the Parish, placing priority on areas where pedestrian traffic is high and road space can be optimized.

Sewer System

Residents of rural areas have long opted to install individual septic systems and Aerated Treatment Units (ATUs) in areas that are far away from consolidated sewer treatment access. These methods of wastewater treatment were considered appropriate when the Study Area was first developed, but as the Area shifts to suburban development patterns these systems are beginning to have negative impacts on water quality, with failures potentially leaking contaminants into groundwater and surface water. Over the past 30 years, the population of St. Tammany Parish increased by 70%, and construction to accommodate this growth, specifically the influx of private sewer treatment plants and neighborhood level package plants, have negatively impacted many local streams and rivers. Most contaminants in the watersheds have been traced to nonpoint sources, which include underperforming wastewater package plants or individual residential treatment plants. The Parish has several programs and projects to mitigate water contamination:

Department of Environmental Services Decentralized Management Program. The Department of Environmental Services carried out door-to-door inspections of sewer systems and watersheds to ensure that residents are remaining in compliance and water quality is at a "swimmable and fishable" level in accordance with EPA standards.

Sewer Inspection Program. Established by Council Ordinance 2455, and adopted in 2002, this program requires residents and commercial entities in unincorporated St. Tammany Parish to apply for an on-site sewer inspection in order to transfer electricity from one owner/occupant to another.

Pollution Source Tracking EPA Grants. Within the Study Area, portions of Bayou Liberty were chosen to participate in this programming, aimed at improving operation and maintenance of residential septic systems. Funding and outreach for the program went towards on-site inspection, re-inspections, homeowner education and outreach, and water quality monitoring and sampling. Through monthly monitoring and laboratory testing, water quality in the Bayou Liberty Area increased to an almost 90% pass rate during the final inspection.

The Study Area's infrastructure challenges are connected to its shifting development patterns. Addressing these challenges requires a balanced approach of maintaining existing systems while strategically implementing new projects (i.e subsurface drainage) that both enhance functionality and free up space for additional amenities (i.e.

sidewalks). Identifying potential candidates for these improvements within the Study Area will be crucial for future planning and development efforts.

Planned Improvement Projects

Past plans to improve water quality have shown improved home inspection rates, increased homeowner education, and improved water quality. Other plans have set forth projects to address a future of sustainable development in the Study Area. The Capital Improvement Plan includes projects to improve drainage and roadways in the Study Area and The St. Tammany Parish Multi-Modal Transportation Plan draft also includes projects to increase mobility options while combatting projected traffic that could result from additional development in the region. To combat flooding, the Louisiana Coastal Master plan has proposed the Slidell Ring Levee system, along with non-structural interventions like home elevations. **Table 7** lists multi-year projects to address current and future infrastructure needs in the Study Area. This table combines projected public needs from the St. Tammany Parish Capital Improvement Plan, Multi-Modal Transportation Plan, and the Louisiana Coastal Master Plan. A brief summary of the needs each plan addresses is summarized below.

St. Tammany Parish Capital Improvement Plan (CIP). The CIP for Roads and Drainage, last supplemented in September 2023, is a multi-year projection of capital needs for public roads and drainage infrastructure throughout St. Tammany Parish.

St. Tammany Parish Draft Multi-Modal Transportation Plan (MMTP). St. Tammany Parish is currently developing its first MMTP to help facilitate and implement community transportation goals and to improve transportation facilities and services. The Study Area is projected to experience population growth, and the MMTP projects within the area aim to accommodate current and future traffic patterns through a variety of roadway projects.

Coastal Master Plan (CMP): Released in 2023, the CMP serves as a strategic guide for preserving coastal Louisiana's rich culture, ecosystems, and natural resources threatened by ongoing land loss and flood risk. The CMP specifically addresses portions of the Study Area, detailing planned initiatives to bolster flood mitigation efforts.

Table 7. Planned Infrastructure Projects in Study Area.

Plan	Improvement Type	Project Name	Approximate Project Cost
Capital Improvement Plan	Bridge Replacement	Chris Kennedy Rd. Bridge	$2,282,000
		Fish Hatchery Road Bridge	$2,635,000
		Tammany Trace Bridge No. 5	$500,000
		Tammany Trace Bridge No. 6	$1,100,000
		Tammany Trace Bridge No. 7	$270,000
		Tammany Trace Bridge No. 8	$725,000
		Tammany Trace Bridge No. 9	$610,000

Plan	Improvement Type		Project Name	Approximate Project Cost
			Tammany Trace Bridge No. 11	$1,000,000
			Tammany Trace Bridge No. 12	$1,520,000
			Tammany Trace Bridge No. 13	$2,525,000
	Drainage	Ponds	Belair North Pond	$ 31,100,000
			Belair South Pond	$17,800,000
			Bayou Lacombe Regional Detention Pond	$20,350,000
		General Improvements	Little Bayou Castine Drainage Improvements	$2,811,427
			Ozone Woods Drainage	$20,835,400
			Erindale Phase 3	$400,000
		Other	Cane Bayou Mitigation Bank	$3,628,031.20
			Parish Comprehensive Drainage Plan	$900,000
			St. Tammany Coastal Protection Project	$2,000,000
		Roads	Trace Connection to Heritage Park	$10,102,000
	Roads	Improvements	Coin Du Lestin Road Elevations	$1,975,000
			Mandeville Bypass	$32,635,000
			US 190 at LA 433 Intersection	$275,000
			US 190/N. Pontchartrain Drive Turn Lane	$250,000
			US 190/S. St. Roundabout	$345,000
			LA 59 to LA 1088 Connector Road	$200,000
			Slidell to Lacombe Connector Road	$250,000
			Dixie Ranch Roads: LA 434 to US 190	$900,000

Plan	Improvement Type		Project Name	Approximate Project Cost
		Maintenance	Berry Todd Road	$1,200,000
			Chris Kennedy Road	$2,000,000
			C.C. Road	$750,000
			Paquet Road	$1,100,000
	New Roadways		Airport Road: I-12 to Dr. T.J. Smith Sr.	$62,600,000
			Highway 3241	$108,500,000
			Mandeville Bypass Road	$34,000,000
Multi-Modal Transportation Plan	Roadway Widening		US 190: LA 434 to LA 433	$47,000,000
			Shared Use Paths	$29,020,000
	Alternative Transportation	Shared Use Paths	LA 433/S Tranquility Rd. Connector to Carollo Trailhead	$8,300,000
			Road Connector, Trail form US 190 to TT	$7,600,000
		Bike Lanes	LA 433 to Trace Ext., on W. Hall Ave	$8,000,000
Coastal Master Plan	Flood Mitigation	Levees	Slidell Ring Levee System	$420,000,000
		Non-Structural Risk Reduction Measures		N/A

Slidell Ring Levees

The State of Louisiana's 2023 Coastal Master Plan proposes the Slidell Ring Levees, a portion of which, if constructed, may impact areas near Bayou Liberty in the Study area. A ring levee is a levee that encircles an area from all exposed directions.[27] The Coastal Master Plan estimates that the Slidell Ring Levees would reduce roughly 35% of the risk in Slidell, Eden Isles, and Pearl River. The Plan estimates a $420 million budget to complete the system, including additional structural risk reduction measures to supplement the levees.[28]

[27] U.S. Corps of Engineers. (2023). Memphis District Website: Levees. https://www.mvm.usace.army.mil/Missions/Flood-Risk-Management/Levees/
[28] Louisiana's Comprehensive Master Plan for a Sustainable Coast. (2023). Coastal Protection and Restoration Authority of Louisiana. https://coastal.la.gov/wp-content/uploads/2023/06/230531_CPRA_MP_Final-for-web_spreads.pdf

Costs and Benefits of Building to Freeboard with an Open Foundation

This analysis is based on findings from the study "FloodSafeHome: Evaluating Financial Benefits and Savings of Freeboard for Improved Decision-Making in Flood Risk Mitigation", where experts across Louisiana investigate the financial implications of adding freeboard to residential structures in flood-prone areas. By quantifying both construction costs, and long-term savings associated with elevating homes above the Base Flood Elevation (BFE), the study provides valuable insights for this Study and the formation of the proposed Resilience Overlays.

Construction Costs

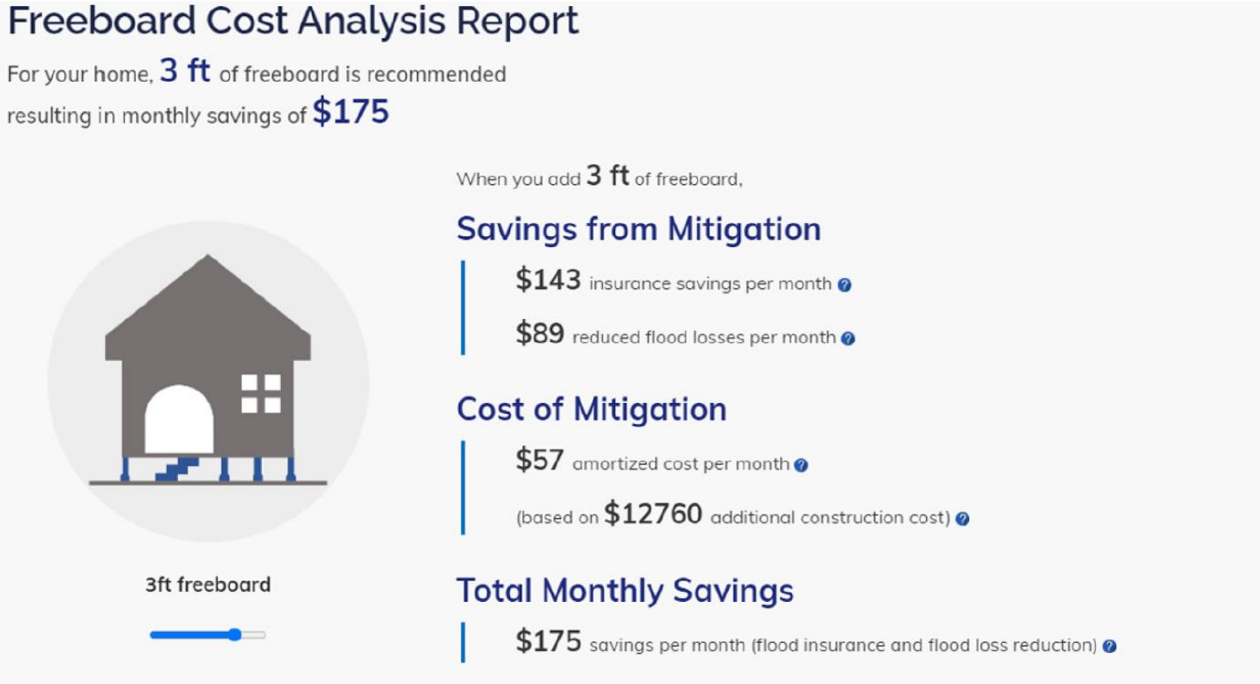
The cost of adding freeboard using open foundation systems, such as pilings and piers, includes material, labor, and engineering expenses. These systems are particularly effective in flood-prone areas, allowing water to flow beneath the structure and reducing hydrodynamic pressures during flood events. For a single-family home valued at $220,000, elevating the structure by three (3) feet above BFE costs approximately $20-$25 per square foot or approximately 15-20% of the cost of the home.[29]

Long-term Financial Benefits

1. *Insurance Premium Savings.* Elevating homes above the BFE can lead to substantial reduction in flood insurance premiums under the National Flood Insurance Program (NFIP). It was found that homes built at BFE may face annual insurance costs of $2,364. Elevating a home by three (3) feet could reduce this this cost by 72%, bringing it down to $662 annually.[26] Over the life of a 30-year mortgage, this results in total savings of $51,840 can significantly offset the initial investment in freeboard construction.
2. *Avoided Flood Losses.* Freeboard also significantly mitigates the risk of flood damage, reducing the depth and severity of flooding during weather events. For a home at BFE, the expected annual flood loss may be $1,587, including repair and content replacement costs. Elevating the structure reduces these losses by 67%, bringing the annual losses down to $532.[26] Over 30 years, the avoided flood damage totals $32,160, providing another substantial financial benefit.
3. *Enhanced Property Value.* Homes built with freeboard are often perceived as safer investments and have higher resale values due to their reduced flood risk and lower insurance costs, adding another layer of financial benefit.[26]

[29] Friedland CJ, Lee Y-C, Mostafiz RB, Lee J, Mithila SP, Rohli RV, Rahim MA, Gnan E and Farris MT (2023) FloodSafeHome: evaluating financial benefits and savings of freeboard for improved decision-making in flood risk mitigation.
Amended information above through input from Commissioner Brittany Robert.

Net Monthly Impact



The study found that when the costs of freeboard is amortized over a 30-year mortgage at a 3% interest rate, the additional monthly cost ranges from $19 to $76. This is significantly offset by combined monthly savings of $232 from reduced insurance premiums ($143) and avoided flood losses ($89), yielding net positive monthly savings of $175.[26] This demonstrates that freeboard not only mitigates flood risks but is also economically advantageous for homeowners. It should be noted that the cost of building a new home with three feet of freeboard varies by construction style, soil type, and foundation type, and therefore may cost more than shown in this figure[30].

Community-Wide Implications

On a broader scale, the adoption of freeboard strengthens community resilience. The Study Area, which accounts for one-third (1/3) of all repetitive loss properties in St. Tammany Parish, implementing a three-foot freeboard can help prevent further increases in these numbers. Constructing homes with open foundation systems at freeboard not only protects the elevated structure from flooding, but it also reduces the flood risk for neighboring properties by allowing flood water to flow freely beneath the home. Additionally, elevating homes to freeboard lessens the strain on disaster recovery programs and helps maintain property values[26] These collective benefits promote economic growth and community well-being in flood prone areas, while also enhancing eligibility for federal and state funding for mitigation programs and projects.

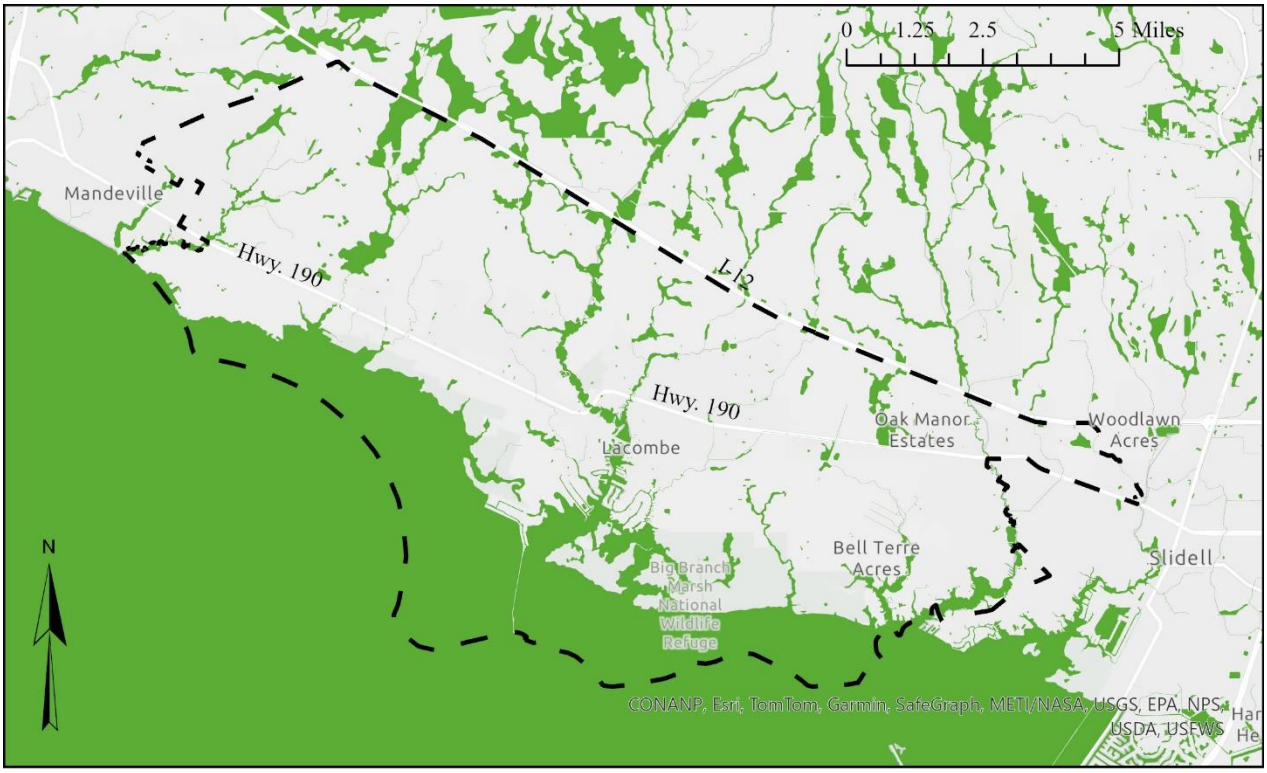
Environmental Conservation.

17.9% of the Study Area is zoned PF-2 Public Facilities District, which provides locations for public or non-profit facilities dedicated to conservation, outdoor recreation, and environmental education. 57.3% of the Study Area is mapped either Coastal Conservation or Conservation – Protected in the FLUM.

[30] Noted in the Planning Commission meeting on 1/14/25 by Brittany Robert, CFM.

Most of the protected land within the Study Area is within the Big Branch March National Wildlife Refuge, established in 1994 and located along the north shore of Lake Pontchartrain between the towns of Mandeville and Slidell.[31] The habitats protected by the refuge—including the shoreline, near shore grass beds, freshwater and intermediate marsh, bald cypress-tupelo forest, bayous, hardwood forest hammocks, and long-leaf pine savannah—support freshwater and marine fish, shorebirds, migratory waterfowl and songbirds, and the endangered red-cockaded woodpecker.

Map 14. Wetlands in the Vicinity.



Following Hurricane Katrina in 2005, the U.S. Fish and Wildlife Service identified Big Branch Marsh as a key area of the Northshore necessary for the protection of coastal communities from storm surge.

Consistency with Comprehensive Plan

The 2040 Comprehensive Plan identifies the need to conduct studies of local regulations to support adoption of low impact development in flood-vulnerable areas as a priority action item in support of the Parish's goal for "orderly, carefully planned, and predictable development." This Study aims to provide context in which future recommendations are focused on protecting the Study Area from incompatible development while ensuring any future development or redevelopment aligns with the Area's current and future conditions. Recommendations

[31] U.S. Fish and Wildlife Service. Big Branch March. https://www.fws.gov/refuge/big-branch-marsh/what-we-do

resulting from this Study will respect the Study Area's historic context, distinctive character, development needs, and its connection to the wider region. Relevant goals and strategies from the 2040 Comprehensive Plan include:

Land Use Goals and Strategies

1. **Goal 1:** Our land use, land development, and land redevelopment decision-making, policies, and processes will be fair, transparent, and accessible to all Parish stakeholders.
    a. *Goal 1—Strategy 2*: Make land use studies, including hydrological and transportation studies, conducted by the Parish available in a public format.
2. **Goal 2:** New development and redevelopment will be orderly, carefully planned, and predictable.
    a. *Goal 2—Policy 3*: Parish staff and decision-makers shall reference the Future Land Use Map when considering changes to zoning designations, budgeting for capital improvements, and adoption of future plans and policies impacting land use in the Parish.
3. **Goal 3:** The character of existing residential areas, expansive rural landscapes, and sensitive ecological areas will be preserved.
    a. *Goal 3—Strategy 2*: Protect and preserve historic buildings, natural lands and wetlands, and waterways.
4. **Goal 4**: Land and buildings will be developed in ways that lower the risk and incidence of flooding and flood damages caused by rainfall and storm surge.
    a. *Goal 4—Strategy 1*: Prevent intense new development and redevelopment in the Parish's "Area of Special Flood Hazard" unless extra environmentally sustainable mitigating steps are taken
5. **Goal 5:** Adequate infrastructure and utilities will be available in areas permitted for new development.
    a. *Goal 5—Policy 1:* Parish decision makers, including the Planning Commission, Zoning Commission, Board of Zoning Adjustments, and the Parish Council, should consider the impact of proposed changes to existing land use regulation on traffic and drainage in adjacent areas.
6. **Goal 6:** New development and redevelopment will be environmentally sustainable.
    a. *Goal 6—Strategy 1*: Promote, encourage and sometimes require sustainable stormwater-management techniques, such as pervious pavement and elevation on piers, in site planning and new construction.
    b. *Goal 6—Strategy 3*: Encourage traditional neighborhood developments featuring attractive, compact, walkable, mixed-use patterns throughout the Parish by maintaining zoning classifications and districts that permit traditional neighborhood development at various scales.
7. **Goal 8:** A variety of safe, affordable, and attractive housing types will meet the needs of our diverse community.
    a. *Goal 8—Strategy 1*: Maintain zoning classifications for **mixed use development** at various scales and intensities.

Living with Nature Goals and Strategies

1. **Goal 2**: Viable examples of our critical and sensitive areas, including native plant and animal habitats, tree resources, and wetlands, will be conserved, protected, stable, and flourishing.

a. *Goal 2—Strategy 2*: Restrict development within proximity of critical and sensitive areas through appropriate designation of zoning.

2. **Goal 3**: Our waterways, watersheds, floodplains, and groundwater will be protected, maintained, and restored to maximize water quality and sustain a drinkable water supply.
    a. *Goal 3—Strategy 3*: Minimize construction of impervious surfaces in new development and redevelopment to reduce stormwater runoff.
3. **Goal 5**: Existing onsite wastewater treatment systems will be upgraded and maintained to meet modern standards, preventing pollution of local water bodies.
    a. *Goal 5—Strategy 1*: Require homeowners with on-site septic systems to conduct proper operation & maintenance of their systems.
    b. *Goal 5—Strategy 3*: Encourage new development and redevelopment, and owners of existing property with septic systems, to connect to centralized sewerage systems.
    c. *Goal 5—Strategy 7*: Encourage new subdivisions to use wastewater treatment companies with favorable operating records from the Louisiana Department of Environmental Quality.

The Study Area has many residential sites that use septic tanks. From 2016-2019, a portion of Bayou Liberty participated in the "Pollution Source Tracking in Bayou Liberty Watershed" Pilot Program to improve operation and maintenance of septic systems. Huge improvement was shown, and amendments for expanding the Decentralized Management Program may be advantageous.

People and Communities Goals and Strategies

1. **Goal 3**: Neighborhoods throughout the Parish will share high access to quality public facilities and services, including schools, public safety facilities, recreation facilities, and libraries.
    a. *Goal 3—Strategy 2*: Coordinate with the Parish's Fire Districts to identify newly developed or other areas lacking adequate fire protection.
2. **Goal 5:** People of all ages and backgrounds will feel safe and secure in their homes, neighborhoods, and throughout the public realm.
    a. *Goal 5—Strategy 3*: Ensure that new development and redevelopment does not price out and displace long-term residents, elderly, and poorer residents.

Study Area: Strengths, Weaknesses, Opportunities, and Threats (SWOT Analysis)

Strengths

- Engaged and active community groups and interested stakeholders
- Significant flood storage provided by undeveloped areas
- Proximity to several major transportation connections – I-12/433/190
- Proximity to recreational opportunities
- Proximity to Slidell/Mandeville
- Historic buildings as an amenity

Weaknesses

- Significant current and future flood risk based on coastal and riverine models.

- Development pressure in areas prone to flooding and providing Regional flood storage
- Limited central sewerage and water infrastructure
- Lack of affordable housing and housing options
- Limited road capacity due to historic development rural development patterns
- Limited resources to retrofit existing areas to adapt to new development and increased flood risk
- Environmental concerns increase when challenges from wetlands, coastal, gravity drainage, and groundwater quality issues are combined.

Opportunities

- Future roadway widenings intended to improve accessibility and connectivity to surrounding areas
- Existing large undeveloped parcels zoned low-density residential
- Continued population and economic growth
- UDC better mitigates flooding associated with new development
- PUDs could be utilized to develop more diverse housing options that are adaptive to local risk

Threats

- Development pressure including pressure to provide high density residential development at the risk of floodplain capacity.
- Lack of sewer and water infrastructure
- High flood insurance premiums
- Additional development in the Area could increase flooding both in the Study Area and along Bayou Lacombe
- More intense rainfall events exceeding drainage system capacity
- Sea level rise and subsidence contributing to future flood risk

Appendices

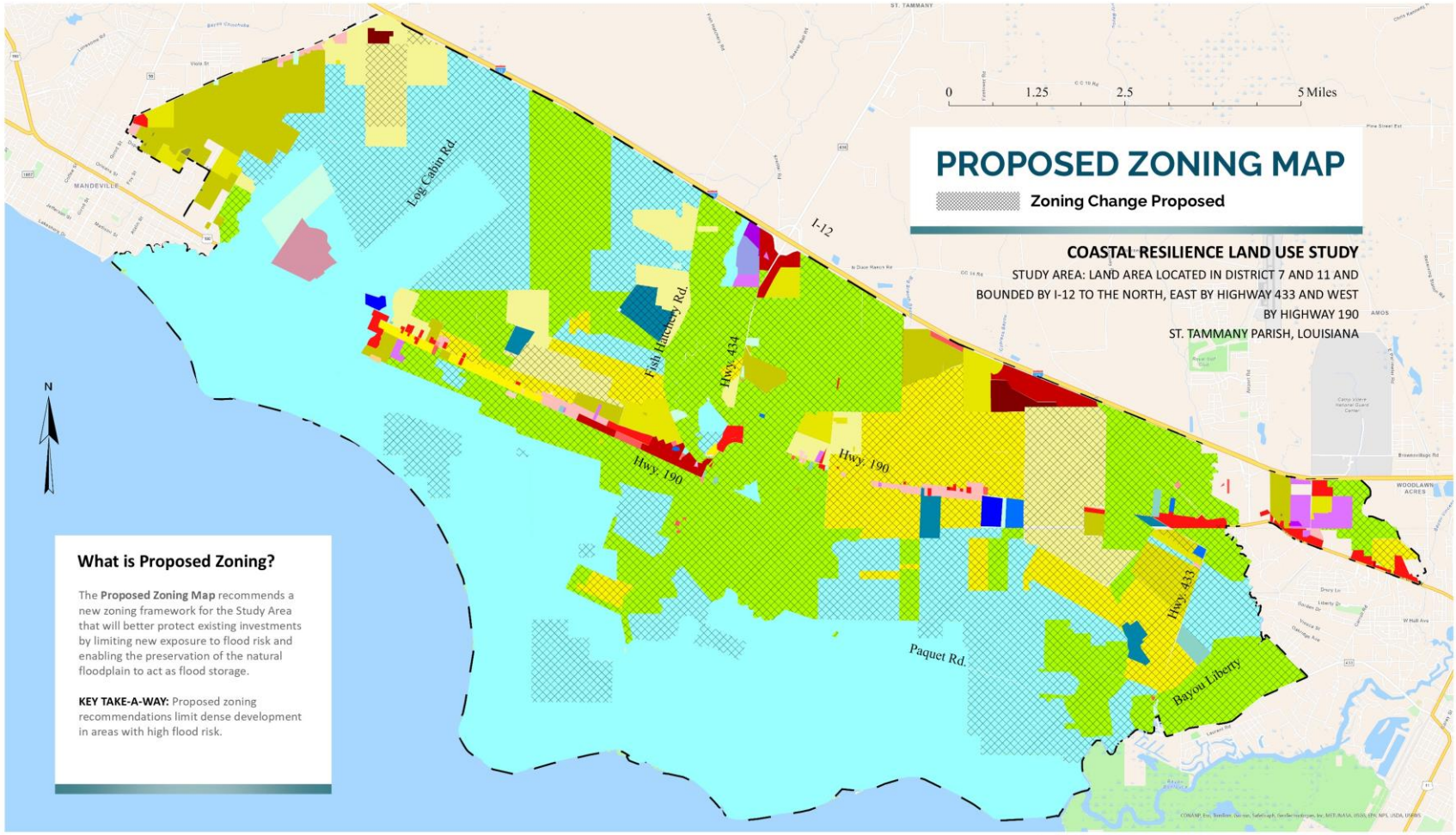
Appendix A – Copies of each Moratorium

Appendix B – Zoning District Conversion Tables from the UDC (see 2023.11.14 - UDC Staff Report.docx)

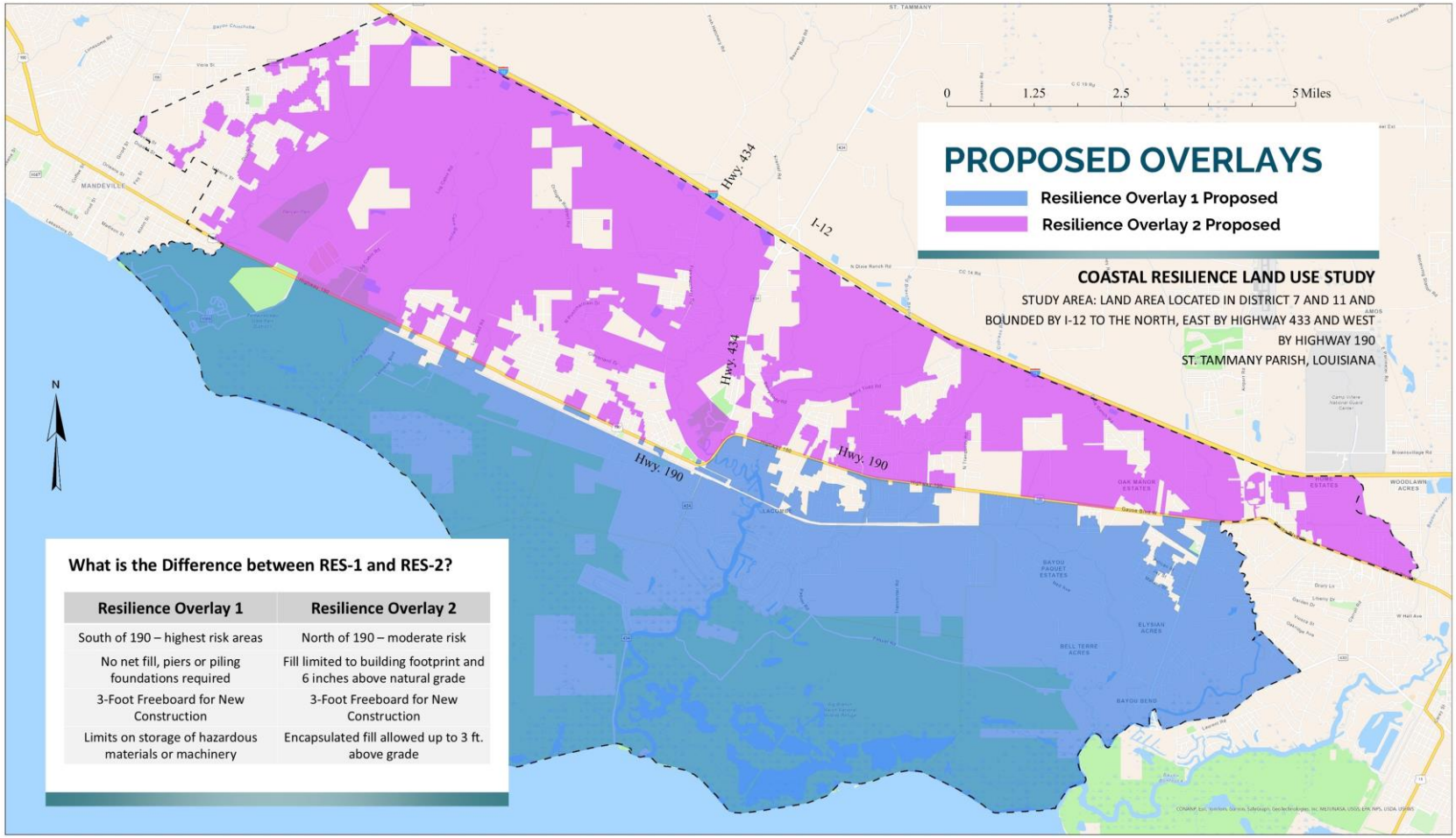
Appendix C – PUD Standards and Requirements

MAP PAGE 1: Existing Zoning

MAP PAGE 2: Proposed Zoning



MAP PAGE 3: Proposed Overlays



What is a Resilience Overlay Zone?

Where a parcel of land is located in a area with severe flood risk, the Parish is considering the adoption of Resilience Overlay Zones, which are zoning overlays that have higher standards for building and development to protect against flooding and other natural hazards.

These zones require things like structural elevation, limiting use of fill, and using construction methods that make homes and structures more durable against storms. These extra safeguards help reduce future flood damages.

Produced by:
Evelyn Campo, CFM and Alex Carter AICP, Desire Line 3813 Division Street, Suite A, Metairie, La 70002
EvelynCampo@Desire-Line.com; AlexGelpiCarter@Desire-Line.com

Map Date: October 20, 2024

Study Area

DESIRE LINE

MAP PAGE 4: Proposed Future Land Use