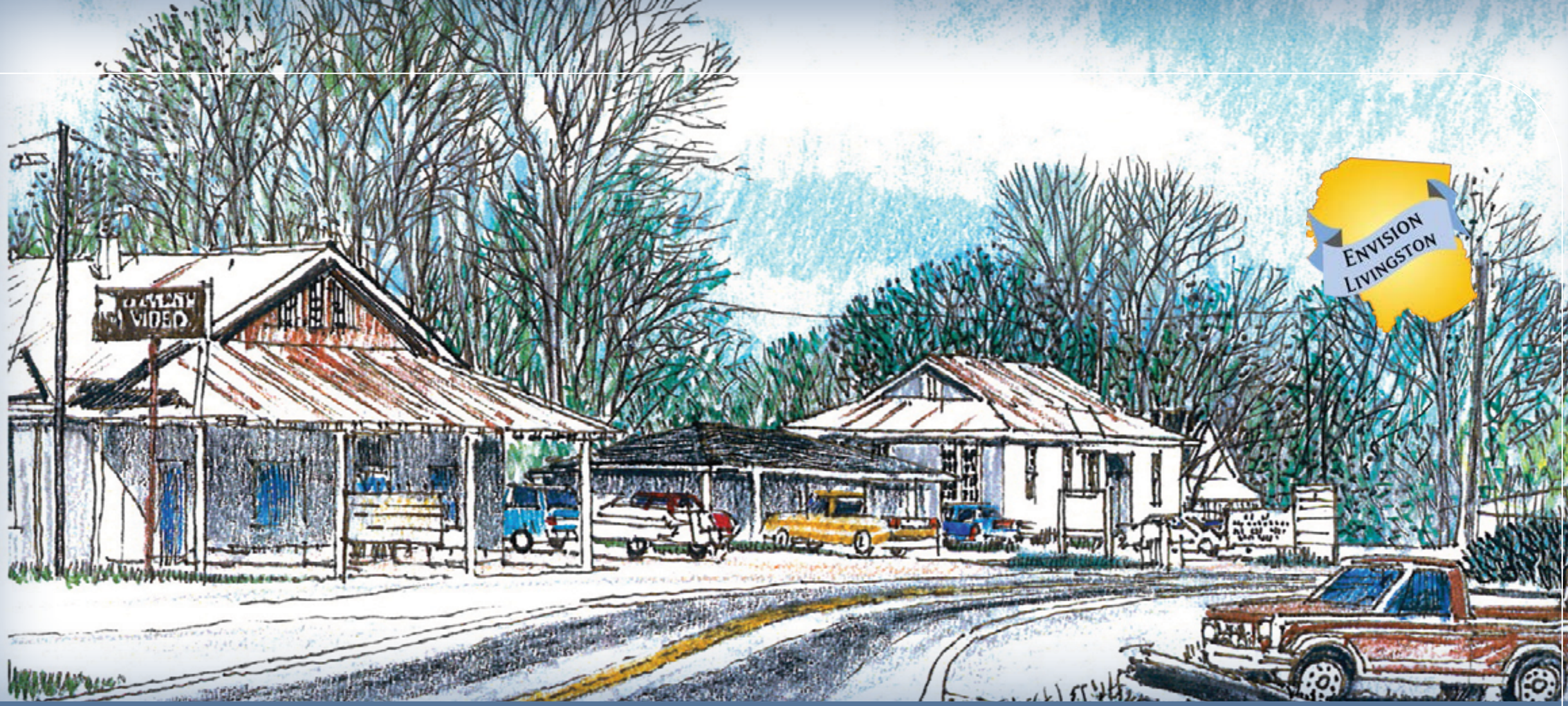

ENVISION LIVINGSTON

A Comprehensive Master Plan for Investing in Our Future

Livingston Parish, Louisiana

Envision Livingston

A Comprehensive Master Plan for Investing in Our Future

Livingston Parish, Louisiana

Acknowledgments

The Livingston Parish President's Office

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- Mary Kistler, Executive Assistant
- Heather Crain, Grant Coordinator

The Livingston Parish Council

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- Preston Kilcrease, Ward 2 Water Director
- Chuck Vincent, LP Building Official
- Tom Walton, LP Public Works Director

The Livingston Parish Staff

Comprehensive Master Plan Stakeholders

Members of the public

The Plan was funded with a federal grant from the Federal Emergency Management Agency's Long-term Recovery Program as a way to address long-term recovery and rebuilding in the aftermath of the 2005 hurricane season.

THE STATE OF LOUISIANA

THE PARISH OF LIVINGSTON

The Livingston Parish Planning Commission met in special session being called, advertised and convened at its regular meeting place, the Parish Health Unit, Conference Room #124, on Wednesday, April 17, 2013, at the hour of 5:30 PM

Invocation was given by Joe Koczrowski

Present:	Gerald Burns	Chairman
	Joe Koczrowski	
	Kenny Morrison	
	Bob Scivicque	
	Ronnie Bailey	
	Mike Reed	Co-Chairman
	Kathy Long	
Absent:	Mark Kinchen	
	David Tucker	

The Chair called the meeting to Order then turned the meeting over to Mr. Winston and Mr. Glasgow who discussed the Comprehensive Master Plan. There was a lengthy discussion with the board and audience. Kenny Morrison offered a motion to adopt the Comprehensive Master Plan and duly seconded by Bob Scivicque.

The following motion was read:

"Whereas, the Livingston Parish Planning Commission recognizes the importance of planning for future growth and development so the Parish can efficiently accommodate projected growth in a cost effective manner while preserving the quality of life enjoyed today.

Whereas, the Comprehensive Master Plan was developed with extensive input collected in over 75 meetings including stakeholder meetings[1], technical advisory committee meetings, issues meetings[2] and public meetings and additional input was sought through: a website managed by the parish, several advertisements in and press releases to newspapers, email notifications, and personal invitations.

Whereas, throughout the planning process the input received was used to steer the planning process.

Whereas, the Parish has drafted the plan with the help of the Comprehensive Master Plan Steering Committee that was appointed by both the Parish President's Office and the Parish Council and represents a wide variety of interests and viewpoints in the parish.

Now therefore, the Livingston Parish Planning Commission hereby adopts the Livingston Parish Comprehensive Master Plan entitled Envision Livingston and recommends it for adoption by the Livingston Parish Council.

The approved Comprehensive Master Plan is an "administrative approval draft" that contains text, maps, illustrations, and tables, as well as recommended goals, actions, strategies. It is understood that the Comprehensive Master Plan may be published, without further approval, in an illustrative format, with additional illustrations, tables, and photos, along with minor editing and error corrections, so long as the intent of the document and its recommendations is not significantly altered."

Upon being submitted to a vote, the vote thereon was as follows:

YEAS:	6
NAYS:	1
ABSTAIN:	0
ABSENT:	2

Thereupon, the Chairman declared the Motion had carried and was adopted.

[1] Stakeholder included meeting with such groups as the mayors, the Livingston Economic Development Corporation, local citizen groups such as the Citizens for Infrastructure in Livingston Parish and Neighbors in Action, with local librarians, etc.
[2] Issues meetings included meetings with the Capital Region Planning Commission, Gravity Drainage Districts, individual municipalities, etc.

[illegible]

[illegible]

LPR NO. 13-164

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

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YEAS [illegible]

NAYS NONE

ABSENT NONE

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

istockphoto/dbvirago

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Envision Livingston 1

What is a Comprehensive Master Plan?

The purpose of planning ahead is to "get the big stuff right". To remain a useful tool the Plan must be kept current

1 What is a Comprehensive Master Plan?

Our Parish is increasingly changing from a rural to suburban, and even in some cases a semi-urban environment.

As growth occurs infrastructure (roads and utilities) is needed. Infrastructure is very expensive. Anticipating where growth is going to occur, and what kind it is likely to be, can help us put infrastructure, and the other "big things" (such as schools, sewer plants, etc.) in the right locations, and at the right sizes. This can help avoid costly mistakes such as building roads too small for projected traffic volumes, not having servitudes wide-enough for roads in the future, and under-sized water or sewer lines. And, since the maintenance of infrastructure is also very expensive, extending roads and utilities before there are enough homes and businesses to pay for them can increase Parish costs, and increase taxes on everyone.

The discussion above focused on the relationship of only three issues: roads, utilities and land use. There are many other issues that are also related to growth and development in Livingston Parish.

In order to plan effectively for the future it is important to keep in mind that **all of these issues are interrelated** (see Figure 2). For example, decisions about the size and location of roads (transportation) affect the Parish's budget (fiscal), where homes and stores should be developed (land use), where businesses will be attracted to (economic development), and how evacuations can be handled (emergency preparation). Similarly, decisions about where to extend public sewer affects where roads can be built, where and how many homes and businesses land will accommodate, the Parish budget, the quality of our rivers and lakes, etc.

The purpose of planning ahead is to "get the big stuff right", that is, to anticipate where growth is likely to occur (and what kind of growth it is likely to be), so that we can plan for the right size of servitudes, roads, schools, power lines, drainage channels, etc.—in approximately the right locations. It is much less expensive to put them in "right" in the first place, than it is to impact existing development to install them, or to replace them.

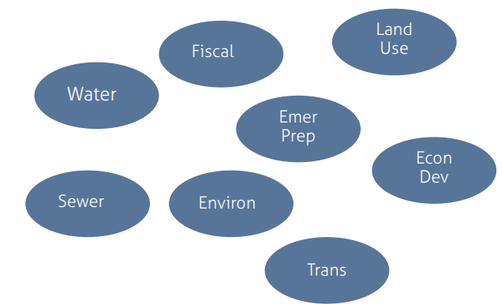
The decisions by many businesses and even homeowners about where to locate are often influenced by the level of predictability about what will happen where whether they feel that the Parish is in fact "planning ahead" so that they can be confident their investments will be secure as development continues.

The Livingston Parish Comprehensive Master Plan (CMP) is a tool for planning ahead, for trying to anticipate where growth will occur, and be cost-effective in where we invest in infrastructure.

The CMP also helps us accommodate growth in a way that preserves our quality of life. It can help us assure that future development is compatible with existing neighborhoods, and that roads, parks, trails and schools are planned for. This gives existing and future residents, who are also "investors", confidence in making their own decisions with a more secure vision of the future.

For these reasons this CMP has been subtitled "a comprehensive master plan for investing in our future." **If followed it will help everyone make better choices, reduce conflicts, and help make the parish an even more attractive, functional place to live and work.**

Figure 1: Watson exemplifies urbanization in the Parish



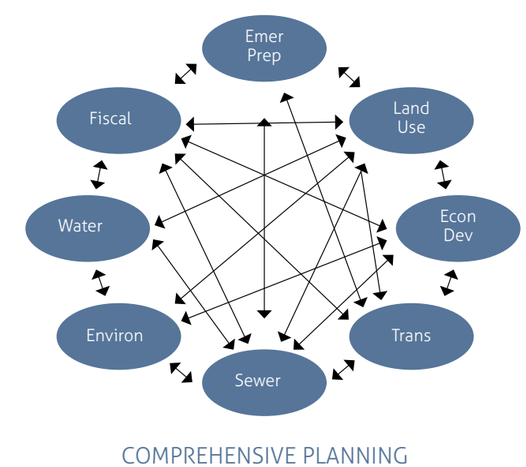


Figure 2: Growth is influenced by a variety of factors. A comprehensive plan examines how those factors can be coordinated for cost-effective growth

Key Concepts of the Plan ("Plan on a page")

1. **The Parish is projected, and has the capacity, to double in population over the next 30 years.** As development pressure increases, if we want to preserve our quality of life we have to plan ahead.
2. **Growth pressure is following a "barbell" pattern** from the west and east sides of the Parish. Large areas of the Parish will not experience development pressure, and don't need extensive planning or regulation.
3. **Attracting good businesses is important to our sustainability.**
   - i. The loss of sales tax revenue hinders our ability to provide amenities as well as necessities.
   - ii. Predictability and appearance is important to those we want to move here.
4. **Future economic success in the Parish will be dependent on:**
   - i. **An interconnected system of major roads.**
   - ii. **Regional sewer.**
   - iii. **Added capacity for domestic water service**.

   We've been talking about these needs for years; it's time to get organized to bring them about.
5. **Development follows sewer/roads, and vice-versa.** Where we invest in infrastructure (roads, water and sewer) will influence where development occurs. Where development occurs will influence where infrastructure is needed. To get the "big stuff" right we need to coordinate where we invest in our resources.
6. **Growing our infrastructure incrementally is less expensive than scattered growth** ("leap frog" development).
   - i. Road maintenance is paid by taxes. Roads are expensive to build and maintain (as much as $15,000 per year for every mile of road). In the long run, the homes and businesses along the road help pay for the road with their property taxes. When roads are extended long before development occurs, the cost is born by all the residents and businesses of the Parish. It is more economical to extend roads in balance with where development will help pay for them.
   - ii. Similarly, the cost of utilities and services (police, fire, school buses, etc.) is affected by the distances they serve vs. the number of homes and businesses.
7. **Being considerate of neighbors** will make the Parish a better place to live and work. For those living here now, and those to come, we need to find ways to avoid locating incompatible uses next to each other.

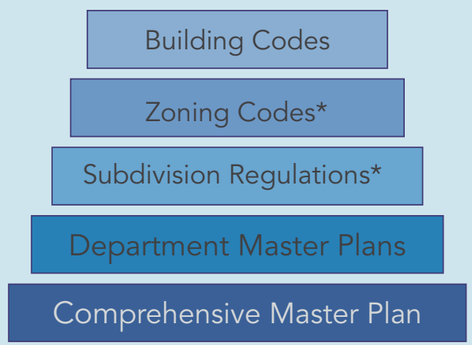


Figure 3: A comprehensive master plan is the foundation for all other plans

** If/where adopted.*

Key Recommendations of the Plan

1. **Use the Anticipated Land Use Map** as an initial/interim guide for where and how development is likely to occur and to make land use and infrastructure decisions.
2. **Adopt zoning, and basic design guidelines in the critical U.S. Highway 190/Interstate 12** "economic corridor" to encourage needed, quality economic development (employment and commercial uses).
3. **Begin working with individual subareas** ("self-determination" areas) of the Parish to determine the degree to which they wish to increase predictability of land uses. Incorporate their plans into an update of the Comprehensive Master Plan (CMP).
4. **Adopt the Major Street Plan of the CMP** and use it to make sure that future development doesn't preclude the ability to create an interconnected system of roads to reduce congestion in the Parish. Update the Major Street Plan.
5. **Convene "summit meetings" of water and sewer providers** to begin the process of planning how to provide the necessary services that will enable sustainable growth of the Parish.

How is the Plan Used?

The CMP is advisory. It is not a regulation. It is intended to be a general guide for decisions about infrastructure and land use by the Parish Council, Planning Commission, and Parish staff, as well as by property owners, businesses, and developers.

The CMP may be thought of as:

- A "blue-print" for encouraging compatible future development.
- A guide for decision making by individuals, agencies, and businesses—and a tool for helping coordinate their decisions for the common good.
- A list of objectives and actions that the community intends to accomplish over the coming years.
- A foundation for other Parish plans, regulations, and budgets.

Because the CMP is general there are many details that need to be worked out. These details are generally addressed in several ways:

- As part of detailed subarea plans.
- During the Parish process for reviewing/approving individual projects.

And finally, if the CMP is **to remain a useful tool, it must be kept current**. That means that as developments are approved, the CMP should be updated. As other conditions change, the CMP should be updated. If the CMP does not reflect how the Parish is actually growing, and intends to grow, it will cease to be helpful in "planning ahead", and decisions will revert to being made on a case-by-case basis with no overall sense of direction or predictability.

How to update the plan

As conditions change (e.g., public opinions change, the economy adjusts and/or new ideas emerge) updates to the CMP will be necessary. Two types of updates are envisioned:

- A **major update** is one that substantially changes the land uses, goals, or intent of the plan. Major updates should address the implications for each element of the CMP and should include substantial public outreach (see public outreach in the appendix[1]).
- **Minor updates** do not change the intent of the plan. They include clerical corrections, updates to data, and clarification of the plan. Minor updates should be made as often as necessary. They may be made by Parish staff administratively, with notification of the Council and Planning Commission.

Authority for the Comprehensive Master Plan

The CMP was developed pursuant to the Louisiana Revised Statues (LRS). LRS Section 33:101 defines a master plan as:

"A "Master Plan" means a statement of public policy for the physical development of a parish or municipality adopted by a parish or municipality"

Section 33:106 identifies what a master plan can do, it states that:

"Any such plan shall provide a general description or depiction of existing roads, streets, highways, and publicly controlled corridors, along with a general description or depiction of other public property within the jurisdiction that is subject to the authority of the commission"

Then purposes of a Master plan are further described in section 107:

"In the preparation of such plan, a parish planning commission shall make careful and comprehensive surveys and studies of present conditions and future growth of the parish, with due regard to its relation to neighboring territory and to the relation of unincorporated territory in the parish to incorporated territory therein.

In the preparation of such plan a municipal planning commission shall make careful and comprehensive surveys and studies of present conditions and future growth of the municipality and its environs.

A plan shall be made with the general purpose of guiding and accomplishing a coordinated, adjusted, and harmonious development of the parish or municipality, as the case may be, and its environs which will, in accordance with present and future needs, best promote health, safety, morals, order, convenience, prosperity, and general welfare, as well as efficiency and economy in the process of development; including, among other things, adequate provision for traffic, the promotion of safety from fire and other dangers, adequate provision for light and air, the promotion of the healthful and convenient distribution of population, the promotion of good civic design and arrangement, wise and efficient expenditure of public funds, the adequate provision of public utilities and other public requirements, and in the case of a municipal planning commission, vehicular parking."

This LRS section 106 authorizes regular updating of master plans:

"As the work of making the whole master plan progresses, a commission may from time to time adopt and publish a part or parts thereof, any such part to cover one or more major sections or divisions of the Parish, or one or more of the aforesaid or other functional matters to be included in the plan. A commission may from time to time amend, extend, or add to the plan."

How was the Plan developed?

The plan was developed with **extensive input** from residents, businesses, staff, and elected and appointed officials. Early in the process, individual meetings were held with a variety of interest groups throughout the Parish (the Livingston Economic Development Council, Neighbors in Action, Citizens for Highways and Infrastructure, real estate professionals, community groups, mayors and city representatives, etc.).

In addition, **two rounds of public meetings** were held in locations throughout the Parish. All of the meetings were extensively publicized and reported in news media. A website provided additional opportunities for the public to be informed and provide comments. This public input helped identify issues and concerns and refined the directions that emerged from the plan.

Public feedback was augmented by more detailed information provided by a **Technical Advisory Committee** representing departments of the Parish as well as regional agencies (e.g. water, sanitation and drainage districts).

A **Steering Committee** of individuals with backgrounds and interest that reflected the Parish as a whole provided valuable feedback and effectively "steered" the emerging concepts — not only by critiquing ideas of others, but also by generating many of the concepts and priorities in the plan.

In the Spring of 2013, both the Livingston Parish Planning Commission and Parish Council adopted the plan.

Figure 4: Two rounds of public input meetings were held in each of the 9 Parish council districts, in addition to over 50 meetings with interest groups and committees

Figure 5: Issues identified at the first round of public meetings

1 *Appendix is in a separate document and may be obtained from the Parish.*

Where Do I Find...?
(How the Plan is Organized)

Chapter 1 contains an overview of the plan, it's purpose how it was created, methods for updating it, and it's key concepts and recommendations.

Chapter 2 reviews the history of growth in the Parish and presents a snapshot of current conditions in the Parish.

Chapters 3-9 address individual topics:

- Land use (Chapter 3),
- Wastewater (Chapter 4),
- Transportation (Chapter 5),
- Drainage (Chapter 6),
- Domestic Water (Chapter 7),
- Emergency Preparedness (Chapter 8),
- and Coastal Management (Chapter 9).

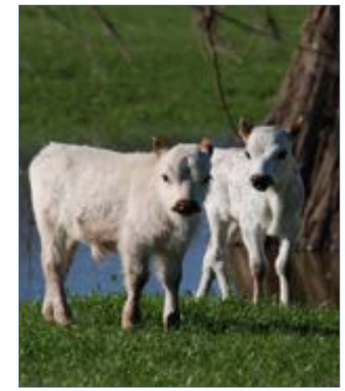
Each chapter identifies "what we have today" (current conditions and issues), "what we need" (possible options for future decision-making), and recommendations for implementation. Each takes into account the key elements of other chapters.

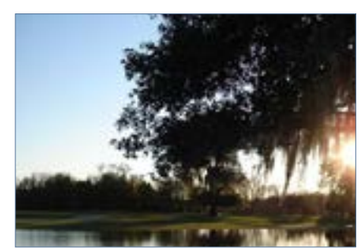
Chapter 10 summarizes the various implementation recommendations of all chapters of the CMP.

Chapter 11 is an atlas of key maps: the Existing Land Use Map, the Anticipated Land Use Map, and the Major Street Plan.

The **Appendix**[2] summarizes the public planning process and provides detailed supporting and background information for various elements of the CMP.

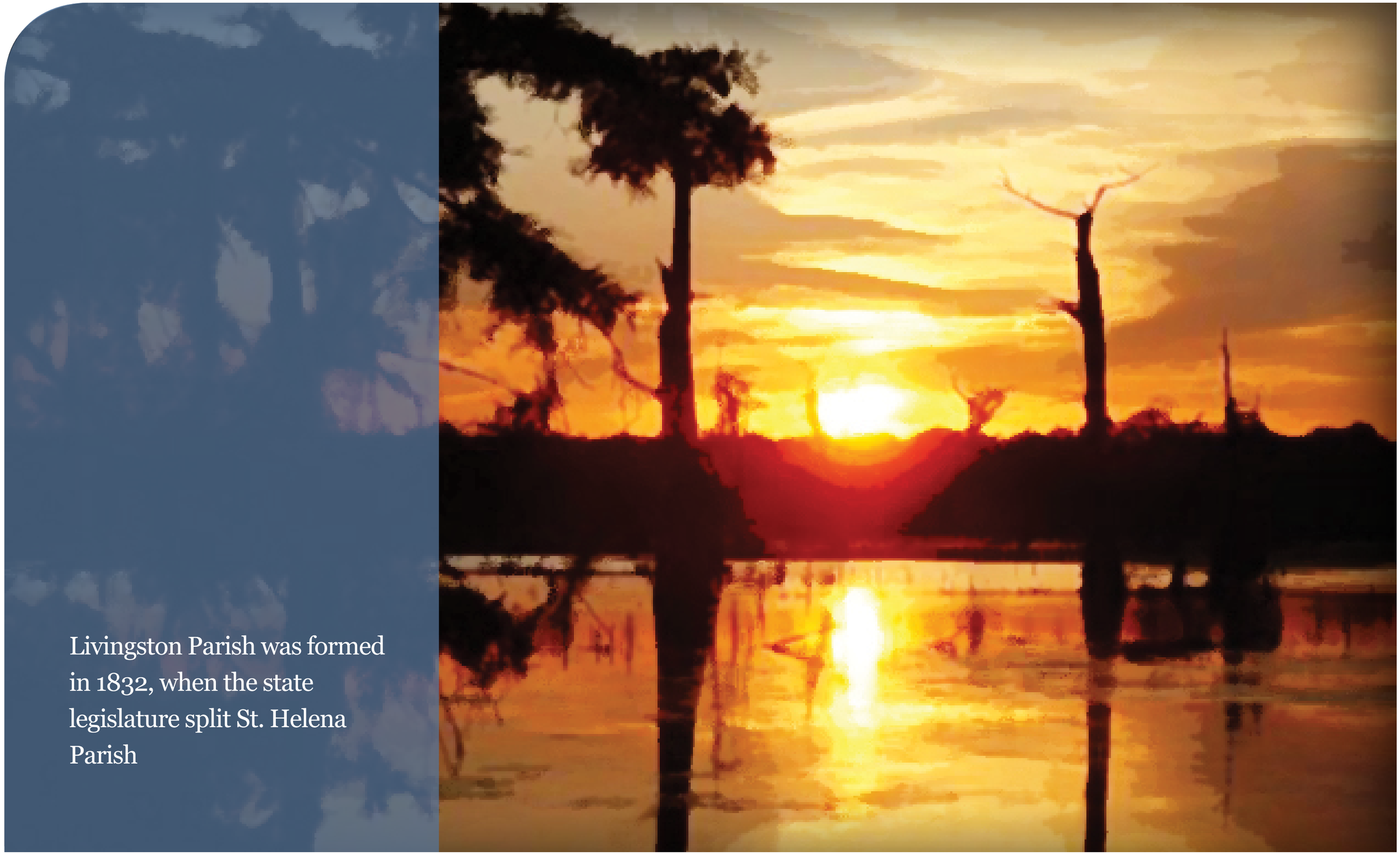
2 Appendix is a separate document and may be obtained from the Parish





Photos Courtesy of Neighbors In Action

Envision Livingston 2
Existing Conditions and Trends



Livingston Parish was formed in 1832, when the state legislature split St. Helena Parish

Photo Courtesy of Neighbors' In Action

To plan for the future, we must examine where we came from.

A clear accounting of today's assets and liabilities, and how they have changed over time, will help us understand where we are headed. Such an assessment will help us better understand what modifications to our current course are necessary to maintain our values and way of life as the Parish grows.

Our History of Growth

Early 1900s to the Great Depression - timber and railroad

The Parish population (originally European immigrants) started to grow after the French and Indian War, which ended in 1765. As the demand for building materials rose in Livingston Parish a port was developed at Springfield on the Tickfaw/Natalbany River. The port remained viable for over a century.

Livingston Parish was formed on February 10, 1832, when the state legislature split St. Helena Parish.

Logging of both pine and hardwoods influenced the creation communities in other areas of the Parish. The Lyon Cypress Lumber Company (later renamed the Lyon Lumber Company) established the company town of Livingston in the early 1900s.

The railroad from Baton Rouge to Hammond steered growth in the Parish in the early 1900s. The Garyville Northern Railroad Company/Illinois Central Gulf line ran through both Denham Springs and Livingston. Denham Springs became the shipping and agriculture hub when the train station was built. The railroad alignment encouraged growth in the center of the Parish but negatively impacted Springfield and Port Vincent in the south.

A road connection from Denham Springs to Baton Rouge made it easier for residents to work in Baton Rouge plants and businesses. Denham Springs became the commercial and banking center of the Parish.

When the Great Depression hit, the price of commodities dropped considerably. The lumber mill in Livingston closed in 1931. Because it was largely a company town, all but about 12 families moved out of the area. By 1937, both banks in Livingston Parish had closed.

Post World War II to the 1980s

After World War II, the construction of U.S. Highway 190 (today Florida Boulevard) parallel to the railroad steered the growth pattern in the Parish to its geographic center. That pattern was continued with the construction of Interstate 12, which encouraged additional growth in the Parish in the 1970s and 1980s.

Parish growth accelerated during the oil boom of the 1970s. **The Parish grew from a population of 36,511 in 1970 to 58,806 in 1980, an increase of 62 percent.**

In 1986-87, the cost of oil dropped considerably and, due to its dependency on oil and gas production for jobs, another depression hit Livingston Parish. It took approximately 10 years to recover.

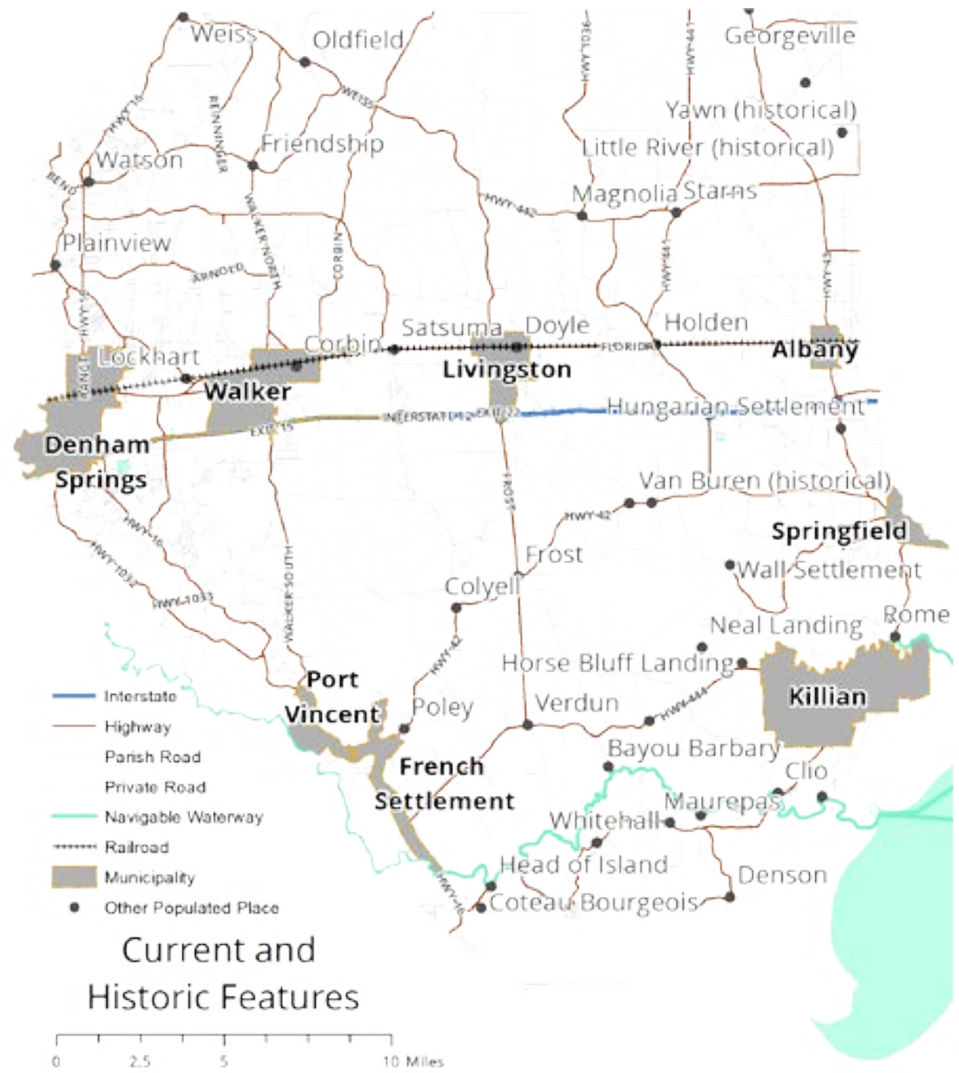


Figure 6: Current and historic features

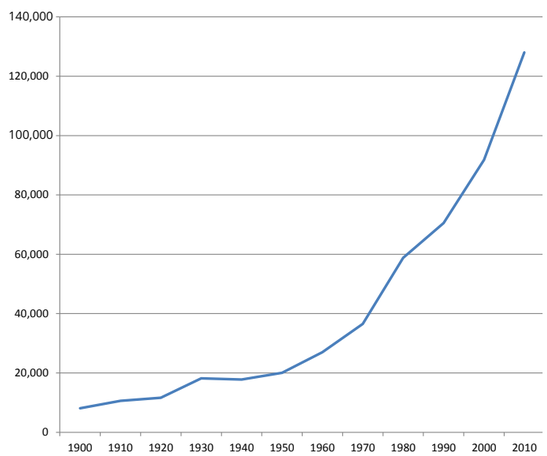


Figure 7: Livingston's recent population growth

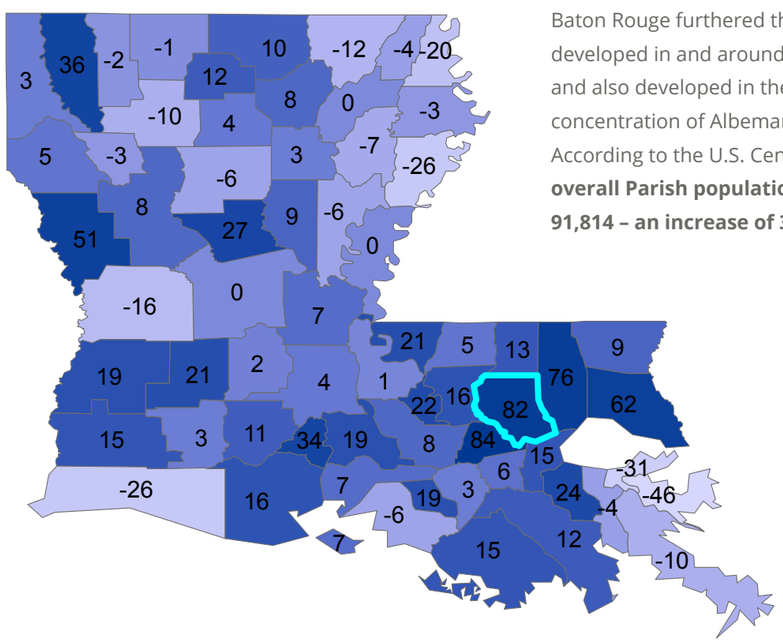


Figure 8: Map displays percentage growth between 1990 and 2010, only Ascension Parish grew faster

Notwithstanding the oil bust and recession, residents and businesses continued to migrate to the Parish. According to the U.S. Census, **between 1980 and 1990, the Parish population increased from 58,806 to 70,526**—an increase of 19.9 percent. The first major manufacturer, Sunland Fabricators, located in the Parish in 1986. Other small firms followed including Compressor Engineering Corporation of Houston.

Exodus from Baton Rouge in the 1990s

The Parish grew even more in the 1990s from an increasing exodus of residents from Baton Rouge. While the job base continued to be located mainly in Baton Rouge, the highway system allowed relatively convenient commuting from inexpensive land in the Parish. The Parish's focus on creating good public schools began to attract the middle class from Baton Rouge. Desegregation laws and high crime rates in Baton Rouge furthered that trend. Many subdivisions developed in and around Denham Springs and Walker; and also developed in the Watson area where a large concentration of Albemarle Corporation workers lived. According to the U.S. Census, **from 1990 to 2000 the overall Parish population increased from 70,526 to 91,814 – an increase of 30.2 percent**.

The Impact of Katrina and Rita

The 1990 growth rate continued in the early 2000s. In 2005, the impact of Hurricanes Katrina and Rita sent the largest influx of residents to the Parish, many of them evacuees from storm-ravaged areas to the South. **The Parish gained more than 36,000 residents during the 2000-1020 decade, the great majority arriving after 2005. The Census Bureau estimates that between 2007 and 2008, 57 percent of the population growth in the entire Baton Rouge Metropolitan region occurred in Livingston Parish.** Growth continued to focus in Watson, Denham Springs and Walker but it also spread to Livingston, Holden and in the south along the Amite River and the Diversion Canal.

From 2005 - 2008, with population growth, the Parish also added 265 net new businesses, including Bass Pro Shops. The Parish's total wages grew 56 percent, more than any other parish in the Capital Region. Median household income increased from $25,470 in 1989 (just before the growth spurt began) to $57,254 today. In 2009 and 2010, North Oaks Health System and Our Lady of the Lake Regional Medical Center (respectively) began construction on Livingston's first two hospitals.

Table 1: Population of the Parish over the past century (Source: U.S. Census)

Census	Pop.	(%±)	Influence
1900	8,100		Lumber
1910	10,627	31.2%	RR, lumber
1920	11,643	9.6%	RR, lumber
1930	18,206	56.4%	RR, lumber
1940	17,790	−2.3%	Depression
1950	20,054	12.7%	Highway to BR
1960	26,974	34.5%	Highway to BR
1970	36,511	35.4%	Highway to BR
1980	58,806	61.1%	Highway to BR
1990	70,526	19.9%	Oil price drop
2000	91,814	30.2%	White flight
2010	128,942	39.4%	Rita/Katrina

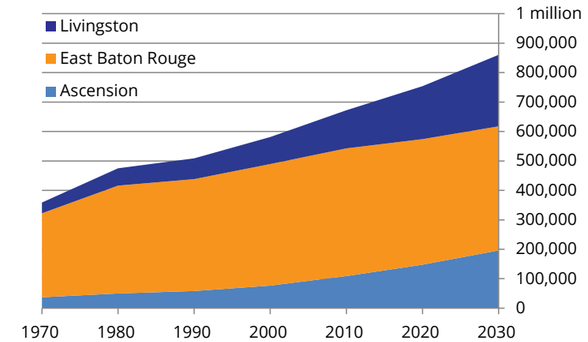


Figure 9: Livingston's population is expected to double by 2030 and have an increasing share of the Capital Region's growth

According to the U.S. Census, during the decade of 2001-2010 the Parish growth of 39.4 percent was second in the state only to Ascension Parish (at 39.9 percent) in both growth rate and absolute population growth.

More recently, growth has slowed somewhat due to the 2011 recession, but overall growth in the Parish is expected to continue, with estimates[1] of 245,000 by 2030—a doubling of the current population of 128,000.

It may be difficult to imagine but if it materializes the **projected growth over the next 20 years will equal or exceed the highest growth rate in Parish history**, and the amount of growth will far exceed our previous experience (see Figure 9).

1 *Dr. James Richardson, Louisiana State University, Department of public administration.*

The Growth "Barbell"

If growth continues in the Parish even close to the increase predicted over the next 20-30 years (approximately 120,000 more people, and up to 40,000 more homes), where will this growth go? What impact will it have?

Growth and development typically follow access (roads, rivers, rail, air, and internet) and growth in Livingston Parish has been no exception: growth has followed the railroad tracks, U.S. Highway 190, and Interstate 12. The current widening of Interstate 12 will continue this trend.

In the last several decades, most of the growth in the Parish has occurred in the west due to its proximity to Jobs in East Baton Rouge and Ascension Parish.

French Settlement has also begun attracting growth due to the relatively close access to industrial jobs in Ascension Parish (via LA 42 and 16).

More recently, growth is also beginning to occur in the eastern edge of the Parish, a spillover from the growth in Hammond that is extending westward.

By contrast, the north-central, northeastern and southeastern areas of the Parish are further away from the major highway system, rail, other development and services and thus not experiencing significant development pressure.

The result of these growth trends is forming a "barbell" (see Figure 10) pattern that some estimate will continue to grow from both the east and west toward the middle of the Parish.

The Parish is experiencing three general rates of growth:

1. **High Growth (the "economic corridor")**: High growth is primarily occurring or expected in the Interstate 12/U.S. Highway 190 corridor from the edge of East Baton Rouge Parish to just west of Albany. Major cities of the Parish are located in this corridor, as well as Juban Crossing and two new medical campuses.

   The area was identified by the Comprehensive Master Plan (CMP) Steering Committee and the Livingston Economic Development Council (LEDC) as the area expected to see the most demand for future growth—commercial, industrial and even high density residential. It was also identified by members of the Parish Council as an area that should develop with simple design guidelines.
2. **Medium Growth**: This area has experienced significant residential and some commercial growth. The Watson area is an example of the growth pattern expected. The area is likely to see continued residential growth, with commercial development happening at arterial intersections.
3. **Low Growth**: This area is not likely to see significant growth in the near future. To the north, the land is primarily used for timber and to the south swamps and wetlands are dominant. While recreation attracts some to the south, it is not expected to bring substantial development. As no major infrastructure is planned in this area, it is generally expected to have a residential density of less than < 1 unit per acre.

The Parish is in the process of planning two other large transportation projects, an airport and a toll road, that have the potential to accelerate growth.

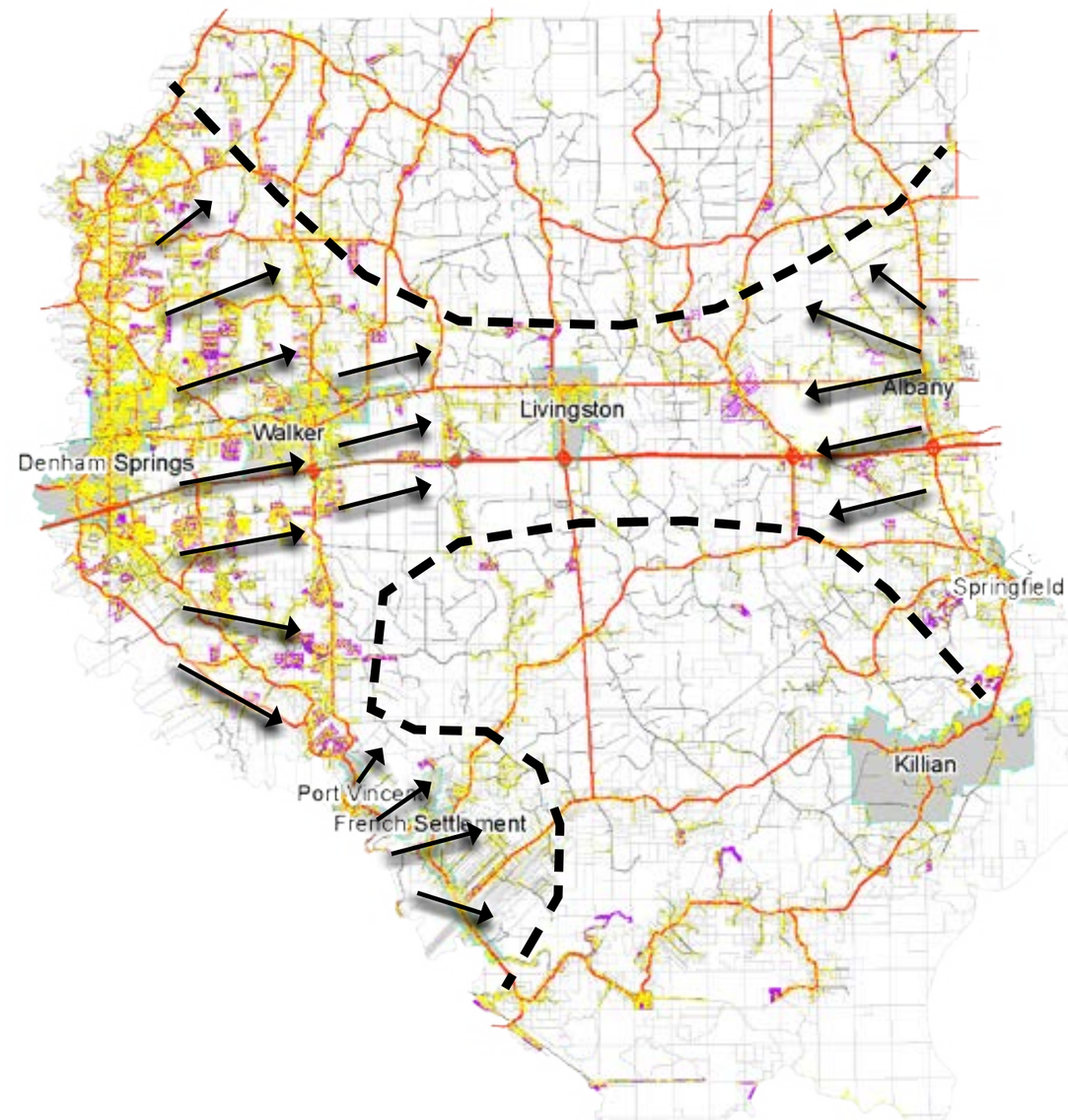


Figure 10: The "barbell" effect of growth pressure in the Parish

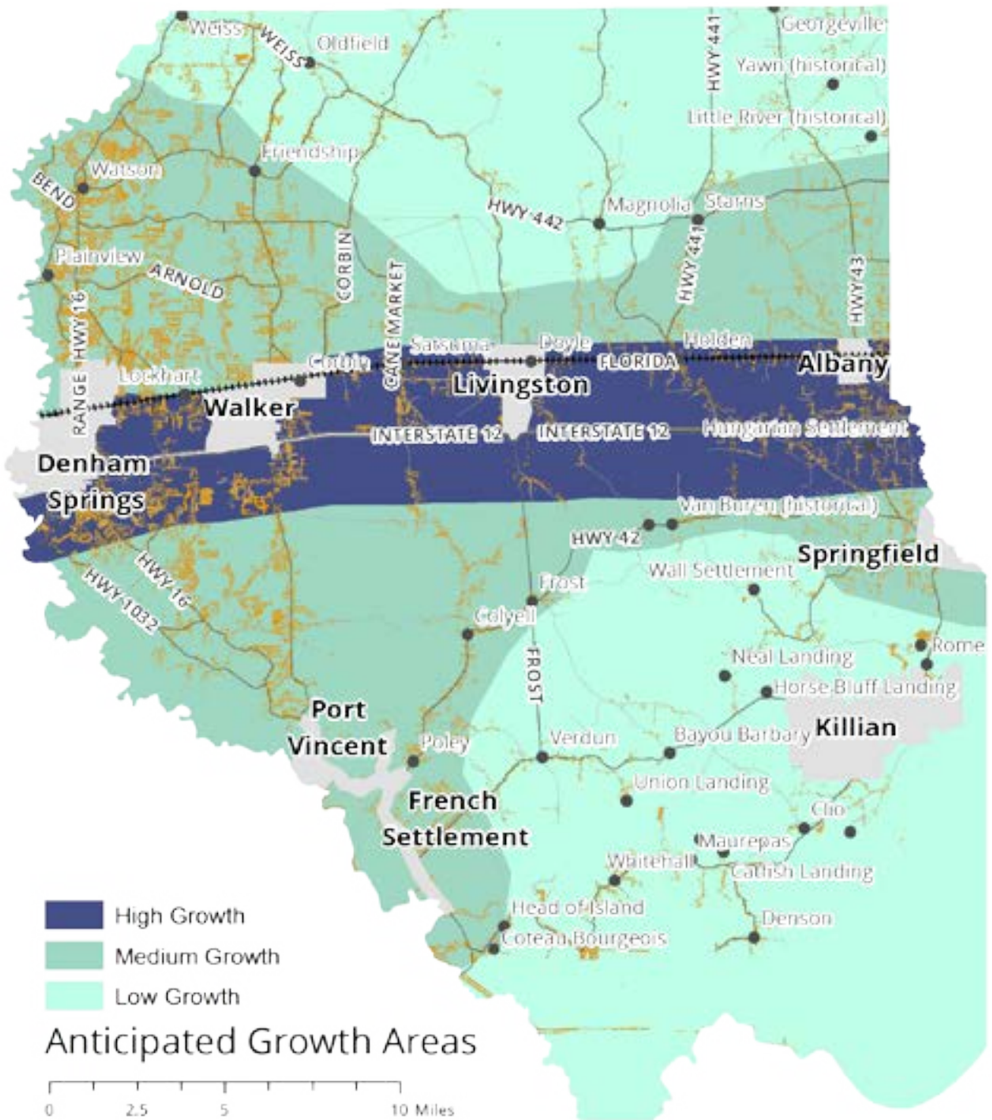


Figure 11: Anticipated growth areas

The Parish Today

A snapshot of the Parish Today (it's economy, quality of life, barriers to growth, development trends, and demography) helps illustrate how the Parish is preforming and identify opportunities for growth and development.

Our economy

Today's Parish is changing. Historically, residents lived and worked in the Parish. Today, however approximately 80 percent of Parish residents work in Baton Rouge. Livingston Parish has become a "bedroom community", it has more residences ("bedrooms") than jobs.

Table 3: Employment type, (Source: 2010 U.S. Census)

	2010	Change	Ave. Wage
Total Private	74.2%		$33,046
- Services	56.7%	67.9%	$28,538
- Trade, Transport, Utilities	21.8%		$26,430
- Information	2.0%		$91,871
- Financial Activities	3.9%		$39,406
- Professional and Business	6.1%		$42,905
- Education and Health	8.6%		$27,046
- Leisure and Hospitality	12.0%		$12,585
- Other Services	2.1%		$28,084
- Non-Services	17.5%	18.5%	$47,659
- Natural Resources/ Mining	1.0%		$40,307
- Construction	8.5%		$49,385
- Manufacturing (incl. forest production)	8.0%		$46,795
Government	25.8%	35.1%	$33,208

All employment data are reported by place of work.

Employment

Which employment types are responsible for most jobs and which are growing or declining helps indicate the Parish's relative economic strength. Although all employment types are increasing, the service sector is growing the fastest (see Table 3).

LEDC

The **Livingston Economic Development Council** (LEDC) is the primary economic development organization for the Parish and its municipalities. LEDC is responsible for marketing, business attraction and retention of existing industries. It provides businesses with information on available tax incentives and credits.

LEDC Goals:

Goals from the LEDC 2010 Master Plan (particularly relevant to the Parish Comprehensive Master Plan):

Goal #1: Growth and development throughout Livingston Parish is guided by comprehensive planning, zoning, and building codes that deliver an efficient and predictable development process.

Goal #2: Infrastructure throughout Livingston Parish, including drainage, highways, arterial streets, and interstate interchanges meets the needs of the community's residents without congestion and with ample capacity.

From interviews with local industry leader, in order to attract good industrial development communities must have:

1) a functioning transportation network;

2) a desirable workforce;

3) utilities; and

4) land use predictability.

Industry in the Parish consists largely of wood products, agriculture, construction, and a small but growing manufacturing sector (metal fabricators and related industries). Livingston Parish does not have a substantial portion of the regions heavy industry, Ascension and East Baton Rouge have most of it. With their access to the Mississippi River, interstates, rail, and existing heavy industry clusters they are likely to continue to retain the bulk of the region's heavy industry.

Still Livingston Parish is actively pursuing industrial development. The 200-acre Livingston Industrial Park is located on U.S. Highway 190. Approximately 120 acres of the park have been developed. The site has sewer, water, electricity, highway access, and signage. The 96-acre Holden Industrial Park is currently being prepared for development. Recent residential subdivisions adjacent to both sites make them less attractive to heavy industry.

Several companies have recently relocated to or expanded operations within the Parish, including: Bass Pro, Sam's Club, Albertsons, Walmart, and Ferrara Fire Apparatus. Stine Lumber, LeBlanc's Grocery, O'Reilly Auto Parts and Walgreens all recently located in Walker and Walmart purchased land in Holden for a fourth location. The planned development of Juban Crossing, a major mixed-use development located on Interstate 12 between Denham Springs and Walker, is expected to eventually bring more than 1 million square feet of shopping, medical and office space, and 1,100 residences. A second large development, Suma Crossing is expected to be between 12-14,000 acres. This trend is expected to continue; **as residential growth increases, additional support services and manufacturing are expected to develop.**

Bedroom communities compete with neighboring communities for retail and industry. Their path to economic success is often paved by stimulating home grown businesses, a strategy called economic gardening.

Parish finances

Notwithstanding recent growth, and the fact that Livingston Parish is an affluent Parish, the local tax base is relatively small. **Residential uses demand more services and provide less revenue than commercial uses and the Parish's housing/jobs balance weighs heavily towards housing.**

As people often shop where they work, when people work outside of the Parish retail dollars "leak" to neighboring communities. Leakage hinders the local tax base and in turn reduces funds to pay for infrastructure and services that help stimulate economic growth.

Livingston Parish's tax base per capita is about 55 percent of the state's average and much lower than the local tax base per capita in the neighboring parishes of Ascension, East Baton Rouge, and St. Tammany (see Figure 14 on the following page).

Approximately 65 percent of public expenditures in Livingston Parish are financed by sales tax (the school board receives over 70 percent of its local financing from sales tax). Public expenditures are dependent on consumer confidence.

The Parish's weak tax base threatens the provision of services and infrastructure. As more shopping and employment are expected throughout the Parish the tax base should continue to strengthen. **Thus, the most effective economic development strategy is to implement CMP strategies that make the Parish more attractive for commercial and industrial development.**

Figure 12: Bass Pro is just one example of Livingston Parish's growing economy

Livingston Parish Employment

There are over 2,000 employment establishments.

Major employers include:

- CB&I (pipes and fittings fabrication)
- Care, Inc. (health practitioners' offices)
- Ferrara Fire Apparatus (motor vehicles)
- Weyerhaeuser (milling)
- Deltak Manufacturing (fabrication)
- Walmart (retail store)
- Counseling and Advice for Retired and Elderly (individual/family services)
- Whiteny Bank (finance)
- Dillard's (retail store)
- Neill Corporation (service establishment equipment)
- Bass Pro, Inc. (retail store)
- North Oaks (medical)
- Our Lady of the Lakes (medical)

In 2009, the top three employment service sectors were:

- 3,741 jobs – retail trade
- 2,149 jobs – accommodations & food services
- 1,608 jobs -- health care and social assistance

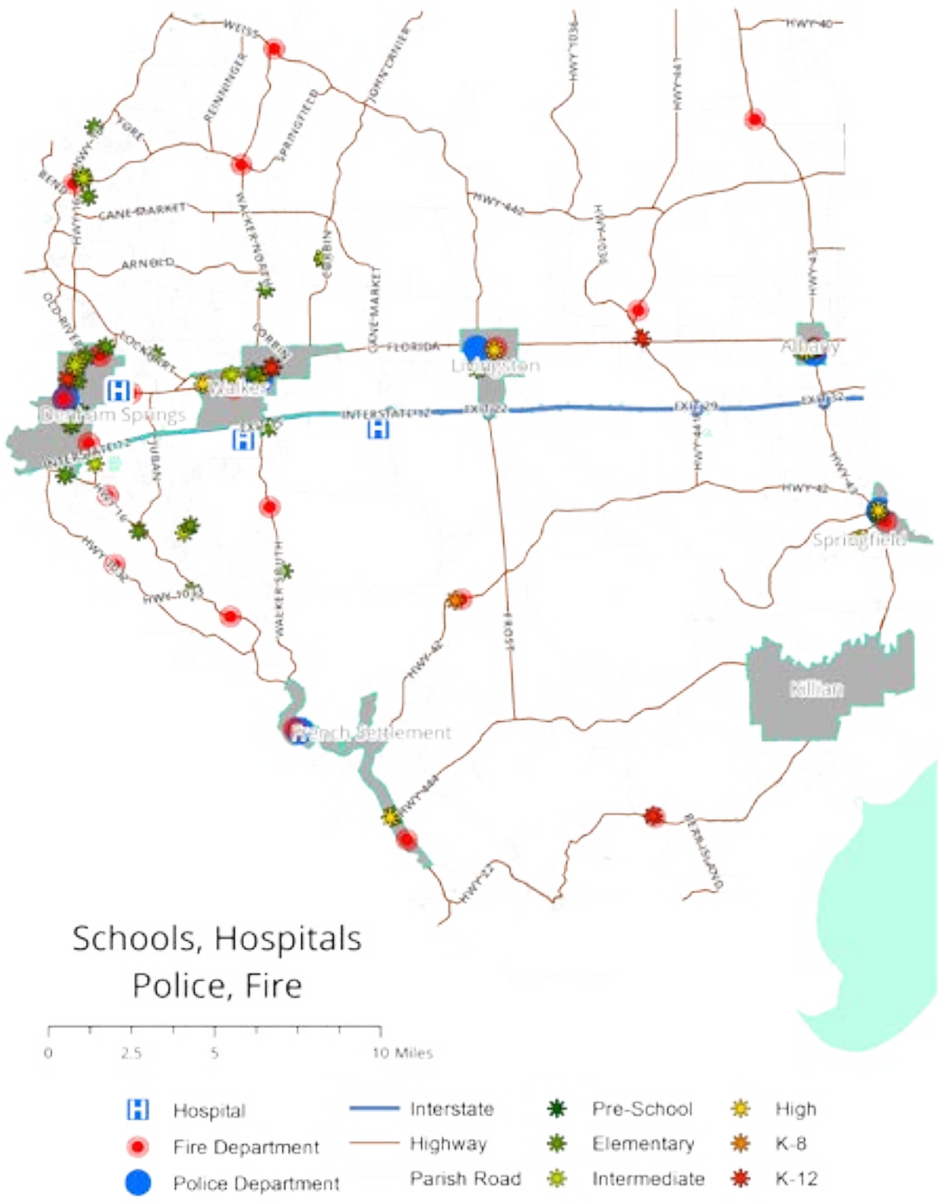


Figure 13: Schools, hospitals, police, fire
Source Livingston Parish School District

Quality of life

Quality of life (QOL) is a measure of the general well-being of individuals and a community. Several factors impact QOL, some of which are affected by growth and development. In bedroom communities QOL is often associated with access to competitive schools, state-of-the-art health care facilities, and premium recreation opportunities.

QOL is important to the local economy as it helps attract and maintain a desirable workforce, hence increases an area's ability to attract major employers. For example, competitive primary schools attractive young families. QOL can also attract retirees, state-of-the-art health services make the a community more attractive to the elderly who often want to locate in close proximity to good health care.

Education and research

Residents of Livingston Parish have convenient access to three institutes of higher education. The Southeastern University of Louisiana is located in Hammond. Louisiana State University is located in Baton Rouge. The Livingston Parish Literacy and Technology Center is located in Walker. LEDC is also pursuing a local community and technical college campus and several community colleges are within driving distance.

The Livingston Parish school district consistently scores among the top 10 in the state. It has competitive primary schools with favorable regional ratings.

Livingston Parish is also home to one of two installations of the gravitational wave observatory (LIGO) which is a facility dedicated to the detection of cosmic gravitational waves and the harnessing of these waves for scientific research.

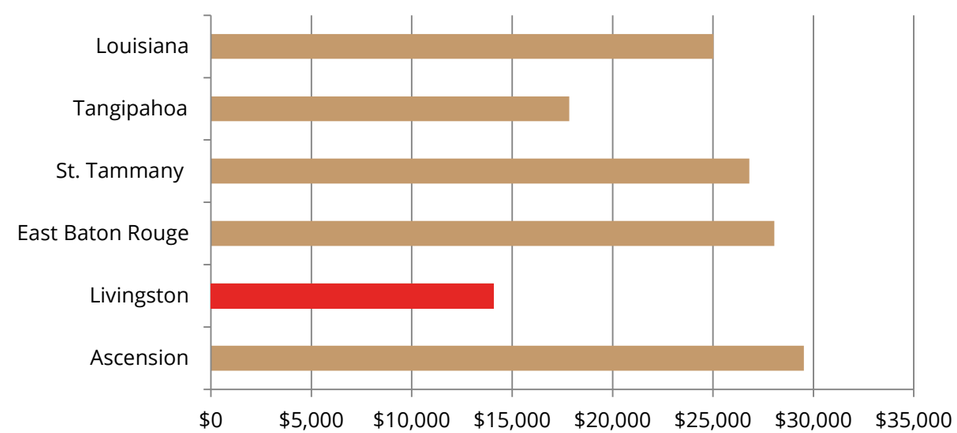


Figure 14: Local tax base per capita - Livingston compared to surrounding parishes
Source: Livingston Parish Economic Development Master Plan 2010

Health care

Livingston Parish's health care industry doubled in size between 2000 and 2010. Today, Livingston Parish has three hospitals: Long Term Acute Care, Our Lady of the Lake Regional Medical Center, and North Oaks Medical Center. There are also several clinics and health care facilities throughout the Parish.

Recreation and tourism

With over 600 miles of natural waterways, 14 marinas, marshes, swamps, and 2 signature golf courses, the Parish, part of Louisiana's Sport's Man's Paradise, has become a popular area for outdoor boating, golfing, birding, hunting, and fishing.

Tickfaw State Park offers camping, a water playground, cabins, walking trails, and boat rentals. The local economic impact of that state park alone is estimated at approximately $1,160,000 per year.

In 2012, the State's Coastal Forest Conservation Initiative added approximately 30,000 acres to the Maurepas Swamp Wildlife Management Area, preserving the largest coastal forest tract in the southern part of the Mississippi Valley. A small portion of that land falls in Livingston Parish. Parish residents enjoy just over 100,000 acres of public outdoor recreation within driving distance.

The Parish has amenities for a variety of other interests—the French Settlement Museum (a Creole House Museum), the Denham Springs Antique District, the Arpádhon Hungarian Settlement and the Carter Plantation to name a few. There are 13 buildings on the national historic register.

There is no federal land within the Parish. The largest parcel of public land is the Tickfaw State Park. The Parish owns 125 acres adjacent to Lake Maurepas.

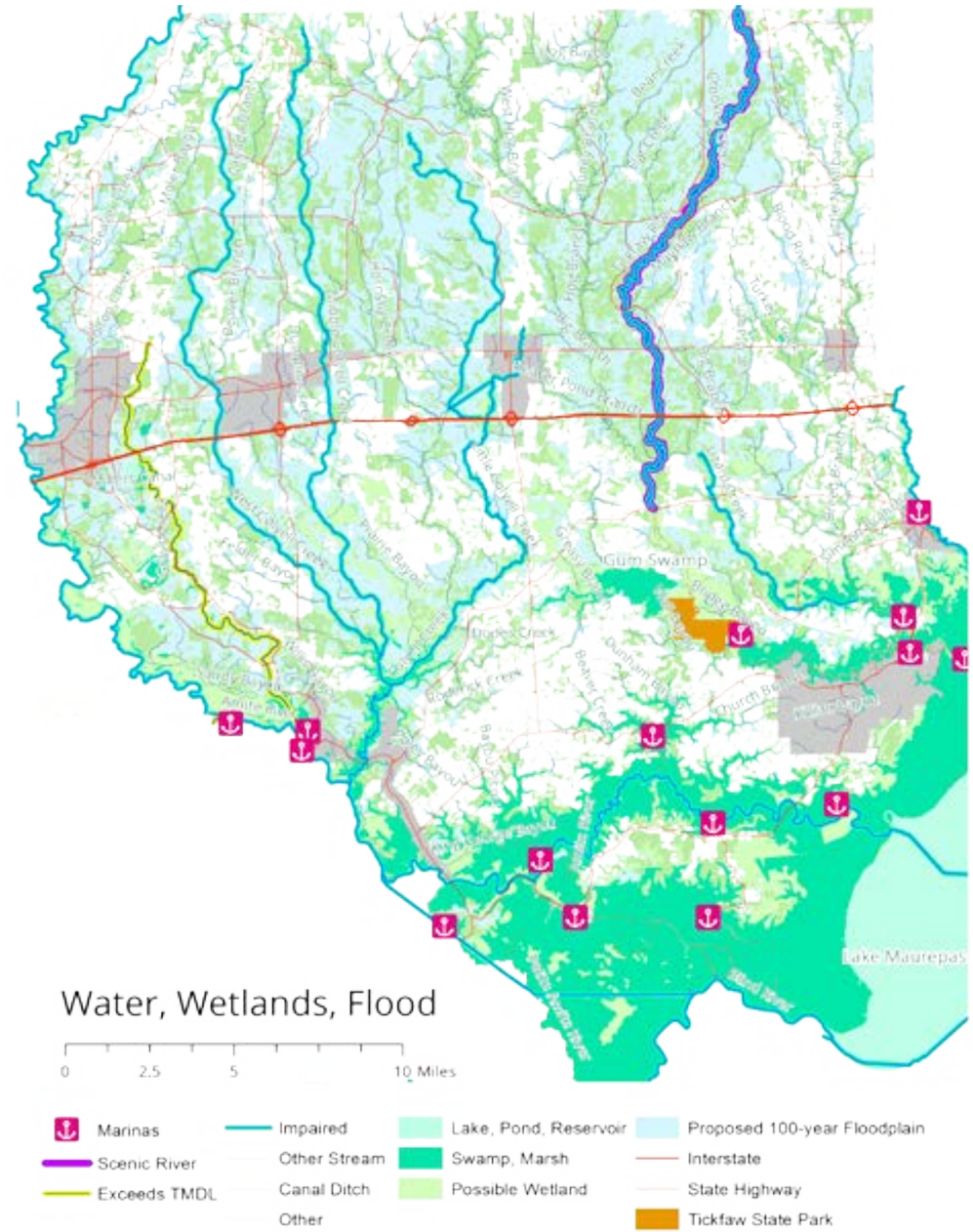


Figure 15: Water, wetlands, and flooding

Figure 16: Land cover
Source: United States Geological Service, 2006

Development barriers and recent development trends

Wetlands, flooding, and waterways

Over half of the unincorporated Parish is considered to be within a 100-year floodplain (see Figure 15). The Federal Emergency Management Agency (FEMA) has recently updated the floodplain maps of the Parish and changed the designated floodplains slightly in a number of areas.

Several waterways are impaired and one (Gray's Creek) is over the Total Maximum Daily Load (TMDL) of dissolved solids. The Louisiana Department of Environmental Quality (DEQ) can prohibit development in areas that are over TMDL and recently did so in Gray's Creek. Since then, a new Denham Springs wastewater treatment plant has improving water quality in the impacted waterways, the DEQ is permitting development once again.

Table 3: Land Cover

Type	Sq. Miles	%
Woody Wetland	284	40.45%
Evergreen Forest	126	17.98%
Shrub/Scrub	91	12.88%
Open water	56	8.04%
Developed, Open Space	36	5.13%
Pasture/Hay	34	4.90%
Grassland/Herbaceous	27	3.89%
Developed, Low Intensity	21	2.95%
Emergent Herbaceous Wetland	10	1.46%
Cultivated Crop	9	1.25%
Developed, Medium Intensity	4	0.61%
Barren Land	2	0.34%
Developed, High Intensity	1	0.08%
Deciduous Forest	0	0.02%
Mixed Forest	0	0.02%

Occurring throughout the Parish, the majority of wetlands are located in the lowlands in the south part of the Parish. The national wetland inventory identifies wetlands throughout the Parish, over have of the Parish is considered wetland.

The changing character of the Parish landscape

The Parish is 702 square miles (449,845 acres) and is approximately 32 miles long by 30 miles wide.

Land cover is generally related to elevation, drainage, and proximity to development. The northern Parish, at approximately 50 feet above sea level, consists of rolling terrain covered by pine and hardwood forests. The southern end consists of cypress forests and marshes that border on Lake Maurepas and the Amite, the Tickfaw, and Blind Rivers (see Table 3 and Figure 16).

The 2006 urbanized area of the Parish was approximately 46 square miles; in 2010 it was 73 square miles. That translates to a conversion of 6.75 square miles of land per year (see Figure 17). Accompanying urban area consumption is an increase in impervious surfaces (i.e. roads and paving that will not allow water infiltration). In an area where the biggest threat to life and property is flooding from rainfall, increasing impervious surfaces can greatly increase flooding risk if not offset by increased detention areas.

Subdivision Development

Available data, although incomplete, suggests that over time:

1. the size of subdivisions has continued to vary.
2. the number of parcels in subdivisions has been increasing.
3. the parcels within those subdivisions have been getting smaller.

The magnitude of the conversion of raw land to large subdivisions in the western parish can be seen in air photos (see Figure 18).

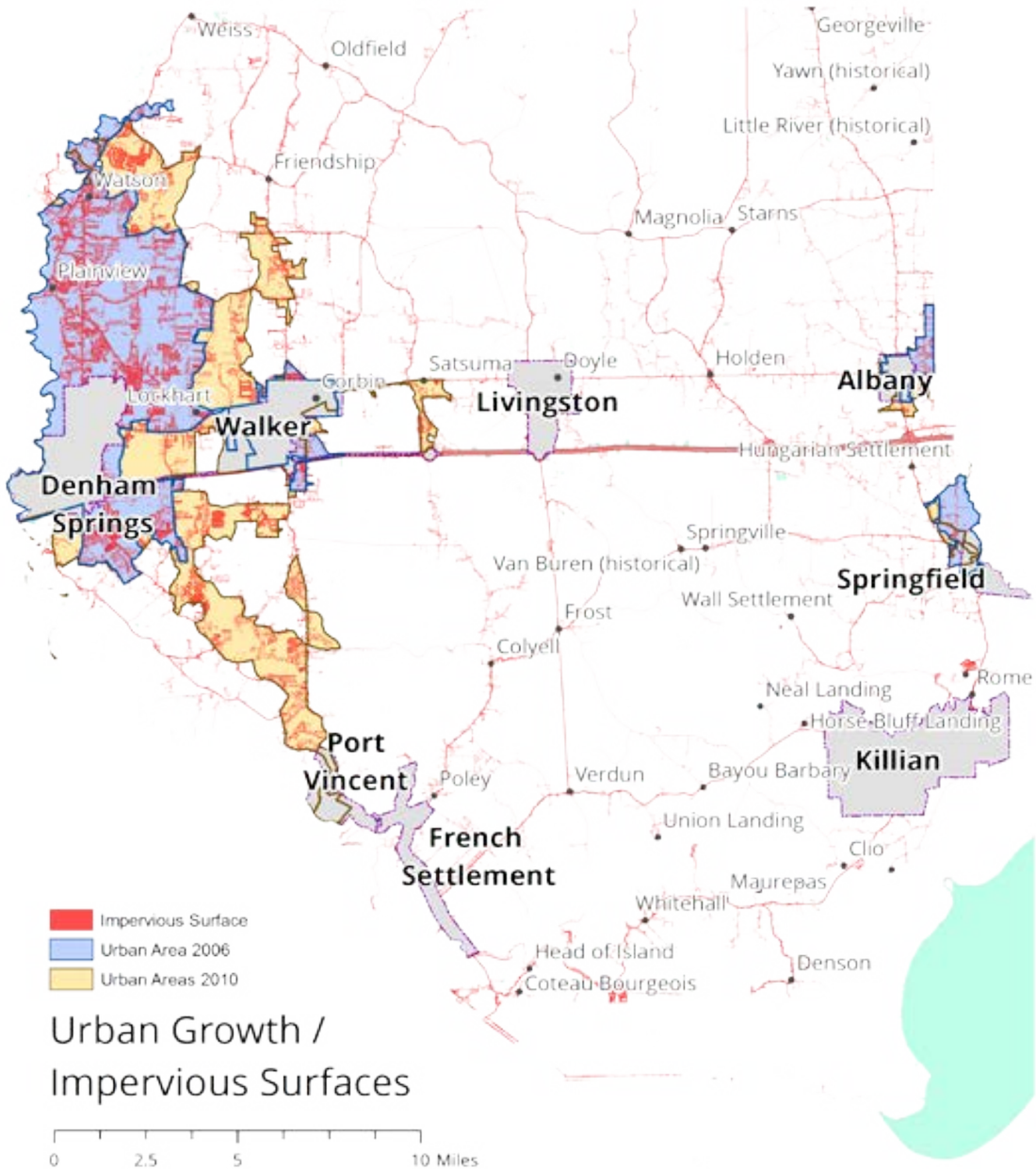


Figure 17: Urban consumption and impervious surfaces
Source: United States Geological Survey

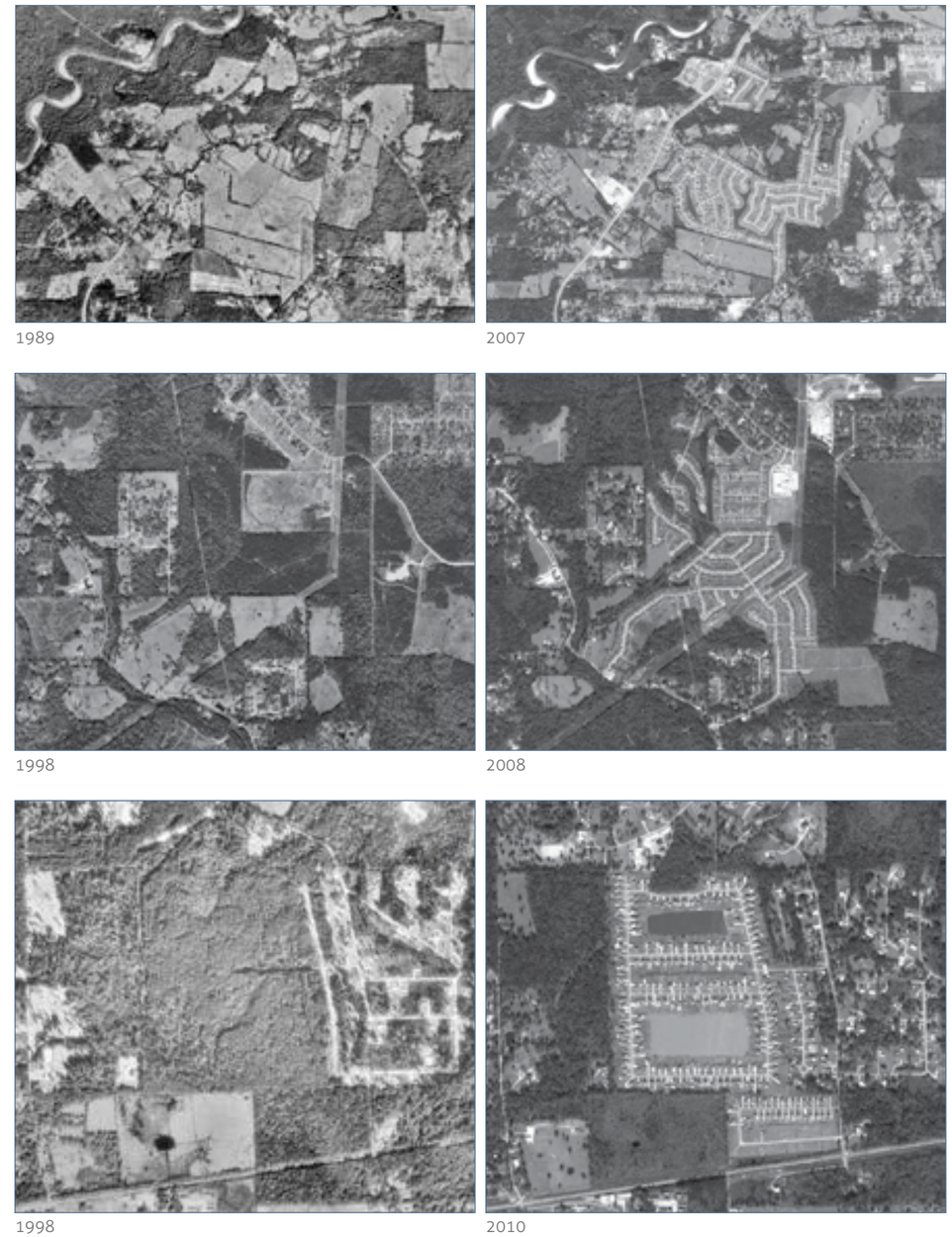


Figure 18: Typical subdivision land conversion in 3 areas of the western Parish

Housing characteristics

From 2000 to today, the Parish housing stock grew from approximately 36,000 to 50,000 units, an increase of 14,000 units or 28 percent.

The predominant housing type in the Parish is single-family homes, followed by mobile homes, with a small percent of multifamily (town home, apartments, and condominiums) dwellings.

From 2000 to today, the percentage of single-family homes increased slightly (from 64 to 65 percent). Mobile homes decreased slightly (from 32 to 29 percent) and multifamily dwellings increased slightly (from 4 to 6 percent) (see Figure 19). This trend suggests that even though the relative amount of multifamily housing will grow over the next two decades, in general, **single-family homes will continue to be the most common form of housing in the unincorporated Parish.**

While housing prices in the Parish are generally below the national average, they have been rising consistently. This trend remained during the recent national downturn in housing prices. In 2000, the average single-family home value was $96,100 (vs. the $119,000 national average) and increased to $130,900 by 2010. Even with this increase, over all housing prices are affordable to the majority of the population.

Most of the housing stock is relatively new and healthy.

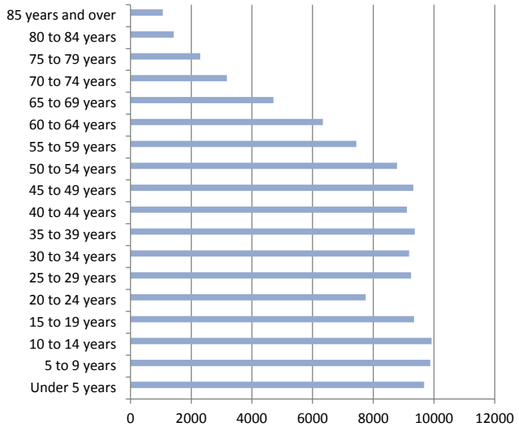


Figure 20: Current population by age

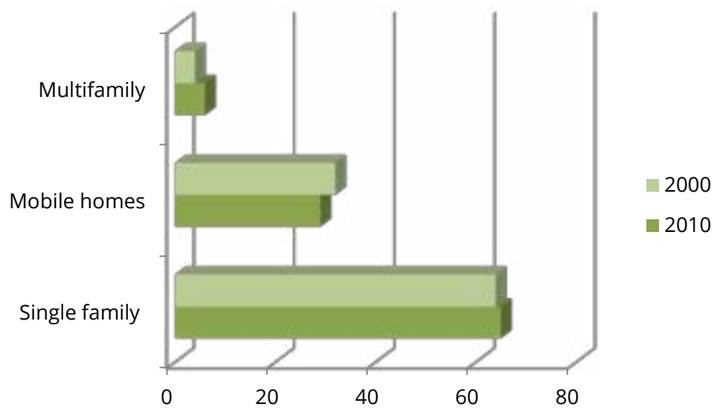


Figure 19: Percent housing by type (2000-2010)
Source: 2000 Census; 2010 Census; 2009 American Community Survey.

Table 4: Demographic change in Livingston Parish

	2000		2010		Difference
Total Population	92,000		128,000		+40%*
	Percent	Total	Percent	Total	
Over 18 years	70.50%	64,860	72.5%	92,800	2.00%
Over 65	12.50%	11,500	10%	12,800	-2.50%
Avg. household size	2.8	32,857	2.76	46,377	-0.04
Median household income	38,887	n/a	53,277	n/a	37%
Families below poverty level	9.10%	8,372	8.80%	11,264	-0.30%
Household income <35,000	44.40%	40,848	33.8%	43,264	-11%
Median age	34	n/a	35.8	n/a	1.8

** Highest increase in the state*

Demographics

As demand for some service is influenced by demographic character (age, marital status, income, ethnicity), demographic shifts help predict future demand for services.

Demographic characteristics of the Parish are changing, very gradually. A snapshot of the Parish reveals that:

- The percentage of the population over 65 is declining slightly, though the total in that age group is increasing rapidly. The population over 65 is projected to almost double by 2030. The growing older population will have implications on housing, services, healthcare, transit, and amenities.
- The percentage of the population 18 to 64 is increasing, adding to the workforce.
- The income level of Parish residents overall is increasing, adding to the Parish-wide disposable income.
- The percentage of the population at or below poverty level is decreasing.
- The Parish is predominately white.
- There is a lack of 20 -24 year olds, indicating youth move out of the Parish.
- Both the African-American and Hispanic population is growing.

In general, Livingston Parish is a relatively affluent community compared to other regions in the state. It has fewer families living in poverty.

Approximately 20 percent of the Parish population resides in the Parish's 8 municipalities, which means 80 percent of the Parish population (living outside of those municipalities) depends on services provided by the Livingston Parish Government (see Table 5).

Table 5: Current population by ethnicity

	#	%
White	117,601	91.9%
African-American	6,505	5.1%
American Indian/Alaskan Native	526	0.4%
Asian	628	0.5%
Hawaiian/Pacific Islander	26	0.0%
Some other race	1,273	1.0%
Two or more races	1,467	1.1%
Hispanic/Latino	3,801	3.0%

Table 6: Population Distribution (Source: U.S. Census)

	#	%
Parish Total	130,251	
Rural Parish	107,102	82.23%
Albany	1,108	0.85%
Denham Springs	10,390	7.98%
French Settlement	1,135	0.87%
Killian	1,227	0.94%
Livingston	1,799	1.38%
Port Vincent	753	0.58%
Springfield	495	0.38%
Walker	6,242	4.79%

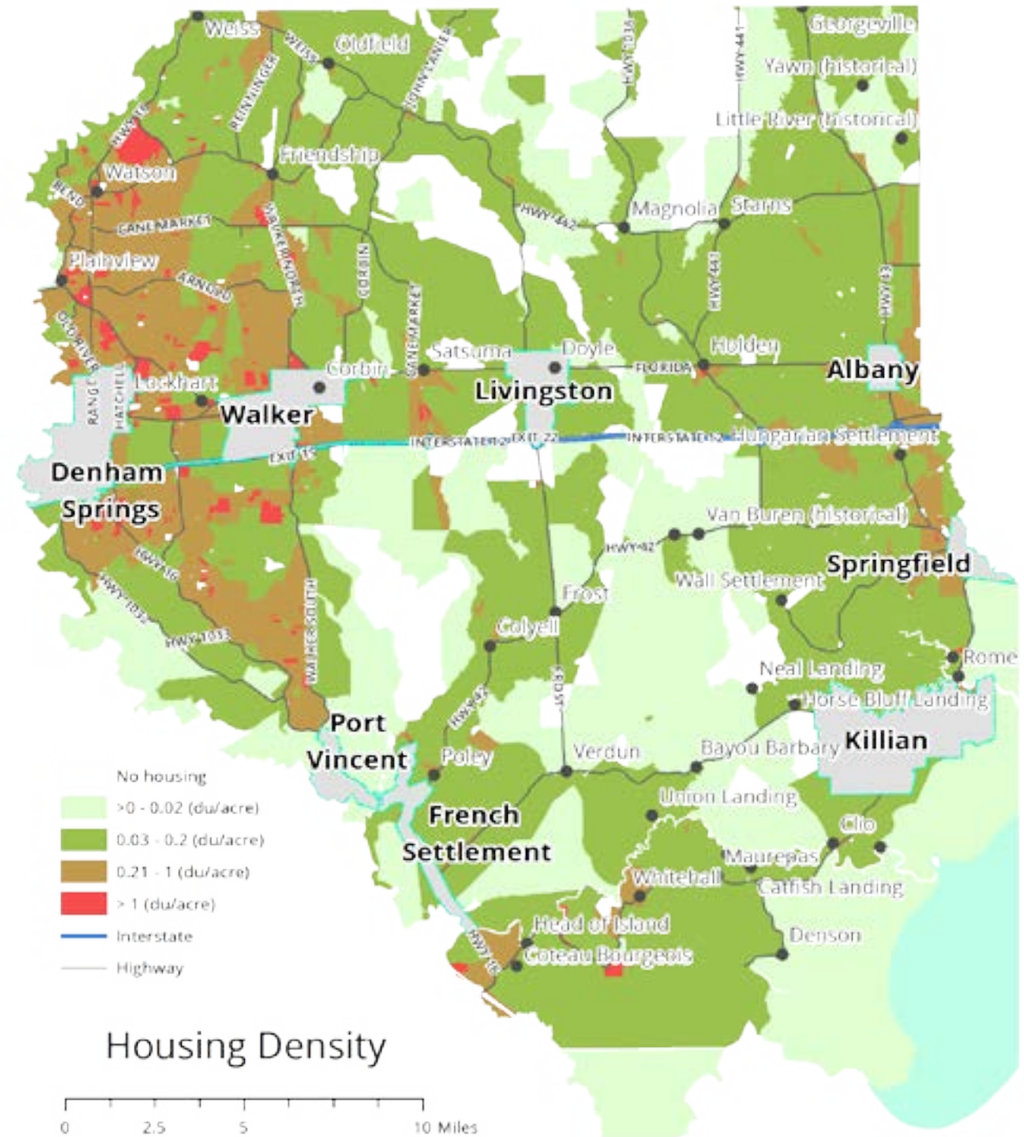


Figure 21: Housing density

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Envision Livingston 3
Land Use

Photo Courtesy of Neighbors' In Action

When viewed over a long period of time, land uses are seldom static

Photo Credit: Neighbors' In Action

Land use patterns have a direct impact on our way of life.

As development density increases, without an increase in road density or network connectivity, traffic congestion often increases. Land use patterns influence the perceived character of a community. Parishes can choose to regulate land uses with zoning, currently there is no zoning in the Parish.

The predominant residential land use pattern in the Parish is large lot single-family residences. Commercial development has primarily occurred east-west along the Interstate 12/U.S. Highway190 "economic corridor" and north-south along U.S. Highway 16 (Pete's Highway). Growth pressure in the Parish has been mainly from the west (Baton Rouge) but some growth is emanating from Hammond.

Approximately 55 percent of the Parish is vacant, not used for a specific purpose (see table 7 and Figure 22).

Table 7: Land Use by Acres/Percent		
Land Use	Square Miles	Percentage
Vacant	384	55%
Agriculture/Cropland*	194	27%
Civic/Institutional	3	<1%
Commercial	3	<1%
Industrial	5	1%
Multifamily Residential	1	<1%
Parks/Open Space	4	1%
Single-Family Residential	111	16%
**cropland includes, and is primarily, timber lands.*		

Figure 22: Existing land use Source: With no reliable database of existing land uses in the Parish, the Existing Land Use Map was approximated from aerial photo interpretation

The Land Use - Transportation Connection

There is a strong interrelationship between land use and traffic. The type and distribution of land uses significantly affects where traffic will be generated. At the same time, where roads are placed has a strong influence on where various land uses occur. For example, commercial development prefers locations on busy roadways and intersections; industrial development often prefers to locate on less trafficked roads.

Said another way, in order to know where roads and utilities will be needed, it is helpful to know where land uses are today and predict where/how they are anticipated to change in the future.

Challenges Facing the Parish that Affect Land Use

Challenge 1: Different levels of development in various areas of the Parish

Unincorporated Livingston Parish is really three parishes:

- **Western**— facing significant suburban expansion from migration from East Baton Rouge Parish.
- **Eastern**— experiencing relatively low (but increasing) growth pressures moving westward from Hammond.
- **Northern and southern**— facing little if any growth pressures.

Challenge 2: There is little predictability about future development

The Parish provides very little regulation of land use in unincorporated areas (there is no zoning for example) and until this plan was adopted, there has been no long range vision or guidance for decisions. This lack of predictability has several results:

- Significant public **controversy about individual land use decisions**, especially in the western Parish where growth pressures are greatest.
- **Discouraging quality development and employment.** According to real estate agents and the Livingston Economic Development Council, a number of significant potential businesses have been discouraged from locating in the Parish due to the lack of certainty about what might happen adjacent to their projects.
- **Inability to adequately plan for roads and infrastructure.** Development requires infrastructure. In a number of locations in the western part of the Parish, in the absence of a long-range plan, buildings have been built close to the existing roadways. This leaves no opportunity to expand roadways and provide servitudes for new utility lines without incurring the cost of removing buildings. This greatly increases the cost of construction, and the cost to all the taxpayers in the Parish (see Figures 23 and 24).

Therefore, in the growing areas of the Parish it is becoming increasingly important to anticipate where development will occur, and to know at least generally what kind of development it will be, so the Parish can anticipate infrastructure needs, attract quality investment, and avoid unnecessary controversy and land use impacts.

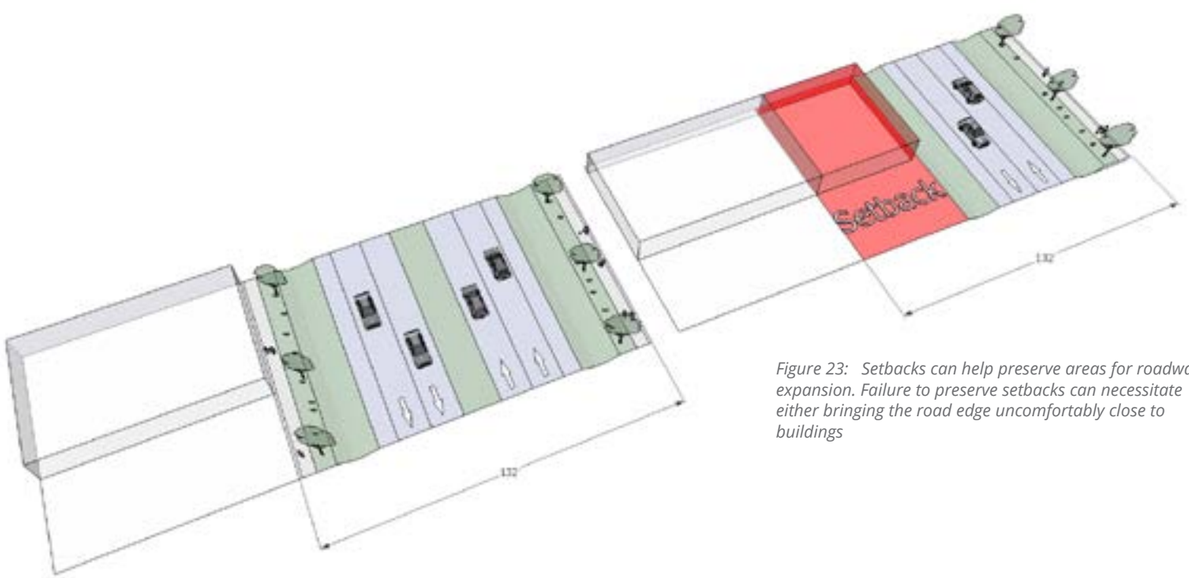


Figure 23: Setbacks can help preserve areas for roadway expansion. Failure to preserve setbacks can necessitate either bringing the road edge uncomfortably close to buildings

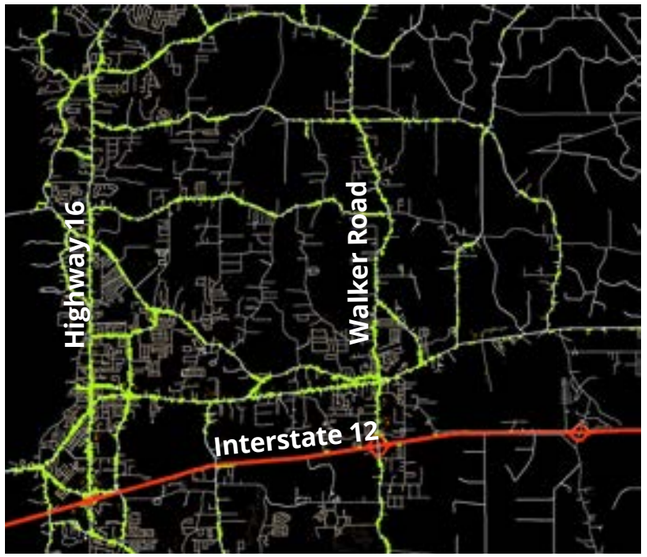


Figure 24: Widening just the Parish's major roadways would require the removal of approximately 2000 structures

Challenge 3: Land use evolves—areas subject to change

When viewed over a long period of time land uses are seldom static (except in more remote areas). In areas "in the path of development" land use change usually follows a predictable pattern: farms get divided into large lots, followed by subdivisions, and over time, some areas become communities, towns or even cities.

Generally as development occurs, land prices increase and lots sizes decrease. The speed of this transition depends on the level of demand—the number of residents desiring to locate in an area. Over the last two decades western Livingston Parish has had a high demand, and has experienced a rapid change in land use—more development, smaller lots, higher land prices.

Each land use type (or stage of development) requires different levels of infrastructure, public services and each has different associated impacts on the surrounding properties.

For example, as farmland is converted to subdivisions, farm-to-market roads that are perfectly adequate for rural areas are not suitable for the traffic levels of suburban development. They have to be repaired more often and eventually rebuilt. While many of these farm-to-market roads are State roads a significant number are the Parish's responsibility, and with a shortage of state funding, there is a concerted effort by the state to return more arterials to Parish responsibility.

The transitions from one stage of development to another can also be difficult. When new subdivisions invade a rural area, existing residents experience a dramatic change in traffic levels, character of the neighborhood, and the new residents often bring different attitudes and expectations. For example, where rural residents are often very flexible about what a neighbor does with their property, suburban residents often are more sensitive to the impact of incompatible uses on property values. Significant controversies have arisen in the Parish about proposals that introduced smaller lot sizes or even different housing types near traditional subdivisions.

Most of the transition described above occurs as farmland is divided into smaller and smaller lots. A final stage in the process, redevelopment, occurs when demand (property value) is high enough, and vacant land scarce enough, to warrant replacing buildings with higher intensity uses that will increase the value significantly.

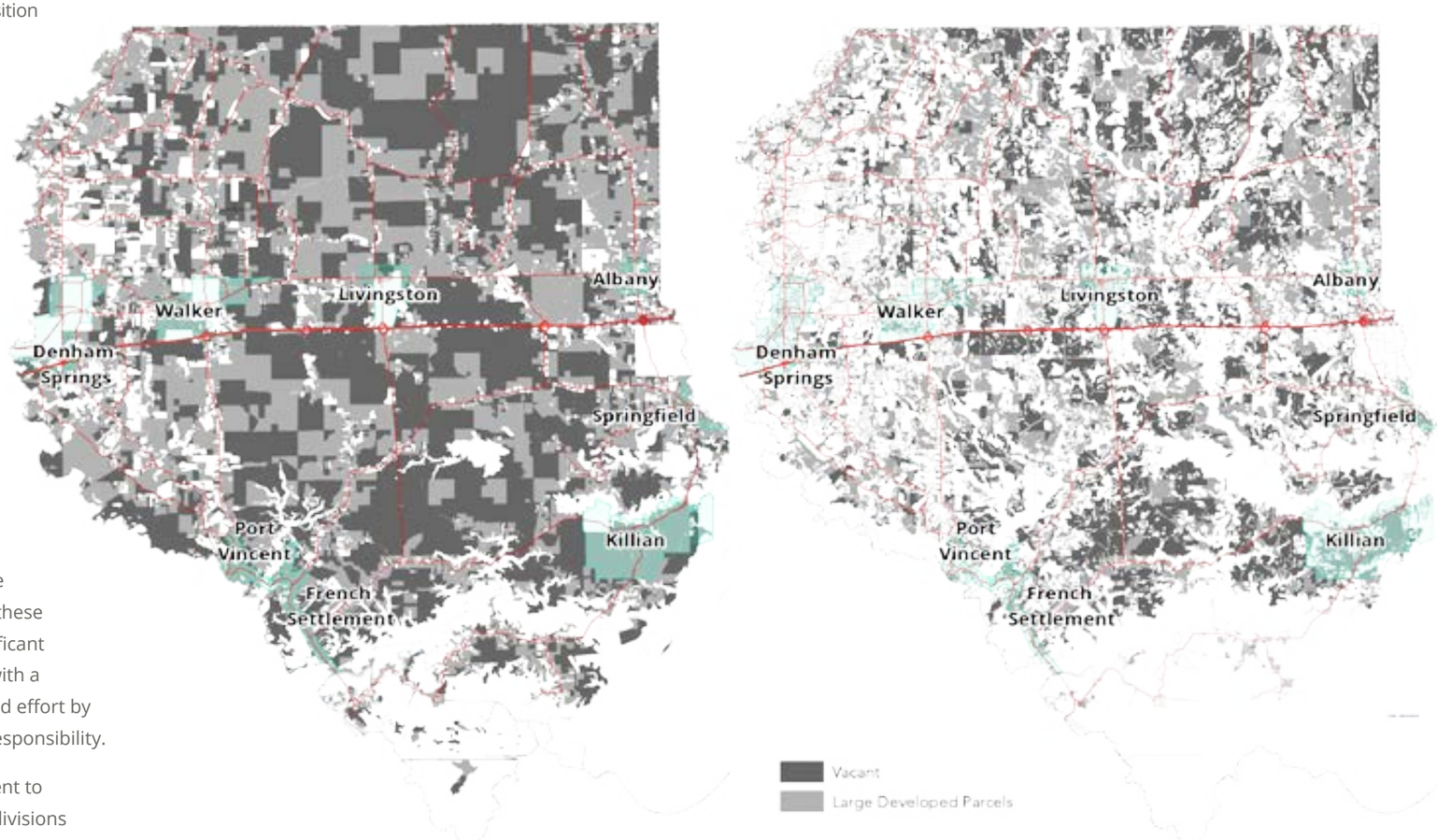


Figure 25: Lands subject to change (on the left) and developable lands subject to change (on the right, land with potential wetlands removed)

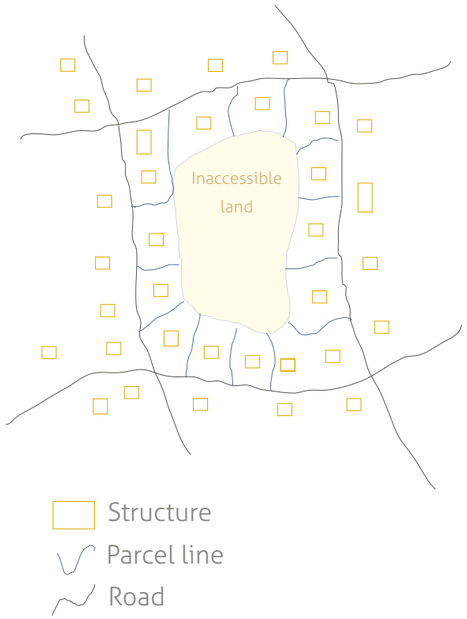


Figure 26: Typical development often reduces land accessibility

In general, redevelopment is more expensive than developing vacant land (as the demolition of existing uses can be costly). In order for parcels to redevelop, the expected value after redevelopment must be higher than the purchase price plus the cost of demolition. A simplified rule of thumb: when the cost of the land is greater than the cost of the buildings on the land, redevelopment is more likely. Even though there is a lack of reliable data in the unincorporated areas about the cost of land vs. building value, it is usually safe to assume that the potential for redevelopment is relatively low until vacant land becomes scarce and buildings age or become obsolete. Since there is a large supply of vacant land and almost half of all residential development in the Parish is less than 20 years old, redevelopment is projected to be relatively rare. That is, **existing neighborhoods are not likely to change much in the next few decades.**

Therefore, most of the change in land use (growth) in the Parish over the next two decades will be on vacant land or land that has very little development, such as large parcels with only a few buildings on them (see Figure 25 left map).

Challenge 4: Natural and man-made restrictions affect where growth can occur

Wetlands in the Parish have only been approximately mapped but they are estimated to be extensive throughout the Parish. Since wetlands are a significant obstacle to development (more expensive to develop, often subject to flooding, and protected by federal regulation), **when the projected wetland areas are subtracted from the lands subject to change, the result is a much smaller amount of land with realistic development potential** (see Figure 25 right map). Much of the potentially developable land remaining in the western part of the Parish is in scattered, relatively small parcels.

Much of the developable land is located in the interior of major roadway "blocks." Said another way, much of the easily accessible land along existing roadways is already developed, leaving primarily the interior, more difficult to access parcels for future development (see Figure 26).

In the north-central and south central parts of the Parish, the vacant land is still found in relatively larger parcels, many along existing roadways. Much of this land is outside the path of development (**the "Growth Barbell"**). The significant vacant land in the southern and southeastern sectors of the Parish also has the potential for major flooding due to hurricane-related storm surges blowing northwest from Lake Pontchartrain and Lake Maurepas.

Notwithstanding, the developable vacant land that is within the "Growth Barbell" can still accommodate more than the 2030 projected growth for the Parish.

Challenge 5: The lack of sewer service is a significant constraint to growth

Much of the unincorporated Parish is served by septic systems and package treatment systems (see Chapter 4: Wastewater). These systems are often not maintained adequately and the result has been significant pollution of the surface water of the Parish. At the existing suburban and urban level of development in the "Growth Barbell" and projected to continue, an analysis by the U.S. Army Corps of Engineers has projected that only a centralized wastewater treatment system with sophisticated equipment will be able to treat effluent sufficient to restore adequate levels of water quality.

If new development continues to occur without centralized sewer, there are growing concerns that, in areas without centralized sewer, the state may eventually have to restrict development—of both subdivisions and the roads to serve them.

This means that most of the significant future development in the Parish will go to areas where:

- Existing central sewer service can be extended.
- New regional central sewer service can be created.

Challenge 6: Road maintenance funding is not keeping up with needs

The Parish has over 800 miles of roads under its jurisdiction. The cost of maintaining those roads over the long term significantly exceeds the Parish's current budgeting for road maintenance. Thus, in addition to increasing the Parish budget for road maintenance, the Parish needs to be extremely selective about new roads it accepts into the Parish road maintenance system.

The decision about which roads to accept will significantly impact where development will occur. For example, if the Parish accepts new roads in a random fashion, it may be committing to maintain low-use roads, diverting funds needed for major roads and roads that will accomplish other parish goals, such as economic development (see Chapter 5: Transportation).

Challenge 7: The type of growth will impact the need for administrative services

Originally, parish governments were established to serve primarily agricultural and rural areas. The simple structure parish government reflects this role. When more intense development occurs, requiring higher services and administration, it was anticipated that those areas would incorporate and adopt municipal government structure.

However, a number of parishes, including Livingston, have allowed more intense growth to occur, requiring higher services and administration outside of municipal incorporations. When this occurs, a more extensive parish administration is eventually required, to respond to the increased levels of service required by more urban conditions (animal control, code enforcement, more extensive mapping and record keeping, higher levels of policing, etc.). The structure of East Baton Rouge Parish is a good example.

All of these practical realities need to be considered as Livingston Parish makes decisions about the extent of suburban and urban growth it will accommodate.

Challenge 8: Conflicting standards discourage annexation of municipal growth areas

A few incorporated municipalities in Livingston Parish have formally identified "growth areas" into which they would like to eventually expand (see Figure 27). Other communities only have informal concepts about how they would like to grow.

The fact that the area into which a city may want to grow is under Parish jurisdiction, presents several challenges, as identified in the recent Walker Comprehensive Plan (paraphrased below):

The Parish's development standards are generally lower than those of the cities [1]. This discourages a city from annexing because the city will be forced to upgrade the public infrastructure to meet their standards.

Since the Parish doesn't have zoning, the Parish may allow development in the growth area that does not meet city expectations (compatible adjacent land uses, required setbacks, parking requirements, etc.)– this may also discourage annexation.

It is in the interest of all Parish residents that cities are able to grow. Municipal organizations and taxes are best able to serve the more intensive types of development (higher density residential, commercial, and industrial) that are important to the overall growth and quality of life of the Parish. By making annexation difficult, the Parish reduces the potential for orderly growth of cities. **This suggests that the Parish and cities need to put in place special arrangements for decision-making in the municipal growth areas.**

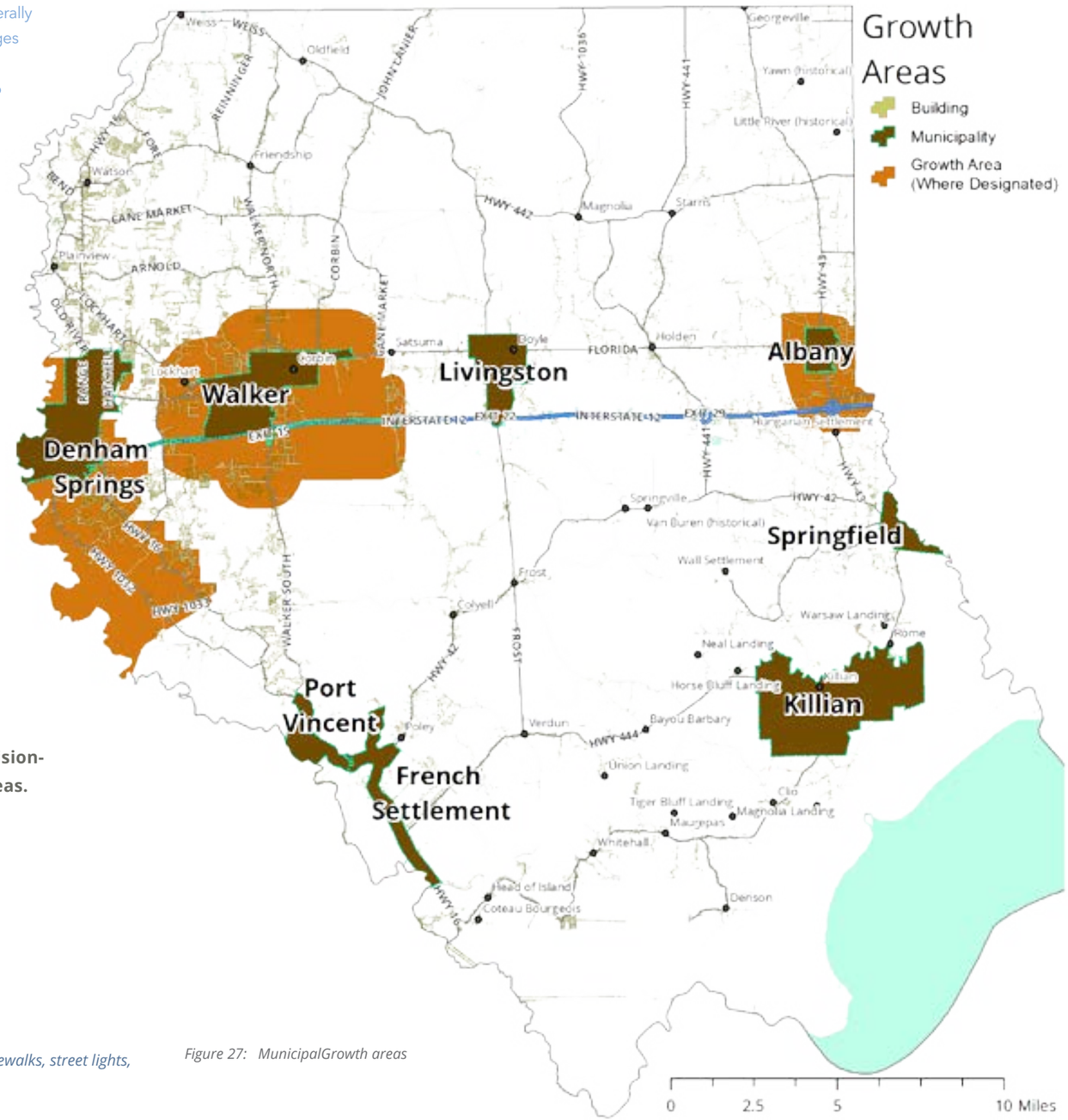


Figure 27: MunicipalGrowth areas

1 *For example, the Parish doesn't require sidewalks, street lights, parks, etc.*

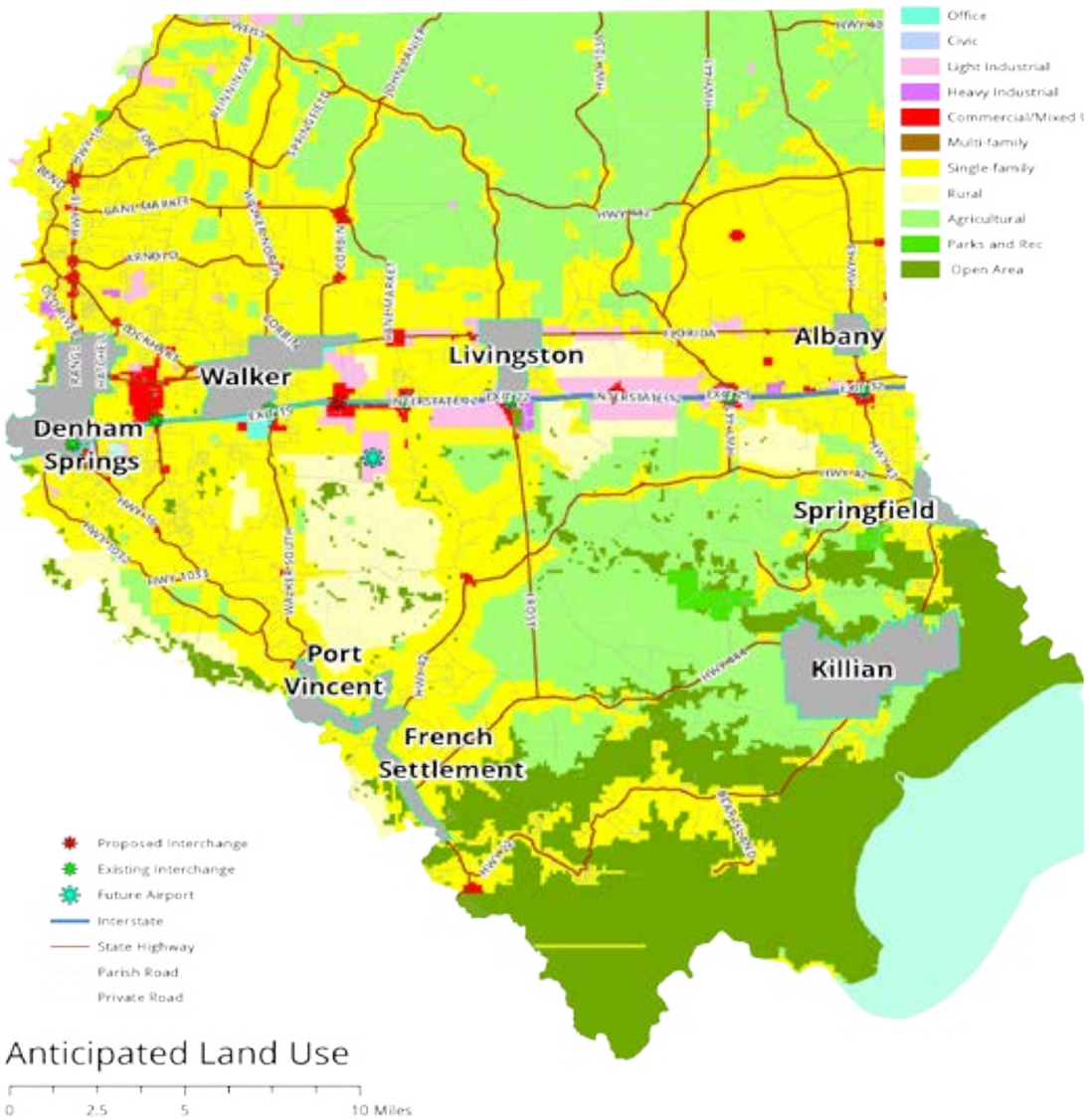


Figure 28: Anticipated land use
See end of plan for full page version of image

Anticipated future land uses in the unincorporated Parish

The Anticipated Land Use Map (see Figure 28) builds on existing land uses and attempts to project, very generally, where and how future land uses are likely to evolve over time (generally following principles of compatible uses).

The types of uses, and some of the considerations in projecting how they will evolve, are described below.

Residential Uses

The predominant house type in Livingston Parish is single-family—one home on one lot. Although there are subdivisions of large lots (over 1-acre lots) scattered in the Parish, many of the subdivisions in the western part of the Parish have ¼ to ½ acre lots, with an overall density of 3 homes (dwelling units, or "dus") per acre.

National trends also indicate that "the residential market" is moving toward smaller lots and homes. This is due to several factors:

- An aging population less and less interested in maintaining large yards.
- An abundance of large homes and yards on the market.
- Upcoming buyers are a younger generation, many of whom desire greater mobility, and a more urban lifestyle.
- With increasing gas prices, the total cost of housing and transportation is consuming upwards to 50 percent of a household's income, forcing even those who desire a low density settings to consider commuting time and cost as important factors.

At the same time, there are large areas in the Parish that are, and will remain rural for the foreseeable future.

Public Input about residential land uses

Respondents to survey questions posed in public meetings and on-line indicated:

- A majority support encouraging, and allowing, **more affordable housing choices** in Livingston Parish.
- **Regarding the "Quality" of recent growth** in the Parish, **44 percent felt it was poor/very poor**, and 21 percent "about right".
- **What is "rural"?** 90 percent felt that "rural character" meant lots over 1 acre in size, 70 percent over 2 acres in size, and 55 percent over 5 acres.
- **Best way to maintain rural character?** 13 percent supported some form of clustering (keeping some property undeveloped), 25 percent felt that only allowing large lots would be best way, and 38 percent felt that some combination of clustering and large lots would best preserve rural character.
- The most appropriate locations for subdivisions are in or **near existing communities**.

According to the Livingston Economic Development Council (LEDC), areas where significant growth is expected **the lack of predictability about how much and what kind of development will occur is a deterrent to attracting quality development and can significantly lower property values**.

Commercial uses

The importance of attracting new commercial uses to reduce sales tax "leakage".

Today, because many of the residents of the Parish commute to work in East Baton Rouge Parish, Livingston Parish is largely a "bedroom community" (defined as where people live, but work elsewhere). Since commuters tend to shop where they work, **there is a significant "leakage" of sales to Baton Rouge**, where most work. Why does this matter? This leakage of sales is also a leakage of sales taxes—which are a major source of revenue for local governments to provide services to Parish residents.

An axiom of development is that "commercial follows rooftops." This means that commercial development will not occur until there are an adequate number of homes nearby to support the stores (for example, it requires approximately 5-7 thousand homes within a 2-mile radius to support a grocery store).

Notwithstanding that residential growth is occurring in the Parish, there are some indications that commercial growth not increasing proportionately to homes and employment. According to input from real-estate and business stakeholder groups, there are **four deterrents to more commercial development** in Livingston Parish:

- **Lack of population base**—this will be gradually remedied over time as the Parish grows (see Growth and Demographics).
- **Lack of sewer**—businesses cannot afford to be perceived as polluting the environment, or to be subject to potential use or expansion restrictions by Louisiana Department of Environmental Quality.
- **Lack of predictable land use patterns**—input from business-related stakeholders indicated that businesses are leery of making major investments when there is uncertainty about whether adjacent development will be compatible and of consistent quality.
- **Lack of financing tools (incentives)**—the absence of tax increment financing and other fiscal tools puts the Parish at a competitive disadvantage nationally.

Location trends for commercial uses

The majority of commercial development in the Parish is located in the incorporated communities (Denham Springs, Walker, Livingston, Springfield, Albany, and French Settlement). The development of the Bass Pro Shops in Denham Springs is the first, large regional commercial development in the Parish.

Significant commercial development has also occurred in the unincorporated such as Watson, an urbanizing area north of Denham Springs on State Highway16 (Range Avenue).

Some commercial development is occurring along U.S. Highway 190, between the incorporated municipalities.

The LEDC has analyzed the factors that influence where businesses located and identified the optimum locations for future commercial growth to be along the Interstate 12 corridor. The proposed Juban Crossing shopping center is a good example of growth occurring in that corridor. It is located near Interstate 12 in the unincorporated Parish between Denham Springs and Walker. When it develops, it will be the second largest commercial development in the Parish and will be a significant boost to local shopping opportunities and Parish sales tax receipts.

There are some indications that the traffic congestion that makes it more and more difficult to travel to Baton Rouge during peak hours is also causing some shoppers to go eastward to Hammond. This will eventually cause commercial development to gradually grow in Albany and Springfield and gradually spread westward following the Interstate 12 corridor. **It is in the interest of all Parish residents to enable/encourage commercial development in the Interstate 12 corridor**—either through annexation into existing communities, or through appropriate land use management that will assure the proper setting for businesses (see Figure 30).

Public Input about commercial land uses

About 70 percent of respondents felt that commercial uses should be located near similar uses or in designated locations (as opposed to allowing it to happen anywhere).

Figure 29: Typical Livingston Parish commercial

Industrial uses

Industrial uses in Livingston Parish are primarily associated with:

- Agriculture/timber/construction,
- Wholesale retail sales, and
- Manufacturing (metal fabrication, fire equipment, construction materials, lumber & wood products and miscellaneous manufacturing).

With approximately 60 percent of the land cover being forest, the Parish has ample economic opportunity for continued lumber-related businesses such as paper processing and furniture manufacturing. Weyerhaeuser Industries, located in Holden, is the Parish's largest lumber company and the largest land holder in the Parish.

The Parish has a relatively small industrial base (e.g. compared to the significant energy and chemical industrial base of neighboring East Baton Rouge and Ascension Parishes). Two new metal fabrication plants located in the Parish in recent years suggesting possible growth in that sector.

The businesses in the Parish that involve manufacturing and fabrication include:

- Aqua Marine (boat dealer) in Denham Springs.
- Adell Compounding is a fairly large plastics fabricator in Denham Springs.
- Bercen, a specialty chemical manufacturer in Denham Springs.
- CB&I, pipe fabrication, in Walker.
- Ferarra Fire Apparatus in Holden.
- Deltak Manufacturing in northern Livingston Parish.
- Gator Trax (boat manufacturing) in Springfield.
- Superior Steel in Denham Springs.

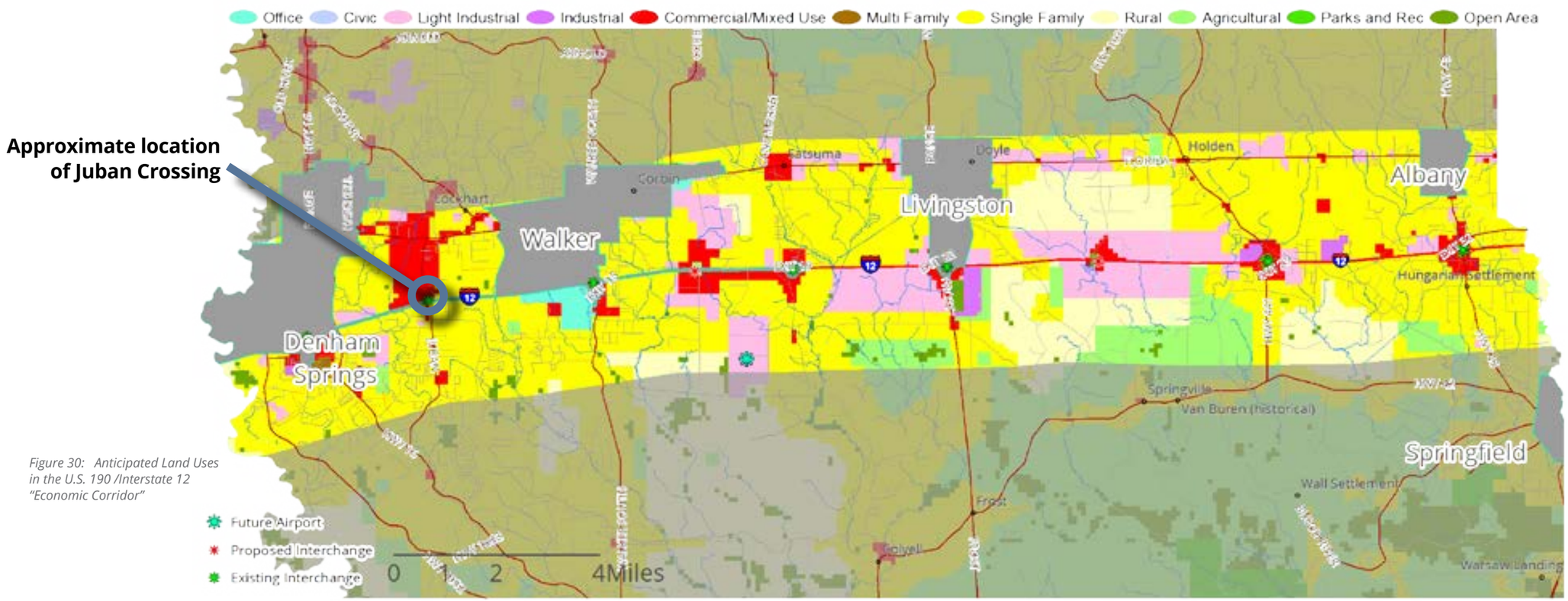


Figure 30: Anticipated Land Uses in the U.S. 190 /Interstate 12 "Economic Corridor"

Location trends for industrial uses

Historically, much of the industrial and light industrial development in the Parish has occurred along U.S. Highway 190 – which also provides access to the railroad tracks. Most industries have located in incorporated communities, but more recently, some industrial and light industrial businesses are beginning to appear in the unincorporated Parish closer to Interstate 12.

An analysis by the LEDC identified that the optimum locations in the Parish for future industrial growth is along the U.S. Highway 190 and Interstate 12 corridors.

If the Parish can increase local employment, it will also:

- Reduce the "leakage" of sales tax to other parishes.
- Reduce commuting and congestion.
- Become a more appealing to those who wish to work closer to where they live.

Therefore, it is in the interest of the whole Parish to preserve optimum locations to enable/encourage industrial businesses.

Public input about industrial uses

About 70 percent of respondents felt that industrial uses should be located "near similar uses" or "in designated locations" (as opposed to being allowed to locate anywhere in the Parish).

Achieving Greater Predictability in Land Use

The Anticipated Land Use Map identifies locations in the unincorporated Parish that are likely, and compatible, for various land use to occur. However, given current development and the lack of regulation of land uses, there will be many opportunities for incompatible development to occur—with the unintended consequence of discouraging the quality and quantity of businesses that the Parish could otherwise attract.

Since attracting businesses and jobs to the Parish is in the public interest, how can the Parish be more proactive in doing so?

Since one of the common themes from the public feedback was the desire for predictability in land use decisions, particularly for certain areas and for certain uses, how can the Parish bring about greater predictability?

3 Key Questions

Within the unincorporated areas of the Parish, that are growing (see "Growth Barbell" in Chapter 1) three basic questions face the residents of Livingston Parish:

- How to accommodate the rights of landowners who wish to develop in a manner that may be different from the current patterns?
- How to preserve the character and quality of life of existing neighborhoods in the Parish, including those that may be adjacent to lands that will develop eventually?
- How to encourage, the types and locations of development that will be essential to the fiscal health and self-sufficiency of all Parish residents?

Current regulations do not result in predictable land uses

The Parish has no formal regulation regarding the use of land. The only control Livingston Parish exerts on development is through the buffer requirements of the Subdivision Regulations[2]. As the name implies, subdivision regulations are only applied at the time land is subdivided (divided into multiple lots). The buffer zone requirement of the Subdivision Regulations exerts only a modest, indirect control over land use:

1. The buffer zone is required only between conflicting uses (e.g. commercial or industrial next to residential).
2. The buffer is actually relatively narrow (25 to 50 feet) and can be used for parking lots and roads. The result is very little actual buffering (or mitigation) of incompatible uses.

Thus, as long as the developer provides buffer zones, the Parish has no ability to deny any land use, anywhere in the Parish.

This has had several results:

- **Incompatible** uses cannot be prevented from occurring adjacent to each other,
- Significant public **controversy** often arises, and
- Expensive **legal challenges** have been raised, even directed at individuals as well as the Parish.

Figure 31: Walmart construction adjacent to single-family homes indicates a need for some predictability in land uses.

2 *There is a modest amount of de facto control of land uses performed by the Planning Commission and Parish Council when they deny some projects, often significantly influenced by the support or opposition of those attending the hearings. But as has been shown in the past, decisions made on a case-by-case basis, without the benefit of having an overall plan, are always subject to being overturned in the courts.*

Table 8: Options to increase predictability in Livingston Parish		
Name	Purpose/Description	Applicability
Current Subdivision Regulations With Expanded Buffers	Subdivision regulations are applied only at the time land is divided into two or more parcels. They regulate procedures for subdividing, basic lot dimensions and setbacks, parking, standards for construction of roads and other improvements, impact studies. They do not exert any restrictions on land use except through the requirement of buffers between "incompatible" uses. This technique builds on the existing parish buffer requirement, but adds more specificity as to what are compatible uses, and increases the setback requirement for uses that have less and less compatibility (i.e. larger buffers between industrial and residential uses, and smaller buffers between single-family subdivisions and town home developments.	Good. In the short-term, Livingston should adjust its subdivision regulations to increase land use compatibility.
Transects and Form-based Zoning (FBC) (design-based codes)	Relies on rules applied more about lot size, setbacks and size of buildings that on land uses. For example, in a largely suburban single-family residential area, various kinds of uses, such different house types, and even a corner store could be permitted so long as they conform to the physical character (size, etc.) of other existing development in the area.	Form-based codes are growing in popularity, but have not yet been widely adopted in Louisiana.
Conventional Zoning	It establishes discrete zones where uses can be protected. As zoning reduces conflicts between adjacent property owners and instills a use by right, it helps property values stabilize.	Good. Helps ensure compatibility between uses, but is less flexible than FBCs.
Develop Subarea Land Use Plans as "Strong Guides"	Because of the diversity of conditions in various parts of even the "developing" areas of the parish, the Parish could: designate sub-areas; let each sub-area determine the characteristics they wish to protect; incorporate those characteristics into a sub-area plan; and/or charge the Planning Commission to follow the various sub-area plans in making land use decisions in each sub-area	Good, if adopted as an amendment to the Master Plan.
Development Standards and Site Plan Review Ordinance	Livingston Parish has already adopted standards for various aspects of land development, including requirements for stormwater management, buffer zones, standards for streets and access points. This approach goes a step further and expands the standards for development. It does not place limitations on where uses can go, it merely establishes the "ground rules" for developments regardless of the location.	Reasonably good. Rural areas that are unable to adopt conventional zoning could establish basic development standards and enforce them through site plan review.
Growth Area Zoning	This tool permits cities to exercise zoning regulatory authority within an unincorporated area adjacent to the municipal boundaries. The purpose is to allow the city, when the county does not have appropriate land use regulations in place, to regulate development that spills over into the urban fringe and to prepare growth for future annexation	Good, the Parish should work with cities to encourage growth that meets municipal stan-dards.
Corridor, Interchange and Other Partial Zoning Schemes	This tool is a less-than-comprehensive zoning ordinance to regulate specifically designated areas such as a highway corridor, a highway interchange, a river corridor, or other subarea of a jurisdiction. The purpose of this tool would be to establish zoning in a specific geographic area of a parish because land use controls are needed there but are not necessary or politically acceptable everywhere.	Okay, different areas of the Parish have different demand and many need different regulations. Less streamlined and than zoning the entire Parish.
Major Permit Requirement	This approach would establish a local permit requirement for certain types of development. The parish could be the permit authority.	Good, subject to having a staff that can administer it.

A lack of predictability tends to make the outcome of any land use application uncertain, and contentious. The result is that **ALL** development is made much riskier (for the applicant), more expensive, and more time consuming. As a result, it tends to foster the continuation of what we have today: an unpredictable, random mixing of various land uses. Further, the current decision making process discourages even good (compatible) development and uses that would provide needed employment and taxes.

Public input about predictability and future growth?

Regarding growth in general, public input indicated strong support for the following statement:

"The Parish should influence growth to occur in the most appropriate locations."

The public and various stakeholders indicated potential **places where predictability may be warranted**:

- **Areas that have, or are likely to have expect diverse types of development** (and high potential for incompatible uses adjacent to each other).
- Areas that might have **market pressure for higher residential density** (smaller lots).
- **Industrial areas and commercial areas**.
- **Growth areas** around cities and towns.

Options for achieving more predictability in land use

To provide greater predictability in land use decisions, there are a number of options the Parish might consider:

Where greater predictability is needed/warranted.

Greater predictability is not as pressing in large areas of the Parish, i.e. those that are not being threatened with significant growth, such as much of the eastern, northern and southern parts of the Parish. For these areas, current Parish regulations are adequate to guide what modest growth will occur in the foreseeable future.

In other areas of the Parish, especially the west and central parts, where there is and will continue to be significant growth, there is a strong need for additional **steps to bring about greater predictability in land use**—for several reasons:

- **To protect existing property owners** from incompatible development.
- **To attract the quality of development** (commercial, employment and residential) the Parish desires.
- **To reserve locations for appropriate uses to meet future need**, and rights of way for necessary infrastructure to support future development.

Options for increasing predictability?

The Appendix[3] catalogs a variety of tools used by various communities to help coordinate and manage development to achieve more **predictability** and greater **compatibility** between adjacent uses. The recommendations for Livingston Parish are summarized in Table 8, with a brief assessment as to their applicability.

3 Appendix is a separate document and may be obtained from the Parish.

Implementation

Strategies

1. Create a process of "self-determination," organized by subareas, for the remainder of the Parish to determine the extent to which each subarea wishes to adopt regulations to increase predictability of future development. Individual subareas should be given a reasonable time (say 2 years) to undertake the subarea self-determination process (modify their plan, decide on zoning). If a subarea fails to take any "self-determination" action, the Parish may continue to use the Anticipated Land Use Map as a guide for decision-making, and consider adopting zoning.
2. Adopt zoning regulations in the Interstate 12/U.S. Highway 190 "Economic Corridor" (see Figure 30)
3. Adopt design guidelines for the major roads in the "Economic Corridor"

Policies

1. All future large development projects (i.e. airport, roads, utilities, public buildings, etc.) should demonstrate how they are either consistent with the Comprehensive Master Plan (CMP) or how the CMP needs to be modified.
2. All future capital improvements budget requests related to land use and infrastructure should demonstrate how they are either consistent with the Comprehensive Master Plan (CPM) or how the CPM needs to be modified.

Actions

1. **Short-term** (1-2 years)
    a. Hire a full time planner to assist in subarea planning implementation (see mid-term actions below).
    b. Until self-determination subarea plans can be adopted.
        i. Council, Planning Commission and Parish Staff to use the anticipated land uses as a general interim guide for land use decisions.
        ii. Modify the Code of Ordinance's, Subdivision Regulations for the "economic corridor", to increase the buffer size for incompatible uses. (see "Possible Tools for Land Regulation" in the appendix[4] for details).
    c. Create and adopt zoning for the "economic corridor" (U.S. Highway 190/Interstate 12).
2. **Mid-term** (3-5 years)
    a. Adopt or modify the 13 former police-jury ward boundaries as the boundary for subarea planning (land use self-determination).
    b. Form a steering committee of subarea residents and businesses. Members should include representatives from a wide-range of trusted community members.
    c. Invite residents and businesses to participate in meetings to develop subarea plans for each subarea. Review the Existing Land Use Map. Identify opportunities and constraints for future land use. Review the Anticipated Land Use Map as a basis for future self-determination. Organizer should present need for land use determination (such as infrastructure planning, congestion reduction, etc.) opportunities for future land uses (such as commercial along arterial corridors), and constraints (such as wetlands).
    d. Identify a vision (at least a one page summary) of future growth for each subarea.
    e. Determine the degree to which more detailed land use predictability is desired.
    f. Choose the appropriate tool from the Toolkit (see "Tools" in the Appendix).
        i. If zoning is desired, select the appropriate zones from the Toolkit.
    g. Have local steering committee adopt the subarea plans.
    h. Recommend to the Planning Commission and Council:
        i. An amendment to the Parish Comprehensive Master Plan to include:
            1. The subarea plan's vision.
            2. Anticipated Land Use revisions.
            3. Identified land use determination tools (such as zoning or other tools the subarea wishes to be enacted).
3. **Ongoing**
    a. Work with individual municipalities to determine their appropriate growth boundaries and ways to reduce the conflict between Parish and municipal land use standards to encourage orderly growth of cities.
        i. Form a **working group** for each growth area, comprised of representatives of the Parish and the respective municipal Planning Commissions.
        ii. After further study, the working group recommend to the Parish Council procedures for project approvals in each growth area such as:
            1. Joint City/Parish review.
            2. The creation of case-specific standards.
            3. Adopt municipal standards.
    b. Create a GIS system for the Parish, integrated with the Parish Assessor's data, to keep track of development and land use data. Include Office of Emergency Management considerations to help provide new development that has appropriate emergency response.

4 Appendix is a separate document and may be obtained from the Parish.

Design Guidelines for the Interstate 12 / U.S. Highway 190 "Economic Corridor"

Purpose: a consistent, quality impression of the Parish

Inasmuch as the Interstate 12/U.S. Highway 190 corridor is the most likely area of the Parish to see significant commercial, industrial, and high density residential growth in the next several decades. It is also the major through-way in Livingston Parish, and the visual impression it gives and its functionality, will have a large influence on the traveling public's perception of Livingston Parish. The appearance of this corridor will also have a significant impact on property values and the ability of the Parish to continue to attract quality businesses.

Therefore, **it is valuable to all residents of the Parish that development in this corridor has an attractive and coordinated visual character.** To that end, a key action of the CMP is to develop and apply (with land owner participation and approval) modest design guidelines to bring about a basic level of consistent appearance in the Interstate 12/Highway 190 economic corridor.

The purposes of these guidelines would be to:

- Make this corridor a vibrant commercial place.
- Strengthen the Parish's tax base.
- Preserve the location as an incubator for new, entrepreneurial, locally-owned businesses.
- Attract stable, established national businesses.
- Provide a location for businesses that can support other commercial and industrial businesses in the Parish (services, delivery, storage, manufacturing, construction, warehouses).
- Provide a full range of employment opportunities for Parish residents.
- Protect the property values of nearby residential and commercial areas.

It is likely design guidelines would be implemented through an overlay district. The overlay district should include the areas that are visible from Interstate 12 and U.S. Highway 190, and undeveloped land along any future major arterials that connect the two. Any areas that would like to be a part of the overlay would require a vote of the property owners.

Figure 32 represents recommended locations for the design guidelines.

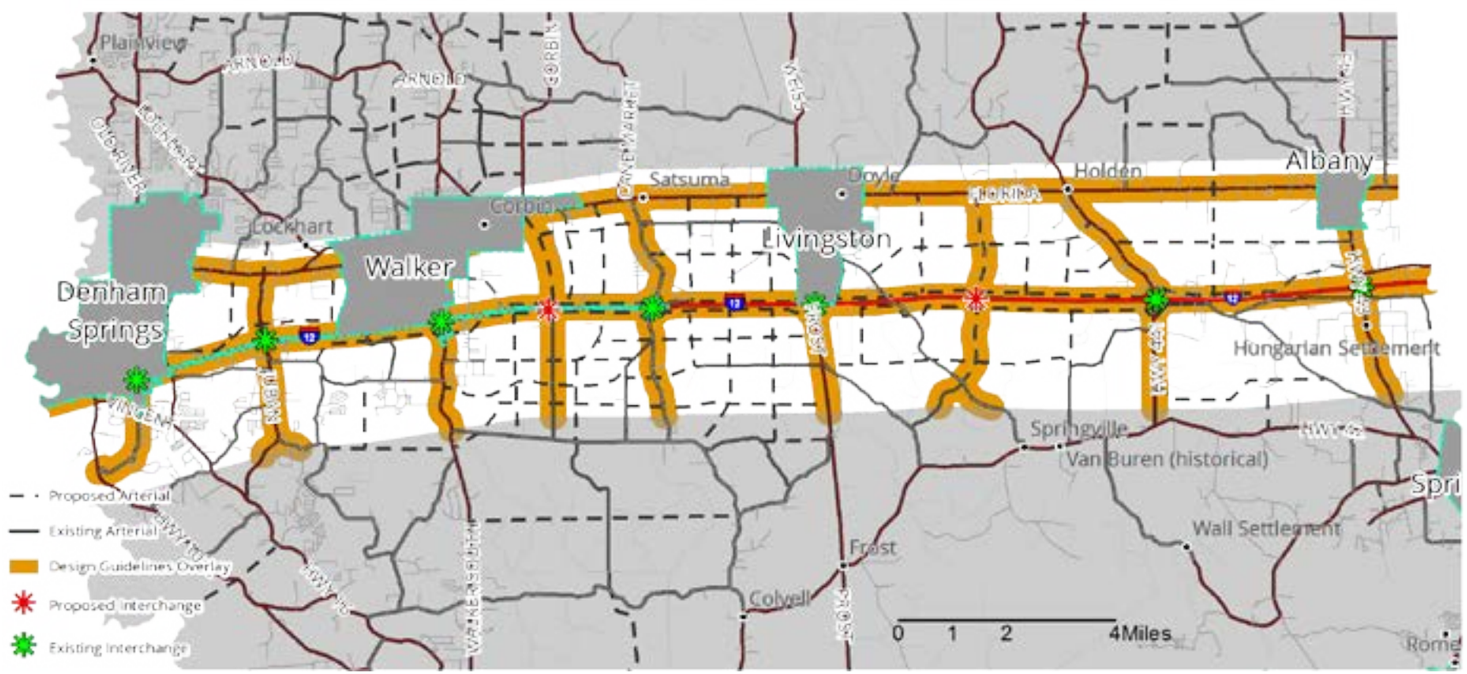


Figure 32: Overlay where guidelines are recommended

Land uses

It is anticipated that the corridor will eventually have zoning applied in order to provide for orderly development of the land and avoid incompatible adjacent uses. PERMITTED uses in the economic corridor would be those allowed in the underlying zoning.

Uses NOT PERMITTED would include the following:

- Adult entertainment and sales of adult materials.
- Pawn shops, check cashing, cash advance services (except for banks, credit unions, etc.).
- Bail bond office.
- Massage and tattoo parlors.
- Junk yards, auto-recycling, trash storage, trash transfer.
- Chemical and petroleum processing that requires visible or potentially hazardous emissions.

Roads

1. Per the Major Street Plan, provide a grid of major and minor roads throughout the corridor to allow multiple means of travel through the area. This will a) avoid concentrating traffic on a few streets and b) provide alternative routes for emergency vehicles and egress.
2. Future individual developments are strongly encouraged to connect local roads to adjacent development to continue this interconnectivity at a local scale.

Site layout

3. Frontage roads along Interstate 12 are indicated in the Major Street Plan. These are intended to encourage properties fronting on Interstate 12 to orient their entries toward the frontage road (and therefore the Interstate).
4. Main entries should also face U.S. Highway 190 and the other arterial roads in the corridor.
5. Only modest amounts of parking should be placed between the building front and the adjacent roadway. Major parking as well as heavy equipment storage and outdoor fabrication should be located out of sight, behind the buildings fronting major roadways.
6. Commercial parking lots along major roadways should be interconnected so as to not require patrons to have to re-enter traffic to move from one shopping center to another.
7. Sidewalks at least 5' wide should be provided along the street edge(s) of each property. They should connect to adjacent existing sidewalks, and should minimize walking distance.

Architecture

8. Building facades fronting on major roadways (including Interstate 12) should be treated as a front façade—i.e. with architectural detailing and materials befitting a public entry. Blank walls and rough construction materials (i.e. concrete block, tilt-up concrete, and sheet metal) should be avoided or minimized.
9. The color and materials of facades of buildings fronting on major roadways in the corridor should be consistent—from a color range selected for each subarea.
10. Architectural materials should be durable, easy to maintain, easy to clean, and repairable in a manner that is consistent with the original finish.
11. Visible pitched roofs should be made consistent from a selected palate of materials (e.g. standing-seam metal, architectural grade shingles, tile, slate, or synthetic slate). Buildings with flat roofs should have parapets or other architectural features that hide the roofing material and mechanical appurtenances from ground level.
12. For aesthetics as well as flood hazard, all mechanical equipment should be located on the roof, or on a raised platform. It should always be screened from the street (e.g. with parapet walls or enclosures) or placed at the rear of a building.
13. Buildings in each designated subarea should have a distinct and consistent architectural character, but variety is also recommended (e.g. color and details). Building design shall make gradual transitions to surrounding conforming properties.
14. While some national retailers require standard materials and colors (known as "trade dressing") the desire to have overall consistent design in the corridor is equally important. Therefore, for the street frontage façade the percent of trade dressing should be specified for each district—generally not exceeding 25 percent of the façade surface.

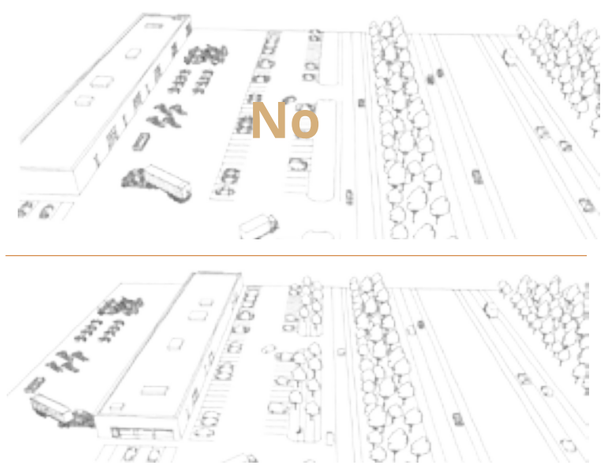


Figure 33: By encouraging equipment storage out of sight, design guidelines help make the "economic corridor" more attractive

Figure 34: By encouraging moderate parking in the front of buildings, design guidelines can make the area more visually attractive to vehicles and pedestrians

Landscape

15. Much of the Interstate 12 corridor is still heavily forested to the property line adjacent to the highway. Many developed portions of the corridor have preserved a band of existing trees with a cleared understory. It is highly recommended to continue this practice of preserving the tree band along the highway in order to:
    a. Create a distinctive corridor.
    b. Unify the diversity of the buildings behind the trees.
    c. Allow visibility of the buildings and signage to highway travelers.
16. Street trees (either existing or planted) are encouraged along all streets.
17. For commercial, and retail developments, extensive trees are encouraged to:
    - Shade and 'break up' large parking lots.
    - Shade public walkways.
    - Provide shade and visual interest in pedestrian areas.

Signage

19. If desired by landowners, separate subareas (not individual buildings however) can be designated for differing signage character (e.g. sign size, materials, character, lighting, placement).
20. The management of the signage guidelines should be provided by a property owner's entity.

Trash and Recycling

21. Loading docks should be located at the side or rear of street fronting buildings or otherwise screened from public view.
22. All solid waste, recycling, trash containers, and grease containers should be located as far as possible from public areas and screened from public view (e.g. inside buildings or in attached enclosures).

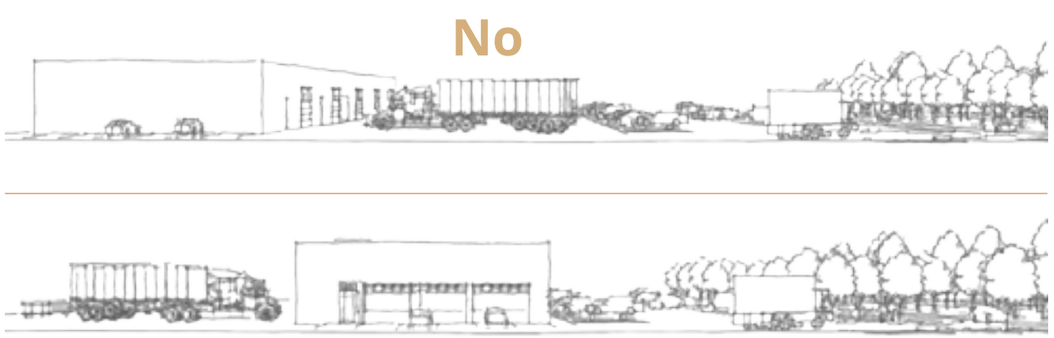


Figure 35: By encouraging loading docks be screened from public view, design guidelines make development more visually attractive

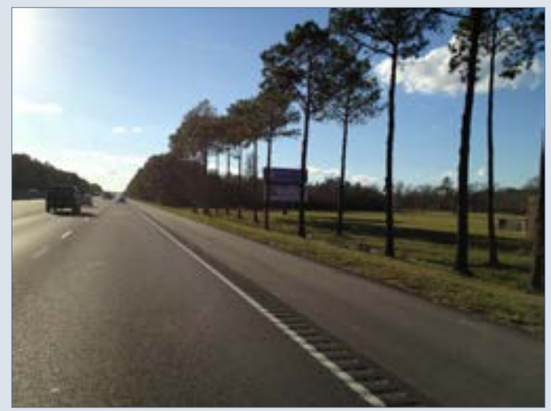


Figure 36: Livingston Parish's corridors have a distinctive character: a band of trees with a cleared understory.

Envision Livingston 4

Wastewater

If Livingston Parish's population doubles by 2030 as projected, it will require significant improvements to the existing wastewater infrastructure to meet the increase in demand

Photo Credit: Neighbors' In Action

4 Wastewater

The majority of the populated areas of the Parish are served

by six municipal wastewater treatment systems[1]:

1. Denham Springs.
2. Walker.
3. French Settlement.
4. Livingston.
5. Albany.
6. Springfield.

These public wastewater treatment facilities currently serve their own cities and several have extended to serve the surrounding unincorporated areas. **Altogether, these systems serve less than 30 percent of the population of the Parish.**

Livingston Parish is divided into eight (8) sewer districts to serve the unincorporated areas of the Parish. **The two functioning Parish wastewater treatment systems are Sewer Districts 1 and 2**, which cooperatively serve the northwestern region of the Parish, including Watson and north Denham Springs areas (approximately 2,500 customers).

The remaining areas of the Parish are predominantly served by:

a) Individual mechanical systems (i.e. MO-DAD Utilities and Total Environmental Solutions, Inc.).

b) Individual septic systems.

c) Community collection and treatment systems ("package" treatment plants).

1 See appendix for more information on existing systems. The appendix is not includes but may be obtain from the Parish.

These systems are designed, and required, to treat wastewater at primary and secondary treatment levels [2], and are then allowed to drain to open ditches along the roadways, eventually draining to major tributaries such as Grays Creek, Colyell Creek, the Amite River, Tickfaw River, and Natalbany River.

Water Quality Issues

The Louisiana Department of Environmental Quality (LDEQ) has indicated that **there are poor water quality conditions, below state standards**, in many of the surface waters in Livingston Parish. In doing spot checks, they found that a significant cause is that many of the individual and package systems are not functioning properly and are discharging inadequately treated effluent into Parish drainages, which eventually reaches the surface waters of the Parish. Though installation permits for these systems are required by the Louisiana Department of Health and Hospitals (DHH), as well as yearly certification, after they are installed there is inadequate monitoring of the systems to assure that they are functioning correctly.

2 Sewage treatment generally involves three stages primary, secondary and tertiary treatment. Primary treatment is a separation stage, where solids are separated from the liquids. Secondary treatment removes dissolved and suspended biological matter. Tertiary treatment is generally used to create effluent classified as disinfected.

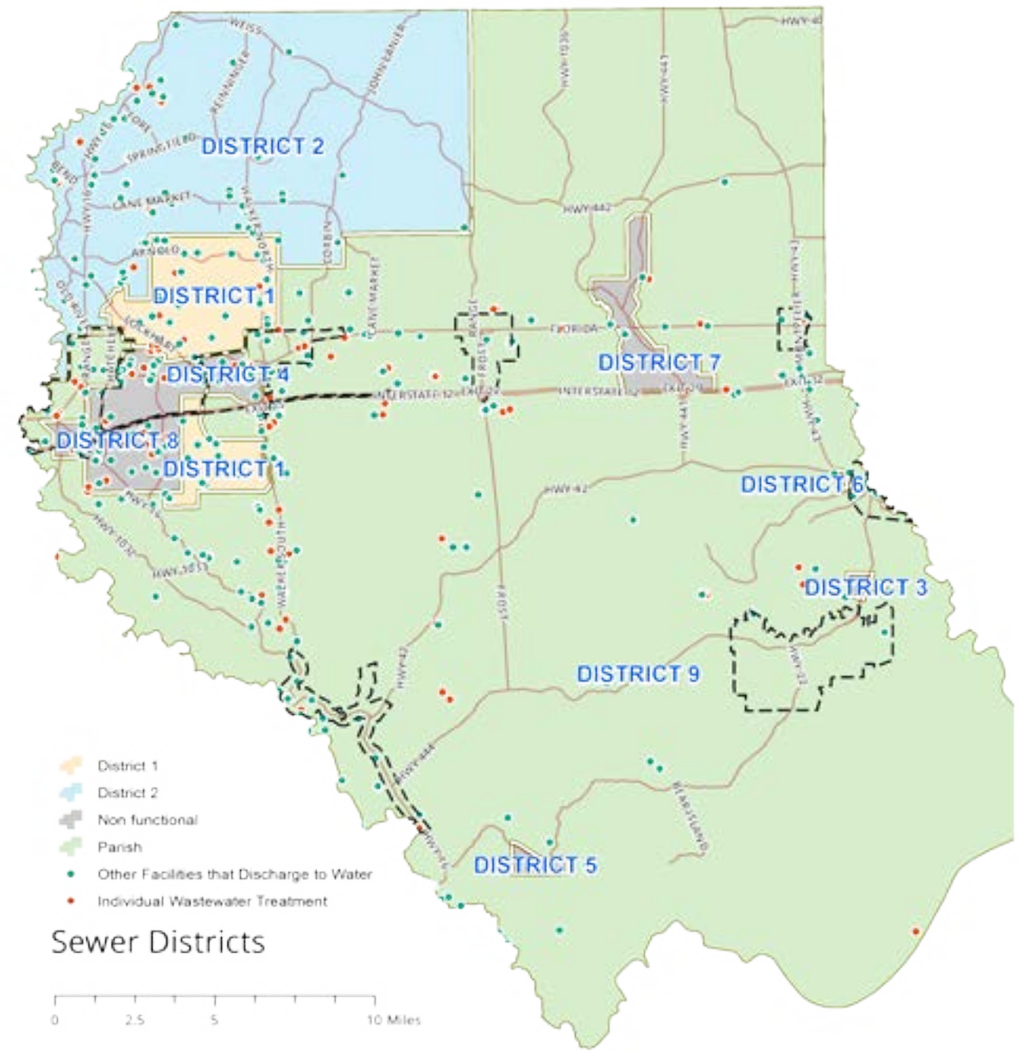


Figure 37: Sewer districts

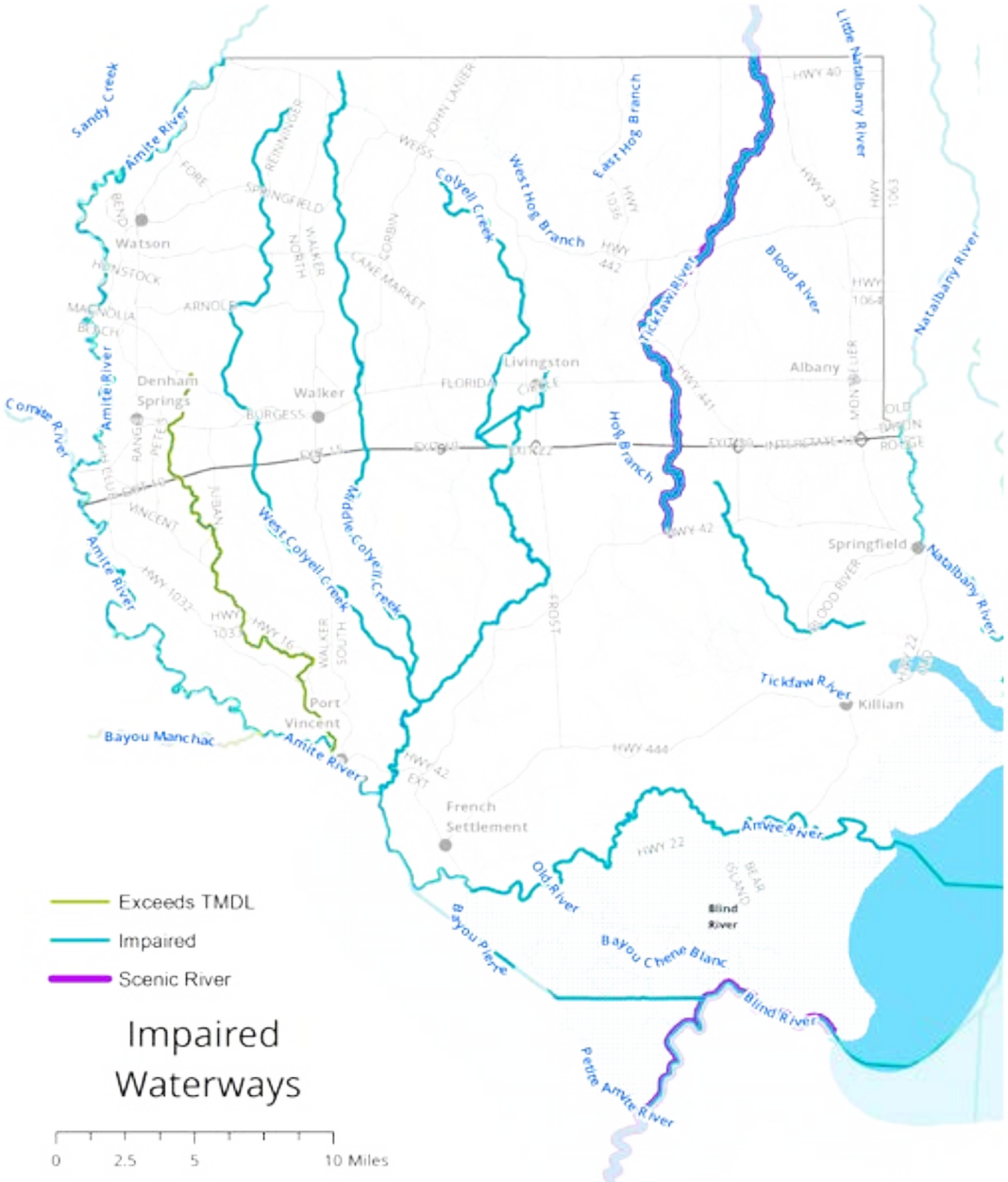


Figure 38: Impaired waterways

Inadequately treated effluent contains disease-related bacteria, which are hazardous to humans as well as riparian wildlife/water species. Also, high amounts of chemicals and organic materials cause algal blooms that consume the oxygen in the water and suffocating aquatic life.

Standards for the allowed level of pollutants in water bodies (called Total Maximum Daily Load, or TMDL), are established by LDEQ. A **number of water bodies in Livingston Parish have been classified as "impaired"** due to high TMDL levels, including Gray's Creek, the Amite River, Colyell Creek, the Tickfaw River, and the Natalbany River (see Figure 38).

When TMDL limits are exceeded substantially, LDEQ has the authority to restrict permits on new wastewater discharges to surface waters (individual and package systems), which can effectively curtail growth and economic development.

LDEQ has indicated that TMDL limits are likely make wastewater treatment discharge permits for any new individual or package treatment systems more difficult to obtain. Thus, a regional system is going to be necessary to assure adequate water quality in the developed areas of the Parish, and especially to allow for new development.

The presence, or lack, of wastewater treatment is likely to also affect the development of state roads. It is currently a policy of the Louisiana Department of Transportation and Development (LADOTD) not to allow untreated effluent into storm drain lines associated with road drainage. Since many of the drainage swales along roads in the Parish carry under-treated effluent (as described above), roads cannot be widened using piped storm drains until effluent treatment is improved.

If the Parish wishes to attract quality development in the future, the reality is that desirable commercial, medical, employment, and even residential developers cannot consider development in areas without adequate wastewater service.

Therefore, **construction of a regional wastewater treatment system is perhaps the most important need for Livingston Parish's continued growth and development.**

Wastewater treatment capacity and need

If Livingston Parish's population doubles by 2030 as projected, it will require significant improvements to the existing wastewater infrastructure to meet the increase in demand. Between the Parish and municipal systems, Livingston Parish currently has approximately 7.5 million gallons daily (MGD) of public wastewater treatment capacity. The increased population will produce approximately 14.5 MGD of wastewater, nearly twice the existing capacity. Additional capacity will be needed:

a. to serve a number of already developed areas, and
b. to account for storm water infiltration into the wastewater pipes.

Therefore, **treatment demands will more than double the existing supply.**

Effectiveness of a Regional Wastewater Treatment System

Recently, after the construction of a new wastewater treatment plant in Denham Springs, and the attachment of many existing individual and package plants to the system, the TMDL levels in Gray's Creek dropped (water quality increased) sufficiently that the LDEQ began to again permit discharges in that watershed.

Most future growth is projected to occur in the "Growth Barbell," moving generally from west to east. The northwest areas of the Parish are already contributing a significant part of the water pollution problem. As a result, the Denham Springs, Walker, and Parish Sewer Districts 1 & 2 systems will require the most immediate improvements to meet the increase in demand.

What Intensity of Development Justifies Regional Treatment Service?

One of the factors that determine where to install central wastewater facilities is development density. If there aren't enough homes along a wastewater line, their associated fees, or the district's tax levy, typically won't cover the cost of construction and maintenance.

A 2007 the US Army Corps of Engineers (USACE) study [3] evaluated water and wastewater treatment feasibility and recommended options for Livingston Parish to support future growth. The USACE study indicated that 12 households per linear mile would be an adequate density to the extension and maintenance of central sewer.

After further analysis, considering current construction costs, **the CMP recommends, as a general rule [4], that only areas with a density of 1 or more homes/acre be considered for new wastewater treatment service**. If state or federal grants or low interest loans were available, lower densities could also be feasible.

For rural areas that do not have enough homes/acre to support the costs of being on a regional system, additional efforts will have to be made to make sure that individual or community (package treatment) systems can be made to reliably treat effluent to the levels for which they are designed.

Alternatives for Providing Public Wastewater Service

The USACE study evaluated several approaches [5] to providing wastewater treatment in the region, and recommended **USACE Alternative 5: A Regional Plan focusing on Critical Areas**, it will:

"Utilize existing systems to optimize existing facilities, and build new facilities to meet the additional demand, while focusing on the northwest and southwest as the two most critical areas where the demand is greatest."[6]

To implement this approach, Parish Sewer Districts 1 & 2 would most likely expand their boundaries to serve all unincorporated areas in the western part of the Parish that are not served by the Denham Springs and Walker systems. A systematic approach to expansion would need to be developed, including purchase of private package treatment plants and community systems. It is anticipated that the expansion would occur from the northwest in a southeasterly direction.

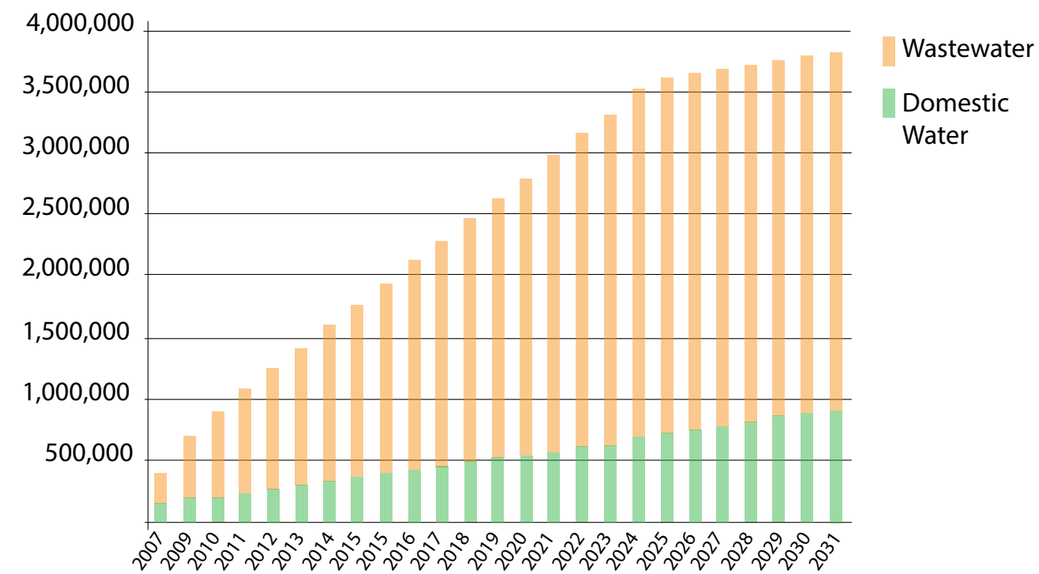


Figure 39: Recommended wastewater and domestic water annual operations and maintenance costs. Source: USACE

For the short-term, optimizing existing public treatment facilities would serve approximately 6,500 households. The remainder of the 21,000 homes could be served within approximately twenty-five years, provided funding could be secured.

The benefits of this approach are that primarily existing treatment plants would be used, with improvements and additions to meet the additional demands. It would also utilize, and expand the staff and structure of existing districts.

3 Master Plan – Water and Wastewater System Improvement and Enhancement-2007.
4 Individual circumstances will vary.

5 See appendix for list of alternatives. The appendix is a seperate document and may be obtained from the Parish.
6 Sewage treatment generally involves three stages primary, secondary and tertiary treatment. Primary treatment is a separation stage, where solids are separated from the liquids. Secondary treatment removes dissolved and suspended biological matter. Tertiary treatment is generally used to create effluent classified as disinfected.

There are two primary challenges faced by this approach:

1. Given that where public sewer is extended will have a major influence on where growth occurs, significant coordination will be required between the districts and the Parish to assure that all of the other infrastructure needed for growth (roads, utilities, parks, etc.) will be available in a timely fashion.
2. The cost of implementation will be far greater than the Parish districts have heretofore faced, and they will need significant new sources of revenue, as well as a sure system for collection of fees.

Costs and funding

The initial cost of Alternative 5 was estimated at $254 million, with an anticipated operation and maintenance cost of $2.1 million/year.

Although extremely expensive, the USACE report projected that Alternative 5 had the greatest chance of receiving federal funding. It was recommended that grants be applied for incrementally.

In addition to seeking grant funding, it is also recommended that the Parish support a new sewer property tax to provide a stable, long-term source of funding over the next 20 years.

Implications of a Regional Wastewater Treatment System

1. There is a strong possibility that future major development (both buildings and roads) will be greatly slowed, curtailed or greatly reduced in intensity, in areas that do not have regional wastewater treatment.
2. It is likely that properties receiving wastewater treatment will become more valuable for many uses and will increase in value to their owners, especially commercial properties. This will also make the land more expensive for developers and will encourage/promote higher density uses to recapture the additional costs.
3. Wastewater treatment costs will generally cause development in Livingston Parish to get more expensive in the future. The wastewater facilities typically installed in the past did not adequately mitigate the true impacts of development on water quality—and the decrease in water quality. Those costs must now be included, and in fact recaptured.
4. Given the cost of implementation, it will be very likely be necessary to extend the wastewater treatment system in gradual steps, and development will likely follow suit.
5. Extend wastewater treatment service throughout the areas of the Parish that have developed, or are expected to develop, at a density that can sustain the cost of installing and maintaining the system. (Generally at a density of 1 or more homes/acre.)

Implementation

Strategies

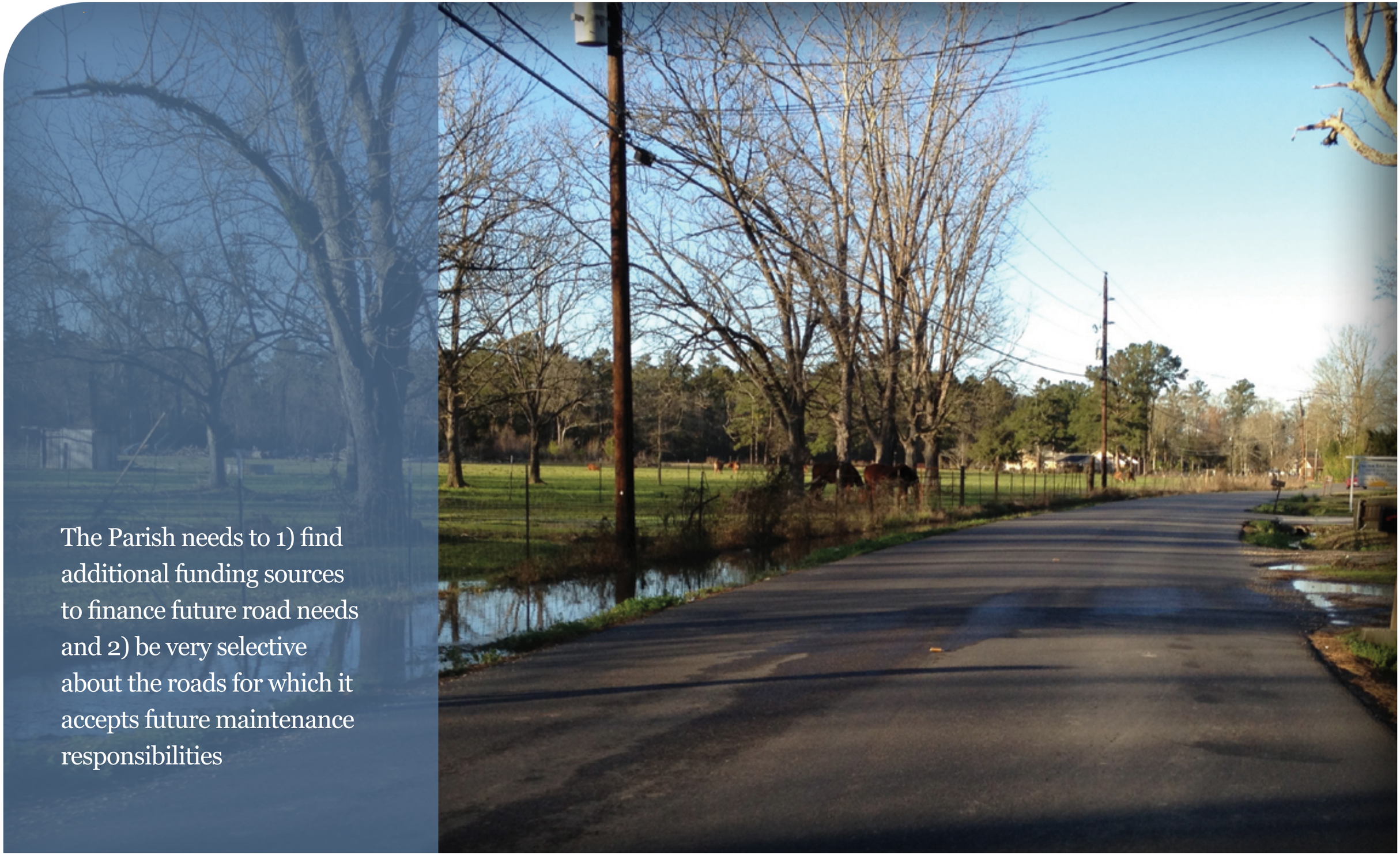
1. Facilitate the new wastewater treatment services by assisting the Livingston Parish Sewer Districts 1 & 2 in expanding their facilities and boundaries. This means helping the existing districts find the funding they need for infrastructure improvements.
2. Assume that expansion will be incremental outward from existing lines and treatment plants (avoid leap-frog expansion).
3. Each district will determine its own policies. In general, the Parish should simultaneously encourage an expand wastewater treatment lines to:
    a. Serve existing homes (this will help increase water quality and avoid curtailing development).
    b. Providing opportunity for new commercial and employment development in the "economic corridor" (to increase employment options and generate taxes to support funding needs).
4. Expand wastewater services:
    a Only where there is high participation by existing landowners along the new extensions, and
    b only when the land use density is allowed (zoning or some other measure) to reach an economic level of density.

Actions

1. Call a "summit meeting" of Parish sewer providers to:
    a. Establish a vision for regional service.
    b. Evaluate the obstacles and opportunities to creating a regional system (such as the USACE approach) and formulate solutions[7].
    c. Formulate a cooperative agreement for expanding existing systems.
    d. Begin the search for funding mechanisms such as a property tax.
2. Work with the State Department of Health and Hospitals to monitor and enforce improperly functioning private treatment systems.
3. Revise Livingston Parish Code of Ordinances for wastewater regulations:
    a. Reduce the allowable number of houses within new developments to be served by a package treatment system.
    b. Require future developments on private wastewater treatment services (such as Mo-dad or TESI) to tie into public wastewater infrastructure when it reaches their service area (at no cost to the public).
    c. Do not allow development that will increase Total Maximum Daily Load levels of an impaired water body as defined by the Louisiana Department of Environmental Quality.

7 For example, if the Parish sewer districts are not able to provide service to an area, then it may be cost-effective to share costs of expanding municipal systems to unincorporated areas of the Parish. The municipality could gain customers, and the expanded capacity would return tax benefits to the Parish. Incentives could include sharing of installation costs or tax revenues.

Envision Livingston 5
Transportation



The Parish needs to 1) find additional funding sources to finance future road needs and 2) be very selective about the roads for which it accepts future maintenance responsibilities

Three primary issues related to transportation are facing Livingston Parish are

congestion and safe convenient circulation, the high cost of maintaining Parish roads, and the lack of a Major Street Plan to guide long-range decision-making.

These are further described below, and remedies proposed later in this chapter.

Three Challenges Facing the Parish

Congestion and safe, convenient circulation

According to the public input received in the planning process, **Parish residents consider traffic to be the number one issue facing the Parish** now, and they believe in the future, too. Congestion analysis prepared by the Capital Region Planning Commission (CRPC) indicate that many major roadways are congested during peak travel periods, especially the east-west roadways connecting the Parish to Baton Rouge through the limited river crossings. Recent widening of Interstate 12 has reduced congestion, but history shows that the benefit will be relatively short-lived (see Figure 42-44, on the following pages).

This focus on congestion is common in rapidly growing suburban areas. People move to the fringe to "get away" from the city and then are dismayed to discover that commuting congestion on suburban roadways is as bad as, or worse than, it was in the community they left.

In reality, most major roadways in growing areas are congested. Eliminating congestion as a sole objective of a transportation program becomes less useful over time, and can lead to focusing on ineffective strategies in transportation system development.

With continued growth, and even with planned roadway improvements, congestion and the commuting time to Baton Rouge will continue to increase. The implications are:

- From any given location in the Parish it will take longer and longer to get to Baton Rouge.
- It will be come less desirable to live in Livingston Parish and commute to East Baton Rouge (when the commuting time reaches a threshold compared to working or shopping in other locations).
- New business/commercial development may be attracted to take advantage of the "captive" Livingston Parish market.
- Shopping and business in Hammond will become more attractive.

Congestion is also related to ability, or inability to efficiently get around the Parish Many subdivisions in the Parish are single-entry or double-entry subdivisions. While this has created a desirable privacy for individual neighborhoods, the cumulative effect is that limited-entry subdivisions force traffic onto the major roadways, increasing congestion.

And finally, the ability to travel efficiently in the Parish is critical to safety—for emergency vehicles to quickly access homes and businesses, as well as for efficient evacuation in emergencies including having alternatives when routes become blocked (see Chapter 8).

The cost of maintaining Parish roads

Livingston Parish is currently responsible to maintain over 800 miles of roadways. According to several studies, the annual cost of maintaining a two-lane asphalt road is approximately $15,000 per mile. This means that the Parish should be budgeting approximately $12 million per year for road maintenance. In recent years, faced with other compelling priorities, the Parish has budgeted far less than that. This topic is addressed in greater detail beginning in the Fiscal Realities section of this Chapter.

The lack of a Major Street Plan

The Livingston Parish Code of Ordinances states that:

"The arrangement, character, extent, width… and location of all streets shall conform to the major street plan [with consideration of] public convenience and safety."

In the past, without a Major Street Plan, decisions about road improvements were made each year, by individual Council members for their own districts. This has resulted in a road construction and maintenance program only loosely tied to overall Parish needs

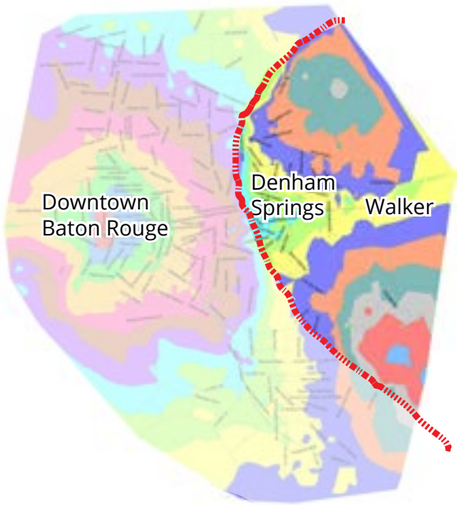
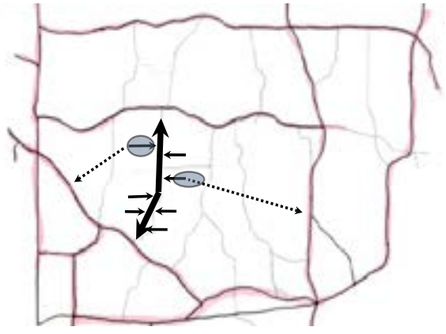


Figure 40: Travel times (5 minute isobars) from downtown Baton Rouge generally increase with distance. As congestion worsens the commuting time to any given location will increase. Source: Capital Region Planning Commission



Single-entry subdivisions increase congestion on...
local roadways...
while taking travelers to their desired destinations.

Figure 41: Single-entry subdivisions increase congestion

Figure 42: Transportation levels of service in the Baton Rouge Metropolitan Area with all scheduled transportation improvements 2032. This shows that even with planned improvements the congestion levels in Livingston Parish will be greater than today

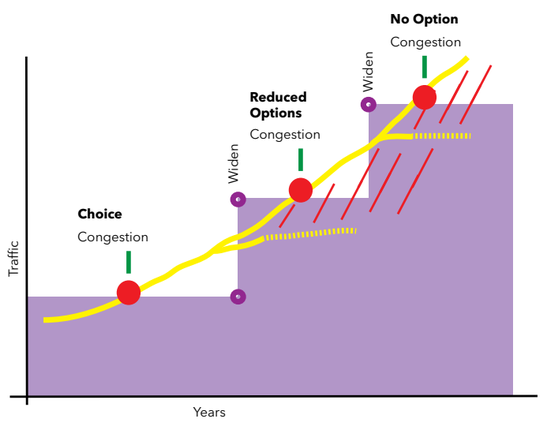


Figure 43: Induced traffic step function w/ roadway widening

Background

Types of Roads and Who is Responsible for them?

There are basically four types in the hierarchy of roadways in the unincorporated Parish, managed by various jurisdictions.

- **Local roads and streets**. Serve individual homes and businesses within neighborhoods. .
- **Arterials and collectors**. Collectors "collect" traffic from local streets and roads and Arterials "collect" traffic from Collectors. Originally a Parish responsibility, the Louisiana Department of Transportation and Development (DOTD) assumed responsibility for some arterials in parishes throughout the state.
- **Highways.** Include the state and interstate highways. Both are managed by DOTD. They are generally designed with limited access to allow higher speeds although state highways in denser areas allow closer intersection and even driveways.

All state highways and major Parish roads and streets are eligible for federal cost participation in construction and major repair projects. Even minor local roads and streets may be eligible for certain kinds of federal financial assistance. Thus, federal funding systems and regulations play a major role in guiding the planning, design, construction and operation of the roadway network within the Parish.

Federal and state highways

The western part of the Parish falls within the boundaries of the CRPC, which is the agency officially designated by the state and federal government to plan major (state and federal) roadways. The CRPC works closely with the Louisiana Department of Transportation and Development (DOTD) and local governments in planning and setting priorities for this roadway network.

Outside CRPC boundaries, (i.e. the remainder of the Parish) the DOTD alone is responsible for planning state highways that may be eligible for federal funding. In planning for these roadways, DOTD also works closely with local governments. DOTD also provides design, construction, operation, and maintenance for all state highways, within and outside CRPC boundaries.

Parish roads

Livingston Parish is responsible for all the roads that are not federal, state, municipal, or private. The Parish is overtly responsible for over 800 miles of roads.

Improving Roadway Capacity (widening)

To plan for expansion of major roadways in its jurisdiction, the CRPC uses a capacity-oriented approach called a "predict and provide" methodology:

1. Traffic is forecasted for the arterial network (but not on the collectors and local facilities).
2. This projected traffic volume is compared to the estimated capacity of those major roadways resulting in measures of congestion.
3. A long-range plan is drawn up that shows how roadways would have to be widened to eliminate the forecasted congestion.
4. The highest priority projects from that plan make their way into near-term, funded Transportation Improvement Program.

Notwithstanding all of the best planning efforts, in rapidly growing regions, it is virtually impossible to keep up with capacity needs defined in this manner . As a practical matter, traffic always grows faster than funding allows capacity to be added (see Figure 43).

Also, construction of new capacity actually tends to be a short-term solution. More capacity (wider roads) makes it possible to commute from farther away, which in turn encourages the spread of residential development, which creates more traffic. This phenomenon is called "induced traffic."

Arterials vs. collectors and local roads

Planning systems that focus primarily on arterials often go awry because of their focus on major routes. State and federal funds are used to grow the highway corridors, but little or no money is available to fund development of the collector network. Consequently, our local roads connect directly to arterials and highways which carry not only the through traffic for which they were intended, but also much of the local traffic. This adds to the congestion problem, especially during peak travel periods.

Congestion diminishes air quality

Roadway development priorities affect more than just congestion. The amount of traffic that occurs in congested conditions is a primary contributor to air pollution. A major required mission of CRPC planning is achieving good air quality. After not meeting federal air quality standards for a number of years, the CRPC Region finally achieved "attainment" in 2011, primarily due to reductions in tailpipe pollutant emissions and stricter federal vehicle standards. However, a new formula has recently been adopted that is likely to put the CPRC Region "out of attainment" under the new standard. This means that the CRPC will need to update plans more frequently (every 4 years).

Current Road Plans for Livingston Parish

Capital Region Planning Commission

The CRPC planning process develops two plans for state highways and certain other projects. If a highway improvement is to be considered, it has to be in these plans (see Figure 44).

- **The long-range (20-year)** needs plan takes expected funding into account but is not technically balanced to revenue forecasts.
- **The short-range (four-year) Transportation Improvement Plan (TIP)** is, by law, "fiscally constrained" – balanced to accurate forecasts of available funding.

The CRPC plans are based on consensus growth projections from input from elected and technical staff in each parish.

Mayors road-widening priority list

The Mayors Road Priority List recommends several improvements that duplicated state priorities, as well as more significant improvements to U.S. Highway 190 and an additional bridge/roadway over the Amite River south of Hillon Hood Road that would connect 4-H Club Road to Tiger Bend Road in East Baton Rouge Parish (see Figure 45).

Citizen group road-widening recommendations

In addition to state and Parish priority improvement lists, Citizens for Highway and Infrastructure in Livingston Parish (CHILP), a citizen activist group, has also recommended roadway capacity improvements to federal, state, and Parish/city (municipal) roads. Some of the CHILP recommendations mirror those of the CRPC and the Parish and some are unique (see Figure 45).

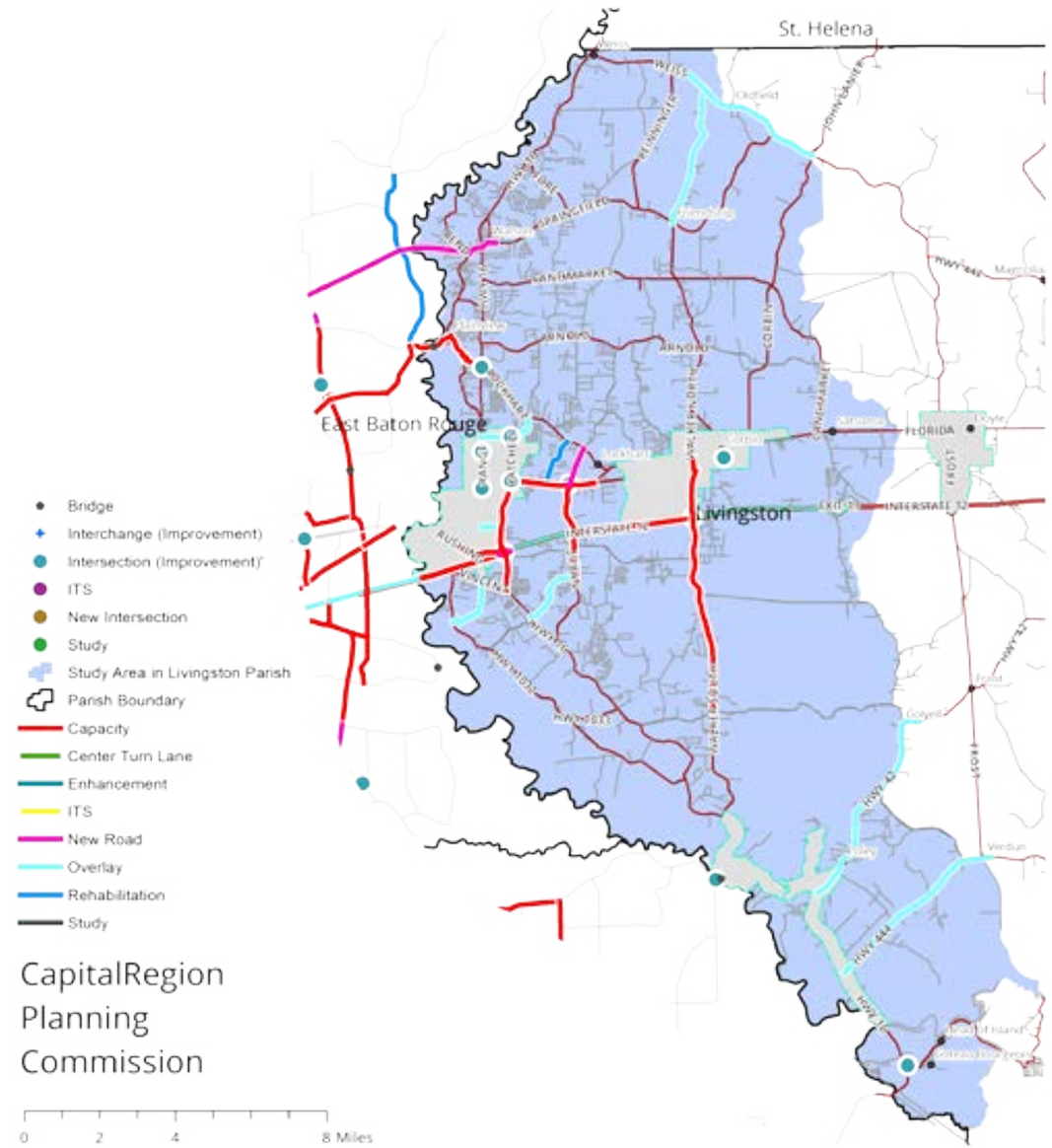


Figure 44: Capital Region Planning Commission's planned improvements for Livingston Parish through 2032

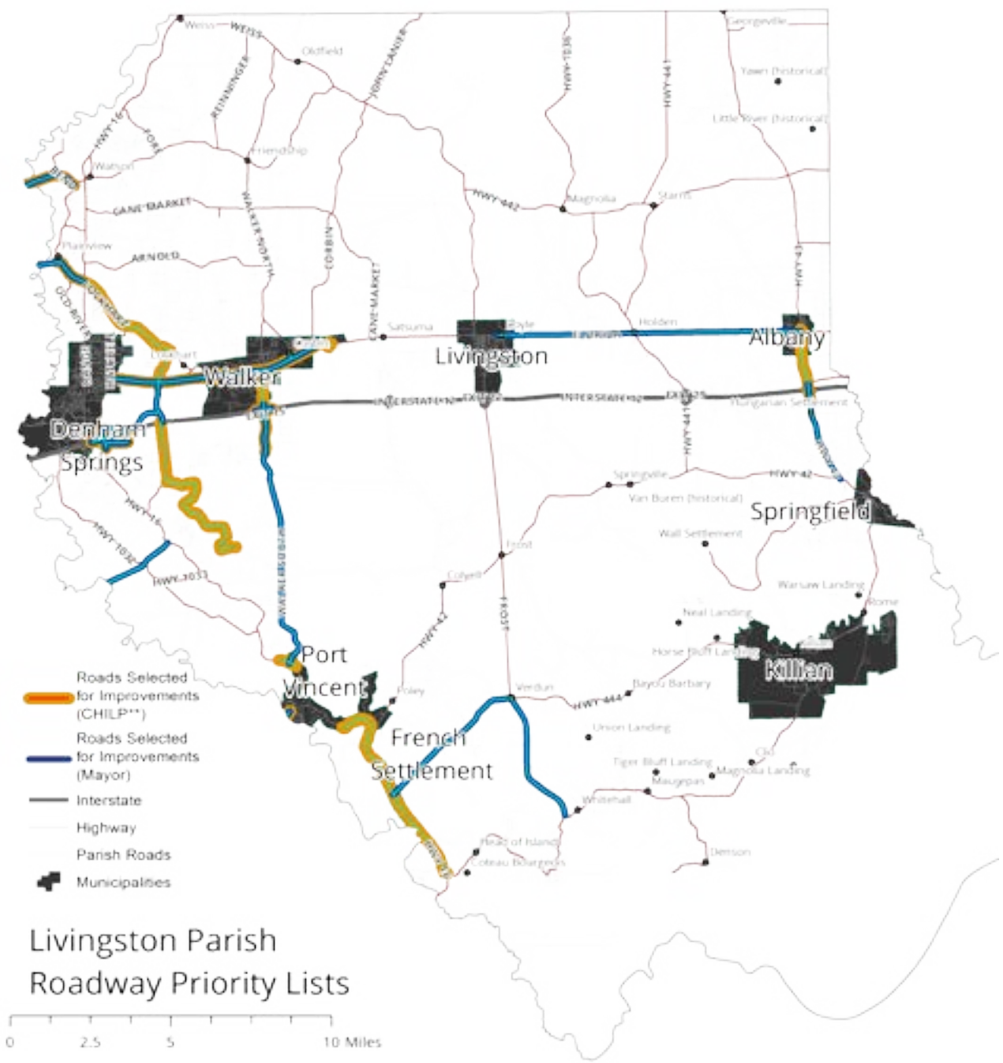


Figure 45: Citizens for Highway Infrastructure (CHILP) and Mayors roadway priorities

Implications of road capacity plans

Assuming that all the CRPC planned projects have been built, the CRPC congestion forecast for 2032 shows that congestion will still be a major problem in western Livingston Parish (see Figure 44).

According to former CRPC Director Huey Dugas (retired) [1],

"Even with all the scheduled improvements, congestion (in Livingston Parish) will be worse in 25 years than it is today."

This reaffirms that road improvements always lag behind demand. It is unlikely that the additional Mayor and/or CHILP recommendations will significantly improve that forecast.

Reducing Congestion by Improving Travel Efficiency

As highway-widening is not likely to significantly reduce congestion, the Parish needs to consider increasing connectivity through a grid of alternative routes.

Local traffic uses arterial roads

Although commuting is a major cause of traffic during peak periods, it represents a fairly small amount of total daily travel. Studies show that commuting is only slightly more than half of morning peak period traffic, a little less than half of evening peak period traffic, and only 20 percent or less of total daily traffic. So local trips (not commuting) comprise approximately half of peak hour traffic and most of the total traffic. Local trips also tend to make congestion worse because they slow traffic by making more turning movements and lane changes.

All of this would be fine if local trips occurred on local roadways. However, where the local road network is incomplete, as it is in Livingston Parish, these trips must use arterial roads, including U.S. Highway 190 and Interstate 12, often for very short distances.

The importance of a complete network of roads

For local traffic, with multiple local destinations, a large number of small roads carry more traffic than a small number of wide roads.

In fact, in most places that have developed as much as Livingston Parish is projected to grow, and that have good traffic flow, there is usually also good connectivity—multiple alternate routes that form a grid. In sizing the optimum grid, traffic engineers often use these rules of thumb:

- **Arterials** = 1-mile spacing.
- **Collectors** = ¼-mile grid.
- **Local roads** = 330- to 530-foot blocks.

This theoretical grid is shown in Figure 47. (The road layout of several subdivisions in Livingston Parish are inserted in the west edge of the illustration to convey the scale of the grid). Obviously, any theoretical grid must be adapted to local conditions.

1 *Personal communication, April 2012.*

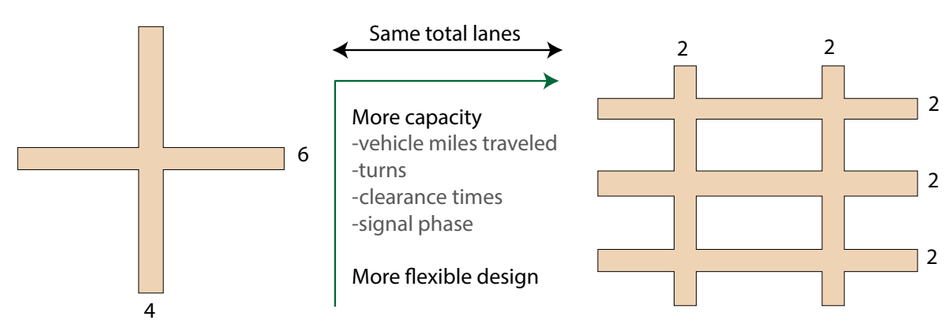


Figure 46: A grid-like system can have smaller, lower speed, and safer streets, can cost less, and yet can carry more traffic than less connected arterial-only corridors

The benefit of a grid-like system is that overall, the road system can have smaller, lower speed, and safer streets, can cost less, and yet can carry more traffic than less connected arterial-only corridors. A more connected grid system can remove local traffic from arterial corridors, which can significantly reduce congestion and accidents during peak travel periods.

With a more complete grid system, with multiple alternate routes, many collector roads will not have to be widened to four-lane sections.

The extent of the existing arterial grid in the Parish

The actual grid of arterial/collector roads in a portion of western Livingston Parish is shown in Figure 48. This illustration shows:

- **A very incomplete grid at the arterial level.**
- **Most of it is oriented east-west.**
- **There is not no true grid of collector roads, only a series of north-south routes made up of local farm-to-market roads whose capacity is limited by frequent driveways.**

Most of the shopping and business uses in the Parish are in the urbanized corridor paralleling Interstate 12. Since the Arterial grid is missing in much of the developed area of the Parish and oriented primarily east-west to get to the Interstate 12 corridor, local traffic must go significantly out of its way—or use the north-south farm-to-market roads. Once they get to the corridor, the east-west options are still limited to either U.S. Highway 190 or Interstate 12.

If the Parish continues to develop with the current road system

- **The north-south farm-to-market roads will continue to fill in with development and curb cuts for driveways, further reducing capacity.**
- **Cul-de-sac development of the interior of the "blocks" will eliminate future opportunities for completing key "missing links" in the grid that could help spread out traffic.**

The net result will be continued, increasing congestion.

Options for increasing connectivity

The alternatives are:

A. Widen the existing roads and add key missing links (see Figure 49).

B. Create a more complete grid of roads (see Figure 50).

A. Widening existing roads

Figure 49 shows a portion of the parish with existing major Parish roadways widened along with adding several, very general new arterial corridors to fill in the "missing links".

A cursory evaluation reveals that, if most of the key arterial roads in this area were widened, the additional right-of-way needed would intercept approximately 2,000 structures.

B. Creating a more complete arterial grid

In significant portions of the western Parish, there are still undeveloped areas that would allow new arterial roads to be constructed. This approach would still require significant acquisition of rights-of-way and installation of new infrastructure, but would impact far fewer existing structures and utilities (see Figure 50). In the Implementation section the CMP recommends a hybrid of Option A and B (the Major Streets Plan). The actual alignment of roads will require significant, detailed analysis in order to more fully understand the cost implications, environmental constraints, etc.

There is some urgency to making this decision to allow for the Parish and/or DOTD to begin reserving rights-of-way before development precludes them.

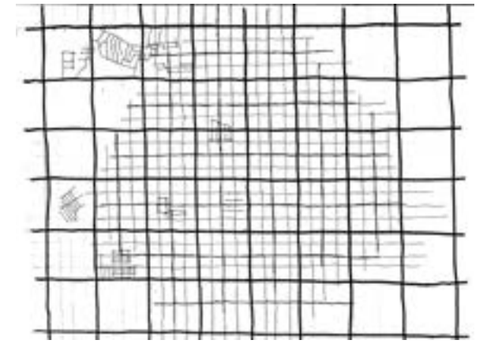


Figure 47: A hypothetical 1-mile arterial grid (bold lines), with smaller ¼-mile grid for collectors. Note: actual grid of several subdivisions shown for scale

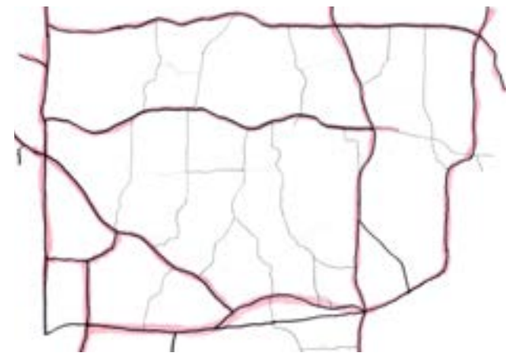


Figure 48: The actual grid of arterial and collector roads in the Denham Springs/Walker area

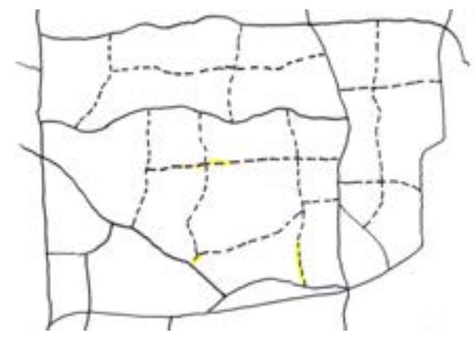


Figure 49: Major Streets - Option A. Dashed lines indicate new/widened roadways to form a more complete arterial grid. Yellow segments indicate sections where existing structures would be impacted by widening

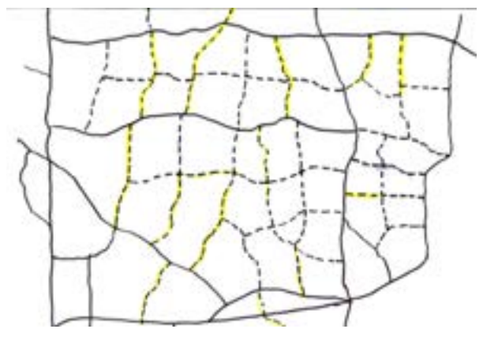


Figure 50: Major Streets - Option B. Create new arterial and collector roads in vacant areas between existing development. Note: the yellow areas of impact to existing structure are much less

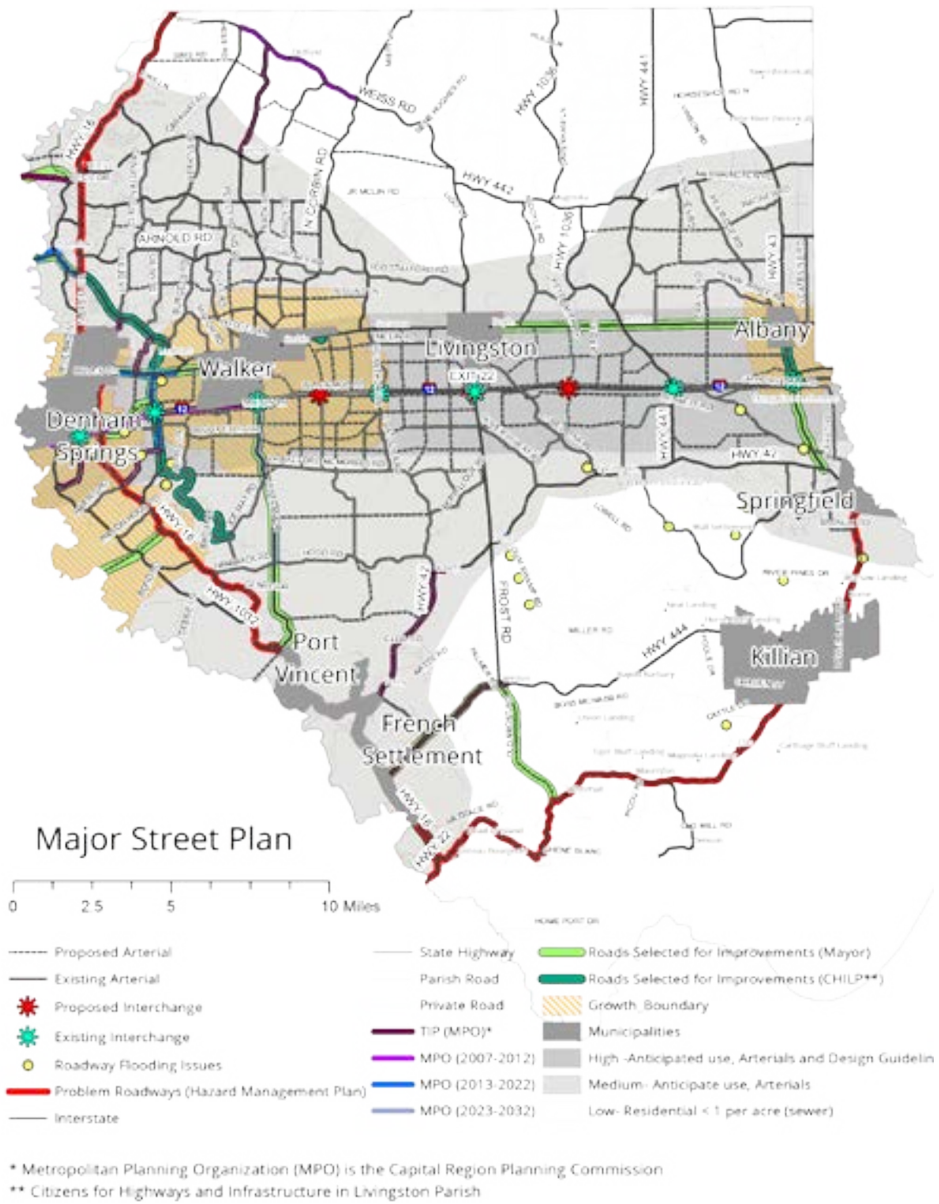


Figure 51: Major Street Plan
See end of plan for full page version of map

The proposed Major Street Plan

Figure 51 is the recommended, initial Major Street Plan (MSP) for the Parish. It indicates:

1. The general location of a modified grid of existing and proposed arterial corridors. The proposed system includes a frontage road along both sides of Interstate 12 to encourage buildings that front toward the interstate (see chapter 2, Land Use).
2. Proposed future Interstate 12 interchanges.
3. Higher priority improvements as identified by:
    i. Parish mayors.
    ii. CHILP.
    iii. CPRC.
4. Problem roadways (as identified in the Parish Hazard Management Plan).
5. Roadway flooding issues (as identified by the public in the CMP process).

Locations of corridors for future roads

The MSP proposes general locations for future arterial roads only in areas where high and medium growth is anticipated.

The locations shown attempt to avoid wetlands in so far as the wetland data permits. Since the wetland dataset available is not highly accurate for individual wetlands, a more detailed study will be required to refine the road corridors or alignments.

Therefore, the locations of the proposed future roads are intended to be "desire lines", not precise alignments. They must be verified by detailed engineering analysis, wetland verification, and should be further adjusted to fit well with future development.

Most importantly, these alignments should be preserved from other types of development until suitable replacement alignments can be reserved. As required by the current Parish Code, future development should be consistent with the MSP. This means that if streets are proposed that vary from the MSP, the MSP should be amended before approving the modified layout.

How much servitude width should be reserved?

For a typical arterial it is recommended that initially a servitude of 142 feet be reserved, until revised by future study (see Figure 52). This servitude width preserves the potential for the following roadway components:

60'	up to 5 lanes of roadway or four lanes with a median (12' lanes, 14' median)
16'	two 5' to 7' shoulders (including future curb-and-gutter).
30'	two 15' swales (or one 40' canal) for storm water drainage ways .
14'	two 7' servitudes for utilities (which also functions as a setback for sidewalks if developed).
10'	two 5' sidewalks (if desired).
2'	two 1' construction setbacks to the servitude line.

If, and where, it is desired to accommodate the potential for a roundabout the initial servitude should be 180 feet at intersections, until revised by future study.

Fiscal Realities the Cost of Maintaining Roads

State highway construction and widening projects are funded usually with a mix of 20 percent state funds and 80 percent federal funds.

In recent years, in Louisiana like almost all states the costs of operating and maintaining highways have grown faster than state transportation budgets. As a result, an increasing proportion of the state transportation program must be devoted to care and upkeep of existing highways rather than building new ones.

Other non-transportation ways to reduce congestion

1. Attract major employment and stores

Much of the commuting traffic in Livingston Parish is to the job and retail base in Baton Rouge and Ascension Parish. The Parish and the Livingston Parish Economic Development Council are working hard to attract major employers and stores to Livingston Parish, but it is a long-term project and both employers and stores tend to follow development rather than precede it. So, we still need to grow and solve our traffic problems while we work on economic development.

2. Allow/encourage more complete communities

Commuting actually represents only 20 percent or less of daily traffic.

Most daily household travel is for other purposes – school trips, errands, shopping, recreation, etc. Where residential areas are separated from schools, shopping, parks and other destinations, people must drive long distances, often in heavy traffic, for routine daily activities.

One long-range strategy to overcome congestion is to enable people to make shorter trips for many needs. This can be accomplished by allowing new development to include a mix of uses (homes, shops, employment) in the same development – like our older communities had. This removes local traffic from congested arterials. It also reduces travel time, lowering household costs, and improving quality of life.

Allowing / encouraging more "complete" communities also provides more locations for shopping and business diversifying the tax base and increasing local employment.

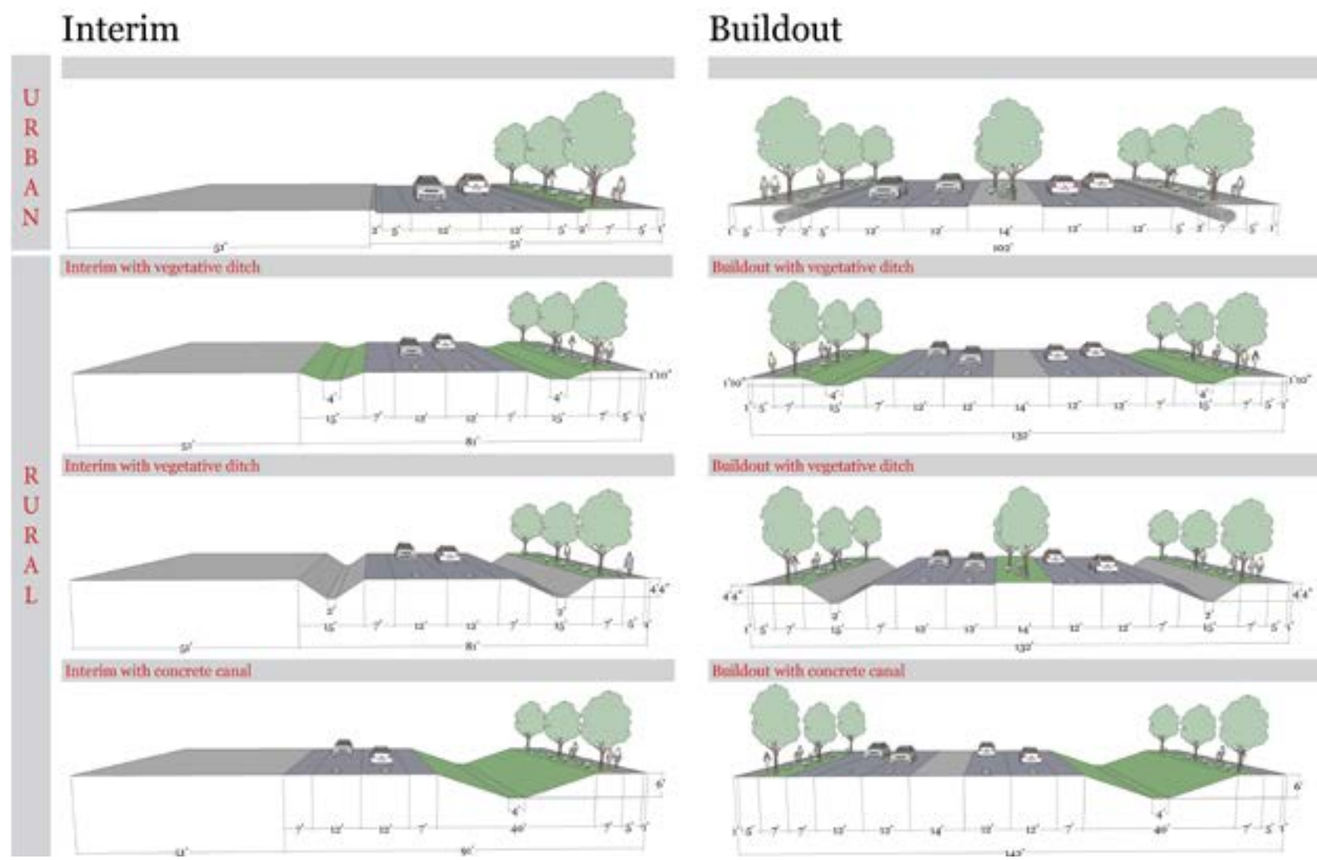


Figure 52: Livingston Parish arterial dimensional requirements for phased development of Livingston Parish major roadways. This analysis suggests that in lieu of specific roadway plans the Parish should reserve servitudes of 142'

Figure 53: A typical Roundabout layout suggests reserving a servitude width of at least 180!

How Much Does it Cost to Maintain a Road?

Road costs include:

- Crack sealing (must be done at least every 5 years)
- Striping/chip seal (must be done at least every 10 years)
- Pothole/overlay (must be done at least every 20 years)

Over a 20-year lifespan that equals

- $300,000/mile or $15,000/mile/year average

Today, the Parish has over 800 mile of roads, which requires $12m for maintenance, but recent budgets indicate the Parish spends much less, for example in 2010 the Parish spent just $6m.

At the same time, increased gas mileage and gas costs have tended to reduce travel nationwide, and with the consequent reductions in the gas tax proceeds, the funding of the federal transportation program has been shrinking and will continue to do so for some years.

So, it is probable that federal transportation funding for Livingston Parish will be greatly reduced for the foreseeable future.

Livingston Parish currently is responsible to maintain over 800 miles of roadways. This means that the Parish should be budgeting approximately $12 million per year for road maintenance (see text box "How Much Does it cost to Maintain a Road?"). In recent years, faced with other compelling priorities, the Parish has been able to budget far less than that.

This suggests that the Parish needs to:

1. **Find additional funding sources to finance future road needs.**
2. **Be very selective about the roads for which it accepts maintenance responsibilities in the future.**

Implementation

Strategies

1. Reducing congestion is increasingly necessary to support growth in unincorporated areas of the Parish, even at low-density suburban levels. A key strategy to reducing congestion is to provide efficient alternate routes through the Parish— a more complete network of arterial and collector roads.
2. The Major Street Plan (MSP) identifies very general corridors for future roads (to ensure that they are not lost to interim development). This element of the CMP will serve as the initial Major Street Plan as identified in the Livingston Parish code. Upon completion of the CMP. The Parish needs to commission a more detailed Transportation Plan (an inventory of roadway assets, conditions, future transportation needs, future road alignments, etc.) to refine the MSP and guide the development of future Parish (and sate) roads.
3. To further reduce congestion, as well to provide better emergency access and evacuation, enforce existing regulations regarding road connectivity between new subdivisions (allow residents to take alternate, more direct routes to get to collectors and arterials).
4. Fund maintenance at a sustainable level, confirm by a detailed analysis in the Transportation Plan.
5. Require that collector roads (or equivalent road impact fees) be provided by future major developments.
6. Be very selective about accepting additions to the Parish road system such as selecting only roadways that meet existing Parish standards of more than 1,000 feet, has five or more dwelling units, etc.
7. Until Action 3 is completed consider the following as existing road priorities:
    i. Extend Cook Road to Juban Road.
    ii. Extend Hooper Road (Louisiana Highway 408) from Eastern Baton Rouge Parish crossing of the Amite and connecting into Louisiana Highway 16 and Springfield Road.
    iii. Extend Frost Road south from intersection of Louisiana Highway 444 to Louisiana Highway 22.
    iv. Extend Walker South Road (Louisiana Highway 447) to Louisiana Highway 42 in Ascension Parish.
    v. Expand the overpass at Interstate 12 and South Walker Road (Louisiana Highway 447).
    vi. Widen US 190 (Florida Blvd) from Denham Springs to Louisiana Highway 449 past Walker and from Livingston to Albany.
    vii. A new interchange at Interstate 12/Pete's Highway.
    viii. Widen Louisiana Highway 64 from Louisiana Highway 16 to Magnolia Bridge.

Figure 54: Roadway congestion is a major challenge for commuters as well as industry.

The following list of roadways is for future prioritization:

- Brown Road.
- Eden Church Road.
- Extend Lockhart from Cockerham to Burgess Road.
- Extend Juban Rd to Lockhart.
- Louisiana Highway 444 from Louisiana Highway 16 to Frost Road.
- Louisiana Highway 447 South of Interstate 12 to Louisiana Highway 16.
- Louisiana Highway 447 North to Corbin Ave.
- Louisiana Highway 447 Interstate 12 overpass at Walker.
- Juban Road from Interstate 12 to Louisiana Highway 190.
- Juban South of Interstate 12 to Brown Road.
- Port Vincent Bridge replacement and widening.
- Satsuma Interstate 12 overpass.
- Tate Road from Pete's Highway to Juban.
- Tiger Bend Road.
- Turning lanes at U.S. Highway 190 and Louisiana Highway 1029.
- Turning lanes at US Highway 190 and Louisiana Highway 449.
- Upgrade Louisiana Highway16 (various locations at intersection with Walker South Road and from the northern border of French Settlement south to Louisiana Highway 22).
- Widen Louisiana Highway 43 (from interstate north to Steward Lane).
- Widen Louisiana Highway 43 (from Interstate 12 south to Louisiana Highway 42).

Actions

Short-term: (1-2 years)

1. Adopt the CMP Major Street Plan on an interim basis.
2. Notify the public and begin following the Parish Code with regard to requiring future developments to be consistent with the Major Street Plan.
3. With public works, establish 5 year overall road priorities in the Parish. The list should be updated yearly using safety, congestion, and maintenance costs as criteria. Roads that have a funding source (Federal, State, or Local) should be considered top priority.

Mid-term: (3-5 years)

4. Commission a detailed Parish Transportation Master Plan, including:
    i. An update of the Major Street Plan to:
        a. Avoid wetlands where possible.
        b. Refine interchange locations.
        c. Update the priories for new Parish roads.
    ii. Establish servitude ownership and widths for all Parish roadways.
    iii. Identify which Parish roadways are consistent with Parish Code criteria for maintenance by the Parish.
    iv. Investigate roadway flooding issues, problem roadways, and propose remedies.

Ongoing:

5. Implement Parish Code requirement relating to:
    a. Major Street Plan.
    b. Connectivity of future subdivisions.

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Envision Livingston 6

Drainage

Over half of the unincorporated Parish is within the 100-year floodplain

Livingston Parish is relatively flat.

From approximately sea level in the southern portion of the Parish, the land rises very gently to slightly more than 40 feet above sea level at Interstate 12 and 100 feet above sea level at the north end of the Parish. As a result, runoff from rainstorms drains very slowly towards the south-southeast at about 3 feet per mile until it reaches sea level at Lake Maurepas. This very gentle gradient makes runoff slow, causing water to back up and flood, but it also means that flooding occurs with relatively low energy and poses less threat to downstream areas.

However, downstream areas are subject to tidal flux and when heavy rainfall events are coupled with high tides or tidal surges, these areas have an extremely high probability of flooding. This flooding is exacerbated when driven by the high winds that accompany hurricanes.

Over half of the unincorporated Parish is considered to be within a 100-year floodplain[1]. The Federal Emergency Management Agency (FEMA) has recently updated the floodplain maps of the Parish and increased the designated floodplains slightly in a number of areas.

Significantly increased development in the last decade has likely contributed to increases in the frequency of backwater flooding in the Amite drainage Sub-basin around areas such as Denham Springs, Watson, Walker, and between 4-H Club Road and Highway 16.

With the recent experience of Hurricane Isaac (2012) and other rainfall flooding events almost as significant, there is growing recognition of the need to increase system capacity, which is especially undersized in the highly developed areas in the western portion of the Parish.

The Drainage Network of Livingston Parish

Stormwater drainage in Livingston Parish consists of a network of natural bayous and lakes as well as man-made swales, ditches, and lateral canals.

There is no general subsurface storm sewer system. For the most part, roadside drainage ditches are not lined with concrete and many are deeply eroded. Parish subdivision regulations have slide slope requirements and stabilization measures, but many ditches were constructed prior to these ordinances.

Man-made detention ponds have been required for most new site development since the subdivision ordinances were approved in 2001. No major retention areas (serving a broad area) have been constructed, but some natural depressions and wetlands are used to retain storm water, particularly in the heavily vegetated areas and wetlands in the northern half of the Parish. The wetlands in the south part of the Parish are influenced by tides and subject to storm surge during hurricane season, but otherwise function relatively well to retain storm runoff storage most of the year.

A Snapshot of Flooding Events 1973 to 2013

- April 1973 – 6" of rain. The Amite River spilled over its banks and over 1,800 homes and 70 businesses were flooded.
- January 1977 – Hard rain caused extensive flooding. Farmers were hit hard.
- May 1977 – Many rivers in the Parish overflowed their banks.
- May 1979 – Over 10" of rain. Over 400 people evacuated to shelters. Flash flooding of streams was common.
- April 1983 – Over 1,300 homes were destroyed. Over 5,000 people evacuated. Approximately 170 miles of roads were flooded. Water levels were the highest in 90 years.
- April 1991 – 10"-15" of rain fell in two days and caused extensive damage. Numerous homes were flooded.
- February 1993 – Over 12" of rain. Many homes sustained flood damage. Many roads and businesses were closed.
- June 2001 – Over 600 homes and businesses were flooded. The Town of Livingston recorded over 18" in four days. The Amite River crested at 38.24', the fourth worst flood since 1961. 75 percent of the roads in Port Vincent flooded. Damage estimated at $8.9 million.
- 2005 - Rita, a storm surge event, caused over 432 million in statewide damages.
- August 2012 – Isaac severe weather event.

1 *Areas with a statistical probability of flooding of 1 percent in any given year*

Figure 55: Three hydrological sub-basins in the Parish. Amite, Tickfaw, and Lake Maurepas

Sub-basins and watersheds

Watersheds are broad valleys (often barely perceptible in flat areas) that convey water to creeks and bayous. Collections of watersheds that flow together to a common river or lake are called sub-basins. Figure 55 shows the portions of three hydrological sub-basins in the Parish.

Figure 56 shows the watersheds within the sub-basins. The Amite-Lake Maurepas watershed covers the western edge of the Parish, crosses into Ascension Parish, and crosses back into Livingston north of Lake Maurepas, creating two segments within the Parish boundary.

Buildings and paving in the watersheds

Hard surfaces, such as buildings, roads, and parking lots prevent rainfall from absorbing into the soil, and increase the speed of runoff. Thus, development increases the need for man-made structures to hold runoff back so as not to exceed the capacity of the natural drainage ways—otherwise increased flooding results. As shown on Figure 56 the watersheds in the Parish contain varying degrees of development.

Management of the drainage systems

The drainage systems in the Parish are constructed and maintained by several different entities.

Roadside swales and ditches:

- Along state roads (between 1200 and 1600 linear miles) are managed by the state.
- Along municipal streets are managed by the municipality.
- Along Parish roads (between 1350 and 1800 linear miles) are managed by the Parish Department of Public Works.

Natural drainage features are maintained by the governing gravity drainage district, if active, or the Parish Department of Public Works in areas where the drainage district is not active.

Subdivision laterals are constructed by the developer, then after an 18-month maintenance period are turned over to the Parish or to the appropriate drainage authority, if there is one.

Detention ponds are the responsibility of the developer for 18 months, then are either turned over to the homeowners association, a site occupant, or remain the responsibility of the developer.

Gravity drainage districts

Five gravity drainage districts (GDDs) have been created to operate and maintain public drainage works in the Parish. The GDD boundaries are shown on Figure 55.

Three GDDs (#1, 2, and 5) are funded by taxing authority; two (6 and 7) remain unfunded.

Each GDD is a political subdivision of the Parish and is governed by a board of five commissioners appointed by the Parish Council.

Although only about one-fifth of the land area of the Parish is covered by a funded GDD, directors of the GDDs and the Parish personnel report that the system works relatively well. The three active GDDs (1, 2, and 5) and the Parish Department of Public Works cooperate on an informal basis and share resources and information as needed. Figure 57 (on the following page) illustrates the jurisdiction of each active GDD; the area not covered by a GDD is managed by the Parish.

Inter-district issues such as drainage conveyances (creeks, bayous) that cross GDD boundaries are co-managed among the districts and Parish. The GDDs do not feel they have issues with maintenance of the conveyances outside of their jurisdictions.

Funding of drainage improvements and maintenance

The funded GDDs generally levy a ½-cent sales tax, with the tax renewed by public vote every 10 years. Some GDDs also collect a property tax, which in some districts is permanent and does not require renewal. Taxes dedicated to a GDD do not revert to the Parish general fund.

State drainage operation and maintenance is funded through the Louisiana Department of Transportation and Development operations budget. Parish drainage is funded by the Parish general fund.

While GDD, municipal, and Parish revenues are expected to increase with sales tax growth in the near term, the Parish and municipal general fund budgets have many interests competing for funding. Only property tax millages and GDD sales taxes are dedicated to drainage. The state budget for drainage is likely to drop as gasoline tax revenues decline.

Drainage planning and coordination

In Livingston Parish, each drainage jurisdiction manages its own inventory and mapping of drainage systems, as resources allow. Coordination among the various drainage authorities is informal; responses to blockages and other issues are often undertaken by the party with the best available resources, even when the problem occurs in areas outside their jurisdiction.

There is no comprehensive inventory or mapping of drainage features in the Parish, but the regulations reference a master plan with the words "until such time as a Master Drainage Plan is adopted by the Parish Council." [2]

Parish development regulations regarding drainage

In the unincorporated areas of the Parish, a developer of a subdivision or roadway is required to provide a drainage plan as part of an approved site or construction plan. There is no long-range or master drainage plan for how the overall system will keep pace with development, although reference is made to a Master Drainage Plan in the Parish code.

Detention basins are not explicitly required by Parish regulations, but are usually the preferred choice for developers to meet the requirement to minimize downstream runoff. When used, detention basins are required to detain enough stormwater to increase of off-site volume by not more than 10 percent. Parish regulations allow the developer/applicant to propose downstream improvements as another measure for minimizing the drainage impacts of new development, subject to approval by the review engineer.

Drainage study requirements and exceptions

A drainage impact study is required for each site proposed for development. Parish ordinances stipulate that the study should provide recommendations for actions that will prevent adverse impacts to surrounding properties; however, no specific net impact limit is stipulated. The informal "rule of thumb" policy is to maintain the same volume of pre-development flow off-site after the development has been completed.

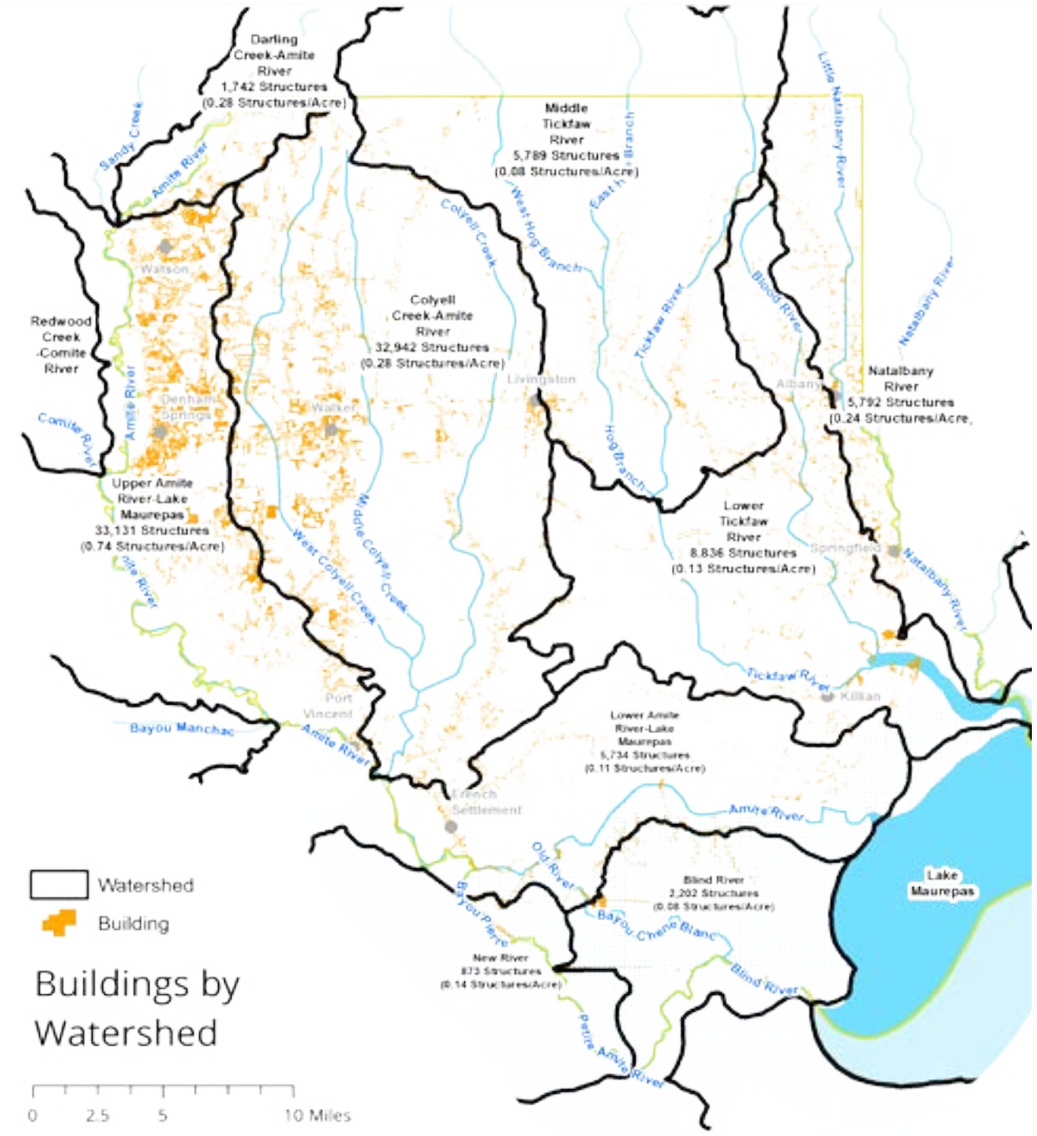

Figure 56: Buildings by watershed

2 *Livingston Parish Code SEC. 13-57.*

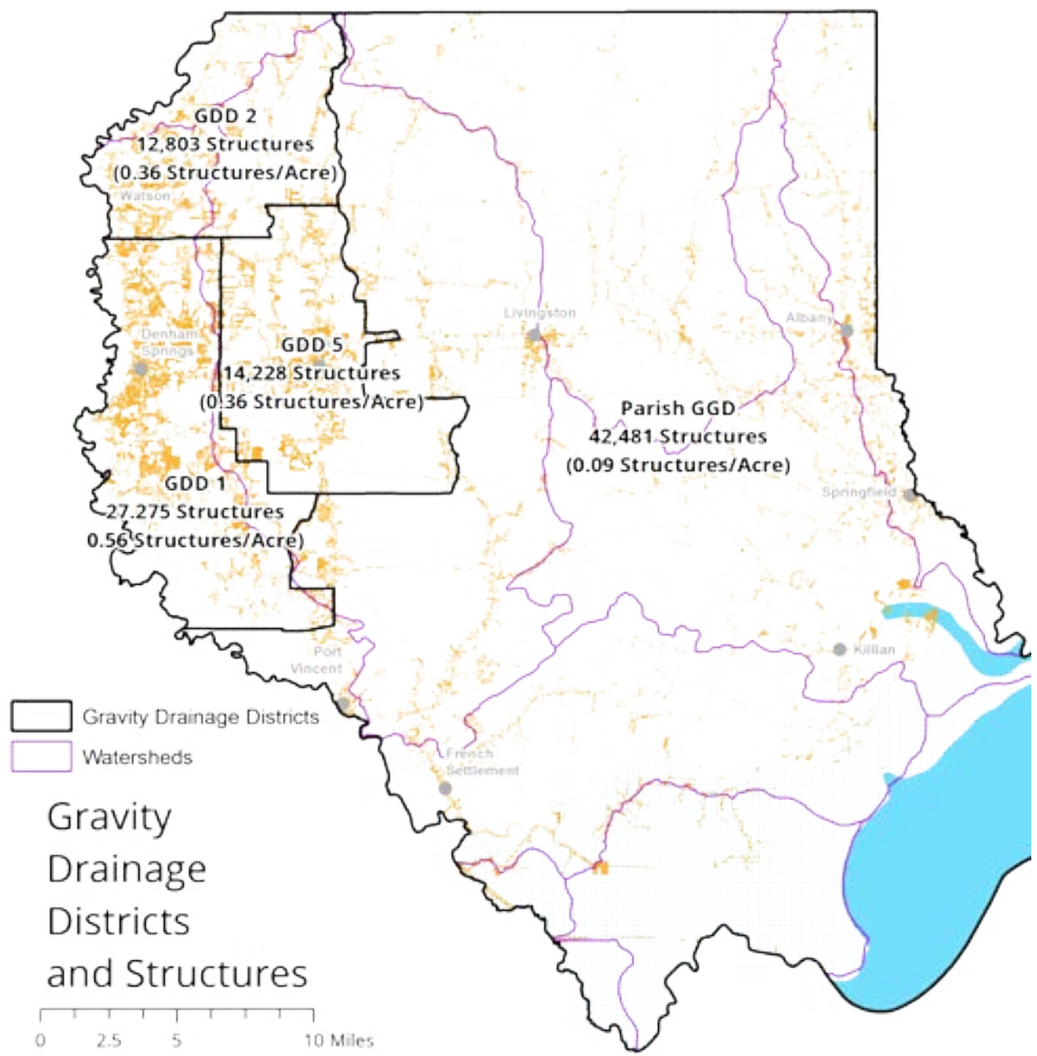

Figure 57: Jurisdiction of each active gravity drainage district

There are several exceptions to the requirement for a drainage impact study. A drainage impact study may not be required if a proposed development:

- Creates no more than 20 percent impervious surface.
- Results in an increase in impervious surface of no more than 10 percent.
- Results in no more than a 10 percent increase in peak discharge.
- Is already served by a network of public storm drainage facilities.

Servitudes and system management

According to Livingston Parish Code, drainage servitude width can vary from 15 feet (for storm sewers and swales) to greater than 50 feet, depending on functional needs. Local drainage districts may request modifications to facilitate future maintenance; the Parish review engineer may also allow variations based on sound engineering practices with the approval of the drainage district, where there is one.

Implementation

Strategies

1. Although the Parish drainage system functions relatively well under typical conditions, increasing development in the Parish is likely to challenge existing standards. The Parish needs to carefully evaluate the cumulative impacts of its current policies (e.g. excepting less than a 10 percent increase from a drainage plan).
2. As development increases, wetlands and natural retention and detention areas will be filled in requiring replacement with man-made features. Costs of construction, and wetlands permitting and mitigation are expected to continue to rise.
3. Servitudes platted and approved prior to recent regulations may not be wide enough to allow sufficient access for even current maintenance or width for future widening that may be needed. Retrofitting existing developments to meet the current standards is needed, but likely not a recoverable expense. Revenue sources need to be explored, including drainage taxes.
4. Parish or GDD liability may be significant for substandard or incomplete drainage features that were approved by the Parish and then transferred to the Gravity Drainage Districts. This needs to be addressed. Similarly, current inspection and approval practices remain informal, allowing for undocumented exceptions and variances from accepted standards.
5. The informal cooperative relationship that exists today among the various drainage authorities will be strained as more demands are placed upon fewer resources at the state and Parish levels. More formal policies and procedures may be needed.
6. Wetland permitting has become a time-consuming and expensive task for the drainage authorities, who need permits to clean canals and ditches and clear maintenance servitudes. A combined permit (similar to the “nationwide” wetland permits for roads) should be sought collectively.
7. Although a wetlands mitigation plan is required for preliminary plat approval for subdivisions with improvements, the regulation relies upon the developer to determine whether or not wetlands occur within the site. The magnitude of the Parish liabilities from a lack of wetlands permitting data and potential Section 404 violations needs to be assessed and avoided.
8. Because drainage management is governed by a variety of authorities, no one group appears to be an advocate for the pursuit of grant funding and implementation for drainage mitigation or planning. Cooperative action may be advantageous to all.

Actions

1. Schedule regular meetings of all drainage entities to formalize their cooperation and increase sharing of data, technology, and expertise.

   For example: Walker Office of Louisiana Department of Transportation and Development (LADOTD) completed a blanket Section 404 permit in 2010 for all its ditches in Livingston Parish. The permit manager for LADOTD is an expert in this kind of permitting and could provide guidance for other drainage authorities.

2. When considering creating or funding additional Gravity Drainage Districts (GDDs):

   a. Use the opportunity to align their boundaries with watershed boundaries.

   b. Focus resident approval on areas with most population and highest growth potential.

   For example: GDD No. 6 includes the Middle Tickfaw Watershed, a vast area of undeveloped forest that is sparsely populated with limited revenue sources. Drainage in this area is a lower priority than in the portion of the Natalbany River Watershed that includes Albany and Springfield, where a GDD would be sustainable and popular, particularly as new residents spillover from Tangipahoa Parish.

3. Create a Master Drainage Plan for the growth areas of the Parish.

   a. Form a coalition with GDDs, Parish and municipal Departments of Public Works, LADOTD maintenance office, and other agencies.

   For example: The Parish-wide GIS could include layers of natural drainage features and surface waters in the Parish. This map can be combined with the separate existing drainage maps (Alvin Fairburn Associates has the information), and the drainage map managed by LADOTD, to create a basemap of existing drainage features. (GDD and municipal data will have to be converted from database descriptions to GIS.) Funding for this project may be available through the United States Army Corps of Engineers GIS project.

   b. Seek grant funding utilizing the drainage basemap as the point of departure.

   For example: The directors of GDD Nos. 1, 2, and 5 have expressed an interest in developing a coordinated plan for their districts. Funding for a drainage mitigation plan was secured in 2009 from Federal Emergency Management Agency and Governor's Office of Homeland Security and Emergency Preparedness (OHSEP) for the Colyell Creek-Amite River Watershed, which includes GDD No. 5. A contractor was selected in 2012. However, the project contract had not been executed as of July 2012. This funding is part of a phased Hazard Mitigation Grant application awarded for a hydraulics and hydrology study, topographic survey, design preparation and permitting. If the engineering work produces a feasible project, the cost of the drainage improvements will be paid through a $1.5 billion federal appropriation for mitigation projects available to communities in accordance with Section 404 of the Stafford Act following Hurricanes Katrina and Rita.

4. Update Parish ordinances to require proof of a jurisdictional determination for any site being developed in the floodplain, or an affidavit that no wetlands are present within the site. If wetlands are present, require a copy of the Section 404 permit application, approved permit, as well as the executed mitigation contracts as a requirement for final approval. These data can then be compiled at the permitting office and mapped over the drainage basemap to determine what activities have been permitted and when the permit expires.

   For example: According to the subdivision procedures, the permitting of a subdivision with improvements follows a logical path from preliminary plat through final plat and bonding. This sequence is followed by an 18-month maintenance period before the developer is released from his bond. Section 404 permitting follows a similar course and can be sequenced with permit milestones as shown in the table below.

5. Require that final plats, drainage plans, jurisdictional determinations, and permit drawings be submitted in digital (ideally GIS) format so that the information can be captured in the Parish-wide GIS. If not submitted in GIS format, a small fee could be instituted to cover the cost of digitization.

6. Conduct an engineering evaluation of the cumulative impact of the10 percent thresholds exemptions from having to do a drainage study.

Development Permit		Section 404 Permit
Informal Discussion	↔	Pre-application meeting with USACE
Preliminary Plat	↔	Request for Jurisdictional Determination
Drainage Impact Study	↔	Section 404 Permit Application
Construction Plans	↔	Execution of Mitigation Contract
Final Plat and Bonding	↔	Permit Issued
Bond Cancellation	↔	Certification of Completion (Postcard)

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ENVISION LIVINGSTON 7

Domestic Water

The Southern Hills Aquifer system supplies high quality potable water to Livingston Parish

istockphoto/PaulTessier

7 Domestic Water

Water from the Southern Hills Aquifer system is delivered to Parish residents through a variety of entities.

Livingston Parish has high quality domestic water that is primarily obtained from the Southern Hills Aquifer system. That system extends beneath Livingston and East Baton Rouge Parishes.

Ward 2 Water District (W2WD) is a special district that was created in 1975 to improve water quality for the residents of Livingston Parish. W2WD maintains 14 water wells and serves the residents in the Watson, north Denham Springs, and north Walker areas.

The municipalities in the Parish operate their own domestic water systems. These municipalities typically service the residents within their boundaries and often extend services to unincorporated areas outside of their boundaries. These municipalities include:

- City of Denham Springs.
- City of Walker.
- Town of Livingston.
- Villages of Albany, Killian, and Port Vincent.

Privately-owned water companies also supply over 1.5 MGD to the more rural areas of the Parish where municipal systems do not service. They include:

- Diversion Water Company.
- French Settlement Water Company.
- Colyell Community Water Association.
- Fourth Ward Water Works.

Challenges

Growing water demand is outstripping capacities

The major Parish water entities currently supply a total of approximately 11.7 million gallons per day (MGD). With the projected growth in the Parish, the demand is expected to increase to 18.0 MGD by the year 2030.

According to an assessment[1] contracted by the U.S. Army Corps of Engineers (USACE), the water districts are currently pumping at or near their maximum capacity. As the population of Livingston Parish continues to grow, additional drinking water resources will be required.

With most of the growth occurring in the west and northwestern areas of the Parish, the City of Denham Springs, Ward 2 Water District, and the City of Walker will require the most significant improvements to meet the increase in demand.

Long-range water quality

Though it is not an immediate concern, salt water appears to be intruding into the aquifer as evidence by problems in East Baton Rouge Parish. The high volumes of water extracted from the aquifer have caused a drawdown in the levels of fresh water in the aquifer.

This in turn has allowed increased saline water to migrate into the aquifer from south to north. Although there is significantly less water withdrawal from the aquifer under Livingston Parish than Baton Rouge, and there is less concern for aquifer drawdown, with the projected growth of the Parish the situation should continue to be monitored.

The USACE report indicated that the Amite River also has the capability to provide water to the Parish, though quality would decrease and treatment and distribution costs would significantly increase.

Low water pressure in rural areas

Areas that are not served by public water suppliers, particularly in the southern areas of the Parish, often have low water pressure that does not meet fire standards. The lack of water pressure for fire protection is a public safety concern.

Salt Water Intrusion

Salt water intrusion is occurring in the Southern Hill Aquifer, particularly in the Baton Rouge area. Salt water intrusion is the result of pumping ground water, which creates hydraulic pressure and pulls salt water from natural reservoirs into the aquifer. Once salt water has intruded in an aquifer, purifying that water can become very expensive, a cost often passed on to residents. While currently only a problem in Baton Rouge, with projected growth, salt water intrusion in Livingston Parish must be monitored. Intrusion can occur at the surface following storm surges.

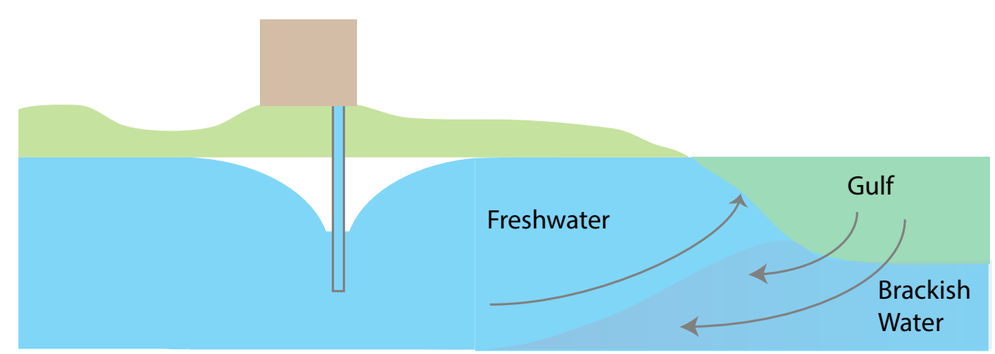

Figure 58: Salt water intrusion

1 *"Master Plan - Water and Wastewater System Improvement and Enhancement, 2007 for Livingston Parish", U.S. Army Corps of Engineers, Forte & Tablada, URS.*

Proposed Alternatives for Increased Water Supply

The 2007 USACE report evaluated several approaches for supplying additional domestic water and recommended Alternative 5 as the preferred alternative. It includes clustering services and extending service to Ascension Parish. Clustering would require construct smaller localized water wells, storage units, and distribution systems throughout the Parish and constructing a new 3 MGD well to connect and service areas of Ascension Parish.

One of The benefits to this alternative is the creation of a comprehensive domestic water system throughout the Parish. Another benefit is the potential revenue to the Parish from the sale of domestic water to Ascension Parish, which would help to fund improvements to the water system.

The primary challenges faced by this approach are:

1. The multiple agencies and private companies that must be involved will require a very high level of coordination and cooperation, including inter-governmental agreements, to connect existing systems into regional distribution systems that cross multiple municipal boundaries.
2. The cost of implementation will be far greater than the Parish has heretofore faced for domestic water. The USACE-recommended plan had a construction cost estimate of $36 million (estimated in 2005). Livingston Parish residents must consider the possibilities of passing a tax or bond measure to provide domestic water. Grants and low interest loans could also be sought to supplement revenue sources for the water improvements.

Implementation

Strategies

1. In the recommended approach, Livingston Parish is the primary agency responsible for implementation. Duties include:
    - The establishment of a new Parish-wide regional water district.
    - Development and execution of agreements with existing private and municipal systems to combine services.
    - Construction of new infrastructure.
    - Operations and maintenance.
2. Ward 2 Water District has the trained personnel to operate and maintain water treatment facilities and could take on the role as the Parish-wide water service provider.
3. The Parish could potentially benefit from the re-use of reclaimed water from the Livingston Parish School District treatment system to reduce the cost of water in landscaping and industrial applications and provide a revenue source to the Parish.
4. Consider augmenting the informal cooperation between sewer and water systems regarding fee collection, with a more formal combined structure that will assure a high level of fee collection to fund the water and sewer systems.

Actions

1. Retain an engineer to update and confirm the findings of the 2007 USACE report with regard to domestic water supply and future demand.
2. Convene a "summit meeting" of the Livingston Parish water providers to:
    a. Discuss the findings and implications of the USACE report (as confirmed above).
    b. Form a working group to develop recommendations regarding cooperation and eventual implementation of a regional wastewater including the combination of services with domestic water system.

istockphoto/TSnowImages

Envision Livingston 8

Emergency Preparation and Hazard Mitigation

Flooding, hurricanes, tornadoes, and wildfire are the most prevalent hazards that confront Livingston Parish.

In 2011, Livingston Parish completed a Hazard Mitigation Plan Update (HMPU)

that was adopted by the Parish and most of the municipalities in the Parish. This section of the Comprehensive Master Plan provides an overview of the HMPU as a context for making decisions about land use and infrastructure.

Challenges Facing the Parish

Flooding, hurricanes, tornadoes, and wildfire are the most prevalent hazards that confront Livingston Parish. The two primary damages of these events are associated with flood and wind damage.

Flood damage

Even though the Parish is at the northern edge of typical hurricane impacts, it has a history of damage linked to hurricanes and tropical storms:

- Ten major hurricane events traced back to 1960 have caused great damage to the Parish.
- In that period ten other floods caused major damage.

Flooding sufficient to cause significant damage can be caused by:

- **Storm surge** is caused by southerly winds and high tides that rise over and through bayous, canals, and marshlands. According to the National Oceanic and Atmospheric Administration, the most damaging (dollar amount) storm surge flood event experienced in Livingston Parish was Hurricane Rita in 2005 with statewide damages estimated at $432 million.
- **Backwater flooding** is caused by a restriction or block of downstream flow. It usually occurs as heavy rainfall event coupled with a swollen river, canal, or bayou, or marsh that hinders drainage outflow (usually in the same areas susceptible to storm surge).
- **Riverine flooding** is a result of rising water in the Tickfaw and Amite Rivers associated with non-coastal sources of rainfall.
- **Storm water flooding** is a result of direct rainfall in a short period of time. This type of flooding occurs frequently in the Parish.

The entire planning area of the Parish is vulnerable to some type of flooding. According to NOAA, historical flood events from 1993 to 2008 caused $459 billion in property damage.

Wind damage

With its central location in the Gulf of Mexico, Louisiana seems to experience a high percentage of hurricanes. Even though Livingston Parish is inland, and doesn't receive the brunt of most storms, it is vulnerable.

From 1965 to 2009 hurricanes that reached Livingston Parish resulted in total damages estimated at $240 billion.

The Parish tornado history is less significant, with 21 tornadoes from 1965 to 2009, resulting in $3.7 million damages.

Other challenges

- Only a few main roads exist to reach the areas of French Settlement, Port Vincent, and Killian. For example, a fire company in Holden has a difficult time providing assistance in Killian since there is no direct route between the two communities.
- Several roads in the southern portion of the Parish are known to flood, including LA 22 and LA 16.
- The Southeastern Louisiana Evacuation Plan does not adequately consider traffic from Livingston Parish. The plan gives interstate priority to evacuation traffic coming from the New Orleans Metropolitan Area.

Hurricane "Alley"?

From 1963 Livingston Parish has experienced the following 'official' hurricanes:

- Betsy 1965
- Juan 1985
- Andrew 1992
- George 1998
- Allison 2001 (tropical storm)
- Isidore 2002 (tropical storm)
- Lili 2002
- Ivan 2004
- Katrina 2005
- Rita 2005
- Gustav 2008
- Ike 2009
- Isaac 2012

Figure 59: Damage from Katrina, 2005

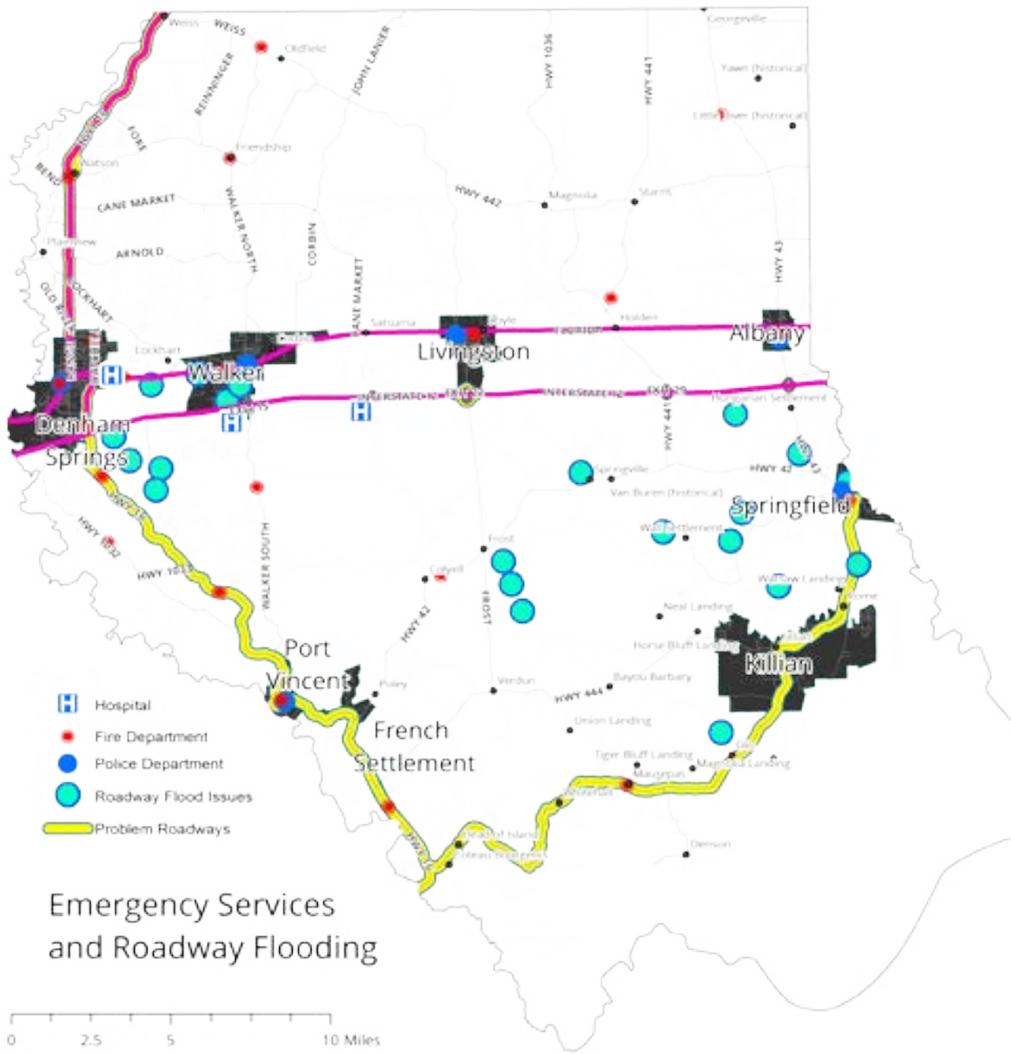

Figure 60: Emergency services and road problems

- There are buildings that flood on a regular basis-known as Repetitive Loss and Severe Repetitive Loss buildings-due to continued construction in known floodplains (below flood elevation).
- Due to population growth in the Parish, the 911 call center has experienced a growth of 225,000 calls in 2004 to over 400,000 today. The call center has not seen a proportional growth in staff.

Implementation

Hazard Mitigation Plan goals and actions are incorporated as part of this plan.

Flooding is one of the main threats to life and property in the Parish. In the 2011 HMPU, the Parish and its municipalities established goals and an action plan to achieve them. The goals are:

1. (**Goal 1**:) Identify and pursue preventative measures that will reduce future damages from hazards.
2. (**Goal 2**:) Enhance public awareness and understanding of disaster preparedness.
3. (**Goal 3**:) Reduce repetitive flood losses.
4. (**Goal 4**:) Facilitate sound development in the Parish and municipalities to reduce or eliminate the potential impacts of hazards.

Actions

The key actions for the unincorporated areas of the Parish that relate to land use decisions are:

1. **(Action 1.4.1**:) Upgrade drainage ways to better carry runoff.
2. **(Action 1.4.2**:) Increase the capacity of stormwater detention areas.
3. **(Action 3.1.1**:) Elevate, acquire or reconstruct all Repetitive Loss and Severe Repetitive Loss structures.
4. **(Action 3.2.1**:) Ensure that all municipalities and the Parish work together to produce a cohesive drainage plan.
5. **(Action 4.1.1**:) Enforce building codes to ensure that future development does not increase hazard losses.
6. **(Action 4.1.2**:) Guide future development away from hazard areas using zoning regulations.
7. **(Action 4.2.1**:) Participate in programs at the state and federal levels regarding environmental enhancement and conservation.

These goals and actions are also addressed in various ways in other sections of this Comprehensive Master Plan.

Additional actions

From public and technical input during the Comprehensive Master Plan, the following additional recommendations are proposed:

8. Identify critical corridors that are essential to emergency response vehicles when trying to reach the southern portion of the Parish and those used in evacuation.
9. Evaluate the road (roadbed, drainage infrastructure) for resilience in hazard events.
10. Develop strategies to improve problem roadways. This could include a widening for essential routes and/or elevating any critical roads that are known to flood, either by fill or structure.
11. Give a high priority to new roads that would provide emergency assistance and improve evacuation traffic flow. One suggestion is extending Old Frost Road to LA 22. An existing cut and ROW (originally built for a railroad) already exists.

Envision Livingston 9
Coastal Management

Coastal programs that affect Livingston Parish development and address local risk include:

1. Louisiana's Comprehensive Master Plan for a Sustainable Coast.

2. The Coastal Zone Management Program.

3. The Coastal Non-point Management Program.

9 Coastal Management

Though Livingston Parish is not located on the coast, tidal inundation often reaches the Parish and water from the Parish affects the coast of Louisiana.

There are a variety of programs related to coastal protection and management that impact the Parish[1]. This chapter provides a 'snapshot' of these programs including their purposes, highlights as they apply to the Parish, potential impact on the Parish (relating to growth and development), and actions the Parish should take (such as a reduction of flooding risk and expediting of permits).

Several caveats are to be noted:

- These programs change over time (e.g. as recently as 2012 the coastal zone boundary was redrawn and a significant portion of the Parish).
- They involve cooperation multiple-agency (Louisiana Department of Environmental Quality, U.S. Environmental Protection Agency, the National Oceanic and Atmospheric Administration, the Louisiana Department of Natural Resources, etc.).
- Program funding depends on authorization from the federal government. While many are currently un-funded, the Coastal Protection and Restoration Authority (CPRA) projects that more funding will be available in a few years.
- The actions recommended in this chapter are intended to increase Parish control and increase the likelihood that the Parish will benefit from these programs.
- The programs primarily focus on the preservation and restoration of wetlands. They include: regulation (i.e. permitting), technical assistance, and construction to restore coastal resources. They also include funding to reduce risk associated with inundation.

Coastal programs that have a direct impact on growth and development in Livingston Parish include:

1. Louisiana's Comprehensive Master Plan for a Sustainable Coast.
2. The Coastal Zone Management Program.
3. The Coastal Non-point Management Program.

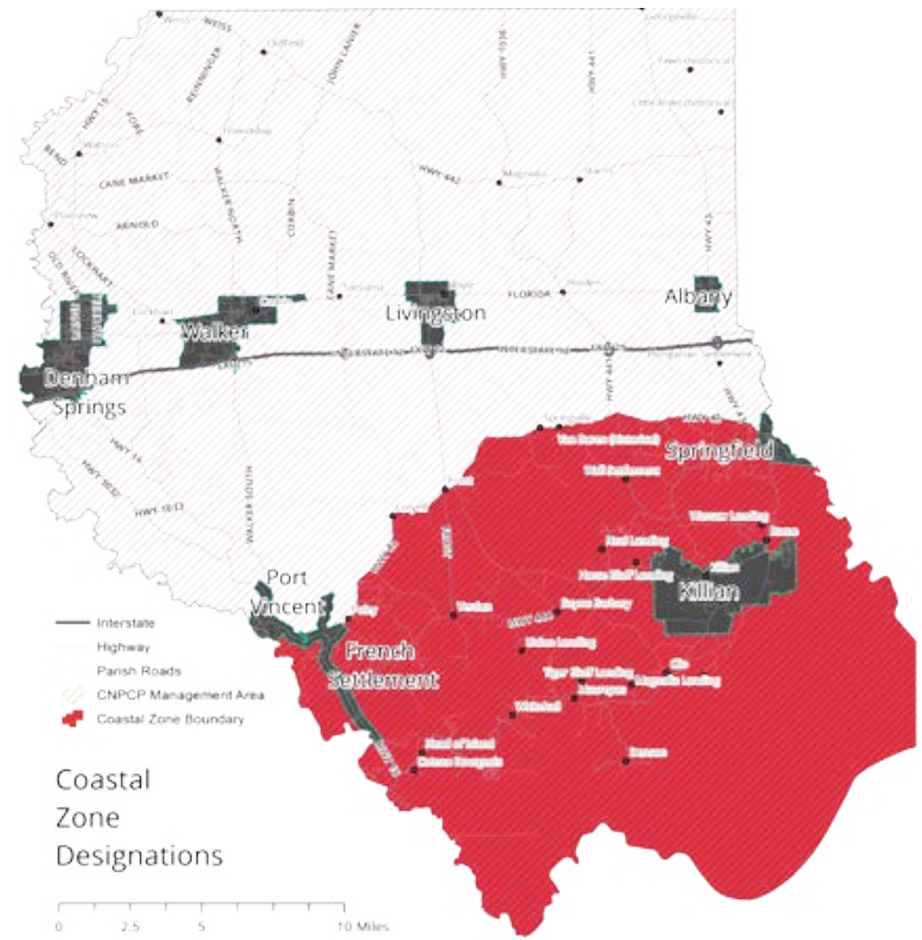

Figure 61: Coastal zone designations

1 *The Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA), the enabling legislation for the coastal program, was enacted to protect coastal resources, primarily wetlands. The state of Louisiana's Department of Natural Resources, is tasked with implementing the coastal resource programs.*

Louisiana's Comprehensive Master Plan for a Sustainable Coast

Focus: Coordination, funding and construction.

Purpose and Highlights: The master plan is intended to increase flood protection in coastal communities to help maintain natural processes, coastal habitats, cultural heritage, and elements of economic development through a variety of structural and non-structural projects.

Principles of the Plan:

1. Achieve long-term solutions, not stopgap measures.
2. Take a natural systems approach.
3. Establish clear and transparent expectations.
4. Acknowledge residual risk of projects.
5. Include the public role through a participatory process.
6. Account for uncertainties.
7. Provide enough flexibility to allow adaptation to changing circumstances.

Types of projects considered:

1. *Restoration Projects*: Bank Stabilization, Barrier Island/ Headland Restoration, Hydrologic Restoration, Marsh Creation, Oyster Barrier Reefs, Ridge Creation, Sediment Diversion, Channel Realignment, Shoreline Protection.
2. *Structural Projects*: Earthen Levee, Concrete Wall, Floodgate, Pumps.
3. *Nonstructural Projects*: Elevation of structures, Flood proofing, Voluntary Acquisition of Residential Structures.

Two primary factors help screened projects for inclusion in the 2012 Coastal Master Plan Update:

1. How well did the projects reduce flood risk?
2. How well did the projects build new land or sustain the land we already have?

Projects are modeled for their reduction in risk and ranked according to the model output. They are included in the plan, based on their ranking. Projects identified subsequently, between plan updates, can be added to the list if their rank is higher than others included in the plan.

Status and Administration: Active and administered by the CPRA, the plan was first adopted in 2007, was updated in 2012 and will be updated again in 2017. The process for that update is currently underway.

The plan includes funding dedicated to the reduction of property loss from inundation, including flood proofing of individual structures. Funding is currently limited but CPRA projects that funding will dramatically increase in next few years.

Impact on Livingston Parish: The 2017 Master Plan Update is projected to include funding for projects, especially shovel-ready projects that reduce flooding risk. During the plan update process, the CPRA will solicit participation in the process from Parish representatives; they typically request involvement of a Local Coastal Program manager.

One project in the current plan that will affect the natural and recreational environment in Livingston Parish diverts sediment into the Maurepas Swamp in order to sustain existing bald cypress-tupelo swamp habitat. It is planned in the vicinity of Convent or Hope Canal.

Coastal Zone Management Program

Focus: Permitting of development to protect coastal resources.

Purpose and Highlights: The coastal zone management program regulates development activity in designated coastal zones. A coastal use permit is required for projects in the coastal zone, including but not limited to: dredge and fill, bulkhead construction, shoreline modification, and other development projects such as marinas, subdivisions, drainage facilities and energy infrastructure.

Highlights: A prime objective of the program is to reduce the loss of wetlands and aquatic resources, as well as to reduce conflicts between coastal resource user groups. Any construction or excavation within the coastal zone is required obtain a permit prior to commencement. No net loss of wetlands is allowed. Currently, most applications are typically either approved or approved with modifications.

While the programs are administered by the state, local parishes have the opportunity to exert some local control over the permitting process by opting to administer the program locally. There are requirements including the adoption of a local plan[2]. The State offers funding and technical assistance to local programs.

2 *For more information on the development of the local program including program requirements please see the Local Coastal Programs Handbook, which can be downloaded from the Louisiana Department of Natural Resources, Office of Coastal Management website: www.dnr.louisiana.gov*

Impact on Livingston Parish: The area of the Parish that is in a designated coastal zone (see Figure 61) is not subject to development pressure. Therefore the permitting process does not significantly impact the Parish residents or developers. However, for the projects that may occur in the Coastal Zone, an applicant must anticipate going through the state permit process (adding cost to the development process).

The other impact on the Parish of the Coastal Zone program is the potential cost of administering the program. The Parish has the option of local administration or relying on State administration (General Office of Coastal Management).

Local administration has several potential benefits:

1. Expedites the review process for local applicants. For example, incorporating coastal permitting into the building department would reduce the number of agencies directly involved and increase one-stop shopping for development review.
2. Increases local control over uses of local concern: camps, private docks, bulkheads, cattle walks, landfills, subdivisions, maintenance of most private canals, etc.
3. Increases responsiveness to local concerns, i.e. resource conservation, economic development, etc.
4. Creates a local knowledge about the program and access to funding for resource management.
5. Provides feedback and local input into state programs – for example the recent Coast 2050 Initiative planning process asked from input from local coastal program administrators.
6. Facilitate communication keeping the Parish appraised of funding for flood control and resource management.

Coastal Non-point Management Program (CNPMP)

Focus: Primarily permitting to reduce impact to coastal resources.

Purpose: To provide for the implementation of management measures to protect coastal waters, generally, and to accomplish the following specific goals:

1. Identify land uses which may cause or contribute to degradation of coastal waters.
2. Identify critical coastal areas adjacent to affected coastal waters.
3. Provide for implementation of additional management measures to achieve and maintain water quality standards and designated uses.
4. Provide technical assistance to the public and local governments to implement management measures.
5. Provide for public participation in all aspects of the program.
6. Establish mechanisms to improve coordination among federal, state, and local agencies responsible for land use programs, permitting programs, water quality programs, enforcement authorities, habitat protection, and public health and safety.
7. Designate/delineate an inland boundary in order to more effectively manage land and water uses to protect coastal waters.

Geographic Area: All of Livingston Parish.

Highlights: Regulates non-point source pollution from agricultural, forestry, hydro-modification [3], marinas and recreational boating, urban runoff and wetlands, riparian areas and vegetated treatment systems.

Status and Administration: Currently being developed, will be administered by a combination of the Louisiana Department of Environmental Quality (outside the coastal zone) and the Louisiana Department of Natural Resource (inside the coastal zone).

Impact on Livingston Parish: Unclear, as the program has not been adopted. It is likely to be similar to the permitting process of to the existing coastal management zone, hence there it likely increase the burden on developers. Adoption of best practices could reduce that burden, by giving anyone wishing to develop a 'road map' to approval.

Implementation

Actions

1. Adopt best practices (e.g. hydro-modification, urban run-off, wetlands, etc.) identified by the coastal management program. This could decrease the time associated with review, increase the chances development will be approved without modification.
2. Consider the implementation of a Local Coastal Program to increase local control of coastal resources. Convene a subcommittee to study and recommend to the Parish Council whether or not to form a local program. The subcommittee should review the Local Coastal Program's Handbook and network with other parishes with local coastal programs to evaluated the benefits (funding opportunities, local permitting) vs. the costs (fiscal, liabilities). Pursue this as soon as the Parish has an expanded planning staff with capacity to implement, and/or there is significant development pressure in the Coastal Zone area.
3. Actively participate in the 2017 Master Plan for a Sustainable Coast Plan update and advocate for programs that impact Livingston Parish.

3 Hydromodification can be any activity that increases the velocity and volume (flow rate), and often the timing, of runoff

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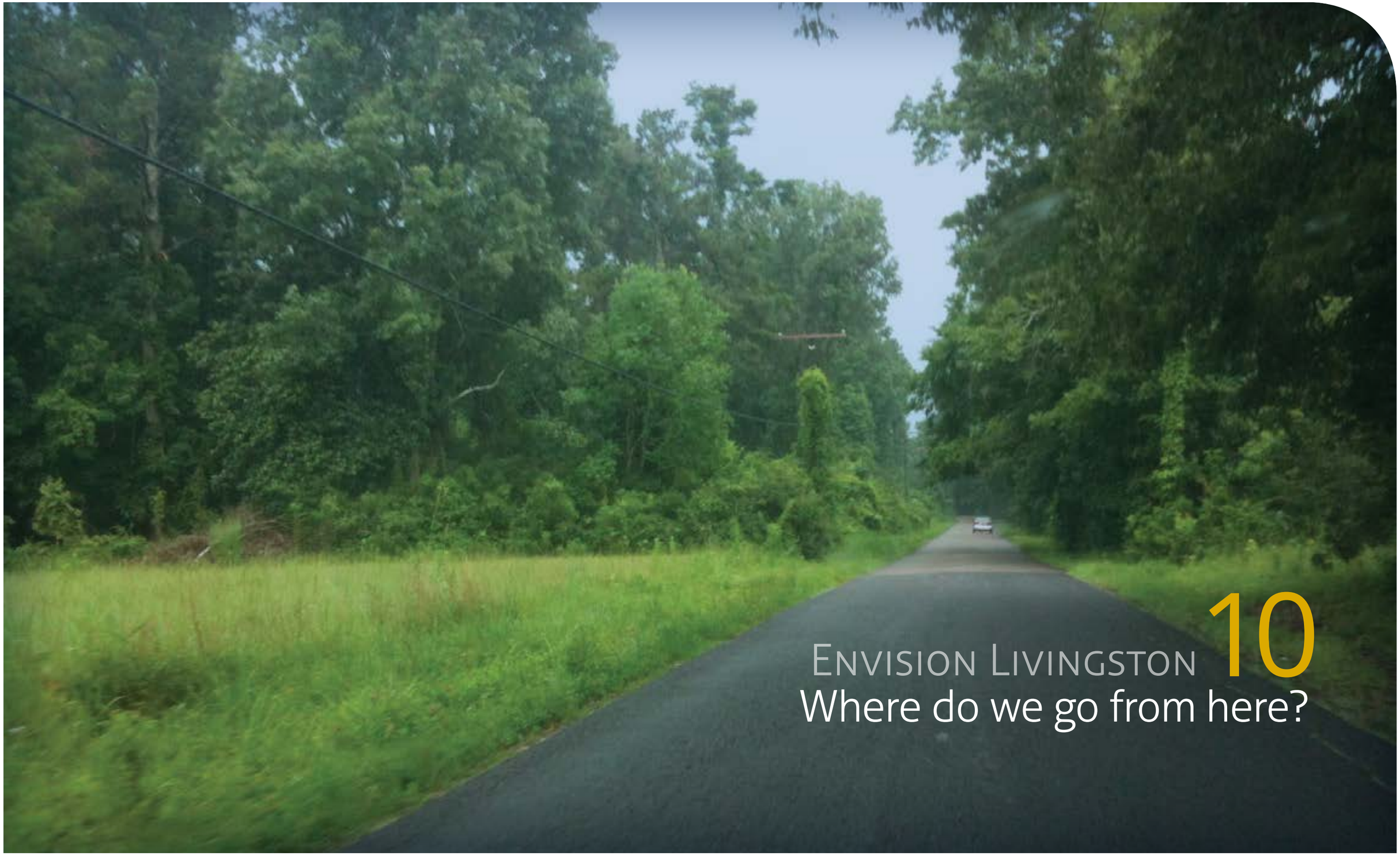


Envision Livingston 10

Where do we go from here?

All strategies, policies, and actions identified in Chapters 1-9 are summarized here

A summary of the strategies, policies and actions identified in Chapters 1-9.

Key concepts of the Plan ("Plan on a page")

1. **The Parish is projected, and has the capacity, to double in population over the next 30 years.** As development pressure increases, if we want to preserve our quality of life we have to plan ahead.
2. **Growth pressure is following a "barbell" pattern** from the west and east sides of the Parish. Large areas of the Parish will not experience development pressure, and don't need extensive planning or regulation.
3. **Attracting good businesses is important to our sustainability.**
   i. The loss of sales tax revenue hinders our ability to provide amenities as well as necessities.
   ii. Predictability and appearance is important to those we want to move here.
4 **Future economic success in the Parish will be dependent on:**
   i. An interconnected system of major roads.
   ii. Regional sewer.
   iii. Added capacity for domestic water service.

   We've been talking about these needs for years; it's time to get organized to bring them about.
5. **Development follows sewer/roads, and vice-versa.** Where we invest in infrastructure (roads, water and sewer) will influence where development occurs. Where development occurs will influence where infrastructure is needed. To get the "big stuff" right we need to coordinate where we invest in our resources.
6. Growing our infrastructure incrementally is less expensive than scattered growth ("leap frog" development).
   i. Road maintenance is paid by taxes. Roads are expensive to build and maintain (as much as $15,000 per year for every mile of road). In the long run, the homes and businesses along the road help pay for the road with their property taxes. When roads are extended long before development occurs, the cost is born by all the residents and businesses of the Parish. It is more economical to extend roads in balance with where development will help pay for them.
   ii. Similarly, the cost of utilities and services (police, fire, school buses, etc.) is affected by the distances they serve vs. the number of homes and businesses.
7. **Being considerate of neighbors** will make the Parish a better place to live and work. For those living here now, and those to come, we need to find ways to avoid locating incompatible uses next to each other.

Key Recommendations of the Plan

1. **Use the Anticipated Land Use Map** as an initial/interim guide for where and how development is likely to occur and to make land use and infrastructure decisions.
2. **Adopt zoning, and basic design guidelines in the critical U.S. Highway 190/Interstate 12** "economic corridor" to encourage needed, quality economic development (employment and commercial uses).
3. **Begin working with individual subareas** ("self-determination" areas) of the Parish to determine the degree to which they wish to increase predictability of land uses. Incorporate their plans into an update of the Comprehensive Master Plan (CMP).
4. **Adopt the Major Street Plan of the CMP** and use it to make sure that future development doesn't preclude the ability to create an interconnected system of roads to reduce congestion in the Parish. Update the Major Street Plan.
5. **Convene "summit meetings" of water and sewer providers** to begin the process of planning how to provide the necessary services that will enable sustainable growth of the Parish.

Land Use

Strategies

1. Create a process of "self-determination," organized by subareas, for the remainder of the Parish to determine the extent to which each subarea wishes to adopt regulations to increase predictability of future development. Individual subareas should be given a reasonable time (say 2 years) to undertake the subarea self-determination process (modify their plan, decide on zoning). If a subarea fails to take any "self-determination" action, the Parish may continue to use the Anticipated Land Use Map as a guide for decision-making, and consider adopting zoning.
2. Adopt zoning regulations in the Interstate 12/U.S. Highway 190 "Economic Corridor"
3 Adopt design guidelines for the major roads in the "Economic Corridor"

Policies

1. All future large development projects (i.e. airport, roads, utilities, public buildings, etc.) should demonstrate how they are either consistent with the Comprehensive Master Plan (CMP) or how the CMP needs to be modified.
2. All future capital improvements budget requests related to land use and infrastructure should demonstrate how they are either consistent with the Comprehensive Master Plan (CPM) or how the CPM needs to be modified.

Actions

1. **Short-term** (1-2 years)
    a. Hire a full time planner to assist in subarea planning implementation (see mid-term actions below).
    b. Until self-determination subarea plans can be adopted.
        i. Council, Planning Commission and Parish Staff to use the anticipated land uses as a general interim guide for land use decisions.
        ii. Modify the Code of Ordinance's, Subdivision Regulations for the "economic corridor", to increase the buffer size for incompatible uses. (see "Possible Tools for Land Regulation" in the appendix[1] for details).
    c. Create and adopt zoning for the "economic corridor" (U.S. Highway 190/Interstate 12).
2. **Mid-term** (3-5 years)
    a. Adopt or modify the 13 former police-jury ward boundaries as the boundary for subarea planning (land use self-determination).
    b. Form a steering committee of subarea residents and businesses. Members should include representatives from a wide-range of trusted community members.
    c. Invite residents and businesses to participate in meetings to develop subarea plans for each subarea. Review the Existing Land Use Map. Identify opportunities and constraints for future land use. Review the Anticipated Land Use Map as a basis for future self-determination. Organizer should present need for land use determination (such as infrastructure planning, congestion reduction, etc.) opportunities for future land uses (such as commercial along arterial corridors), and constraints (such as wetlands).
    d. Identify a vision (at least a one page summary) of future growth for each subarea.
    e. Determine the degree to which more detailed land use predictability is desired.
    f. Choose the appropriate tool from the Toolkit (see Toolkit in the Appendix).
        i. If zoning is desired, select the appropriate zones from the Toolkit.
    g. Have local steering committee adopt the subarea plans.
    h. Recommend to the Planning Commission and Council:
        i. An amendment to the Parish Comprehensive Master Plan to include:
            1. The subarea plan's vision.
            2. Anticipated Land Use revisions.
            3. Identified land use determination tools (such as zoning or other tools the subarea wishes to be enacted).
3. **Ongoing**
    a. Work with individual municipalities to determine their appropriate growth boundaries and ways to reduce the conflict between Parish and municipal land use standards to encourage orderly growth of cities.
        i. Form a **working group** for each growth area, comprised of representatives of the Parish and the respective municipal Planning Commissions.
        ii. After further study, the working group recommend to the Parish Council procedures for project approvals in each growth area such as:
            1. Joint City/Parish review.
            2. The creation of case-specific standards.
            3. Adopt municipal standards.
    b. Create a GIS system for the Parish, integrated with the Parish Assessor's data, to keep track of development and land use data. Include Office of Emergency Management considerations to help provide new development that has appropriate emergency response.

1 The appendix is not included but may be obtained from the Parish.

Wastewater

Strategies

1. Facilitate the new wastewater treatment services by assisting the Livingston Parish Sewer Districts 1 & 2 in expanding their facilities and boundaries. This means helping the existing districts find the funding they need for infrastructure improvements.
2. Assume that expansion will be incremental outward from existing lines and treatment plants (avoid leap-frog expansion).
3. Each district will determine its own policies. In general, the Parish should simultaneously encourage an expand wastewater treatment lines to:
    a. Serve existing homes (this will help increase water quality and avoid curtailing development).
    b. Providing opportunity for new commercial and employment development in the "economic corridor" (to increase employment options and generate taxes to support funding needs).
4. Expand wastewater services:
    a Only where there is high participation by existing landowners along the new extensions, and
    b only when the land use density is allowed (zoning or some other measure) to reach an economic level of density.

Actions

1. Call a "summit meeting" of Parish sewer providers to:
    a. Establish a vision for regional service.
    b. Evaluate the obstacles and opportunities to creating a regional system (such as the USACE approach) and formulate solutions[2].
    c. Formulate a cooperative agreement for expanding existing systems.
    d. Begin the search for funding mechanisms such as a property tax.
2. Work with the State Department of Health and Hospitals to monitor and enforce improperly functioning private treatment systems.
3. Revise Livingston Parish Code of Ordinances for wastewater regulations:
    a. Reduce the allowable number of houses within new developments to be served by a package treatment system.
    b. Require future developments on private wastewater treatment services (such as Mo-dad or TESI) to tie into public wastewater infrastructure when it reaches their service area (at no cost to the public).
    c. Do not allow development that will increase Total Maximum Daily Load levels of an impaired water body as defined by the Louisiana Department of Environmental Quality.

2 For example, if the Parish sewer districts are not able to provide service to an area, then it may be cost-effective to share costs of expanding municipal systems to unincorporated areas of the Parish. The municipality could gain customers, and the expanded capacity would return tax benefits to the Parish. Incentives could include sharing of installation costs or tax revenues.

Transportation

Strategies

1. Reducing congestion is increasingly necessary to support growth in unincorporated areas of the Parish, even at low-density suburban levels. A key strategy to reducing congestion is to provide efficient alternate routes through the Parish— a more complete network of arterial and collector roads.
2. The Major Street Plan (MSP) identifies very general corridors for future roads (to ensure that they are not lost to interim development). This element of the CMP will serve as the initial Major Street Plan as identified in the Livingston Parish code. Upon completion of the CMP. The Parish needs to commission a more detailed Transportation Plan (an inventory of roadway assets, conditions, future transportation needs, future road alignments, etc.) to refine the MSP and guide the development of future Parish (and sate) roads.
3. To further reduce congestion, as well to provide better emergency access and evacuation, enforce existing regulations regarding road connectivity between new subdivisions (allow residents to take alternate, more direct routes to get to collectors and arterials).
4. Fund maintenance at a sustainable level, confirm by a detailed analysis in the Transportation Plan.
5. Require that collector roads (or equivalent road impact fees) be provided by future major developments.
6. Be very selective about accepting additions to the Parish road system such as selecting only roadways that meet existing Parish standards of more than 1,000 feet, has five or more dwelling units, etc.
7. Until Action 3 is completed consider the following as existing road priorities:
    i. Extend Cook Road to Juban Road.
    ii. Extend Hooper Road (Louisiana Highway 408) from Eastern Baton Rouge Parish crossing of the Amite and connecting into Louisiana Highway 16 and Springfield Road.
    iii. Extend Frost Road south from intersection of Louisiana Highway 444 to Louisiana Highway 22.
    iv. Extend Walker South Road (Louisiana Highway 447) to Louisiana Highway 42 in Ascension Parish.
    v. Expand the overpass at Interstate 12 and South Walker Road (Louisiana Highway 447).
    vi. Widen US 190 (Florida Blvd) from Denham Springs to Louisiana Highway 449 past Walker and from Livingston to Albany.
    vii. A new interchange at Interstate 12/Pete's Highway.
    viii. Widen Louisiana Highway 64 from Louisiana Highway 16 to Magnolia Bridge.

The following list of roadways is for future prioritization:

- Brown Road.
- Eden Church Road.
- Extend Lockhart from Cockerham to Burgess Road.
- Extend Juban Rd to Lockhart.
- Louisiana Highway 444 from Louisiana Highway 16 to Frost Road.
- Louisiana Highway 447 South of Interstate 12 to Louisiana Highway 16.
- Louisiana Highway 447 North to Corbin Ave.
- Louisiana Highway 447 Interstate 12 overpass at Walker.
- Juban Road from Interstate 12 to Louisiana Highway 190.
- Juban South of Interstate 12 to Brown Road.
- Pete's Highway Interchange.
- Port Vincent Bridge replacement and widening.
- Satsuma Interstate 12 overpass.
- Tate Road from Pete's Highway to Juban.
- Tiger Bend Road.
- Turning lanes at U.S. Highway 190 and Louisiana Highway 1029.
- Turning lanes at US Highway 190 and Louisiana Highway 449.
- Upgrade Louisiana Highway16 (various locations at intersection with Walker South Road and from the northern border of French Settlement south to Louisiana Highway 22).
- Widen Louisiana Highway 43 (from interstate north to Steward Lane).
- Widen Louisiana Highway 43 (from Interstate 12 south to Louisiana Highway 42).

Actions

Short-term: (1-2 years)

1. Adopt the CMP Major Street Plan on an interim basis.
2. Notify the public and begin following the Parish Code with regard to requiring future developments to be consistent with the Major Street Plan.
3. With public works, establish 5 year overall road priorities in the Parish. The list should be updated yearly using safety, congestion, and maintenance costs as criteria. Roads that have a funding source (Federal, State, or Local) should be considered top priority.

Mid-term: (3-5 years)

4. Commission a detailed Parish Transportation Master Plan, including:
    i. An update of the Major Street Plan to:
        a. Avoid wetlands where possible.
        b. Refine interchange locations.
        c. Update the priories for new Parish roads.
    ii. Establish servitude ownership and widths for all Parish roadways.
    iii. Identify which Parish roadways are consistent with Parish Code criteria for maintenance by the Parish.
    iv. Investigate roadway flooding issues, problem roadways, and propose remedies.

Ongoing:

5. Implement Parish Code requirement relating to:
    a. Major Street Plan.
    b. Connectivity of future subdivisions.

Drainage

Strategies

1. Although the Parish drainage system functions relatively well under typical conditions, increasing development in the Parish is likely to challenge existing standards. The Parish needs to carefully evaluate the cumulative impacts of its current policies (e.g. excepting less than a 10 percent increase from a drainage plan).
2. As development increases, wetlands and natural retention and detention areas will be filled in requiring replacement with man-made features. Costs of construction, and wetlands permitting and mitigation are expected to continue to rise.
3. Servitudes platted and approved prior to recent regulations may not be wide enough to allow sufficient access for even current maintenance or width for future widening that may be needed. Retrofitting existing developments to meet the current standards is needed, but likely not a recoverable expense. Revenue sources need to be explored, including drainage taxes.
4. Parish or GDD liability may be significant for substandard or incomplete drainage features that were approved by the Parish and then transferred to the Gravity Drainage Districts. This needs to be addressed. Similarly, current inspection and approval practices remain informal, allowing for undocumented exceptions and variances from accepted standards.
5. The informal cooperative relationship that exists today among the various drainage authorities will be strained as more demands are placed upon fewer resources at the state and Parish levels. More formal policies and procedures may be needed.
6. Wetland permitting has become a time-consuming and expensive task for the drainage authorities, who need permits to clean canals and ditches and clear maintenance servitudes. A combined permit (similar to the "nationwide" wetland permits for roads) should be sought collectively.
7. Although a wetlands mitigation plan is required for preliminary plat approval for subdivisions with improvements, the regulation relies upon the developer to determine whether or not wetlands occur within the site. The magnitude of the Parish liabilities from a lack of wetlands permitting data and potential Section 404 violations needs to be assessed and avoided.
8. Because drainage management is governed by a variety of authorities, no one group appears to be an advocate for the pursuit of grant funding and implementation for drainage mitigation or planning. Cooperative action may be advantageous to all.

Actions

1. Schedule regular meetings of all drainage entities to formalize their cooperation and increase sharing of data, technology, and expertise.

   For example: Walker Office of Louisiana Department of Transportation and Development (LADOTD) completed a blanket Section 404 permit in 2010 for all its ditches in Livingston Parish. The permit manager for LADOTD is an expert in this kind of permitting and could provide guidance for other drainage authorities.

2. When considering creating or funding additional Gravity Drainage Districts (GDDs):
   a. Use the opportunity to align their boundaries with watershed boundaries.
   b. Focus resident approval on areas with most population and highest growth potential.

      For example: GDD No. 6 includes the Middle Tickfaw Watershed, a vast area of undeveloped forest that is sparsely populated with limited revenue sources. Drainage in this area is a lower priority than in the portion of the Natalbany River Watershed that includes Albany and Springfield, where a GDD would be sustainable and popular, particularly as new residents spillover from Tangipahoa Parish.

3. Create a Master Drainage Plan for the growth areas of the Parish.
   a. Form a coalition with GDDs, Parish and municipal Departments of Public Works, LADOTD maintenance office, and other agencies.

      For example: The Parish-wide GIS could include layers of natural drainage features and surface waters in the Parish. This map can be combined with the separate existing drainage maps (Alvin Fairburn Associates has the information), and the drainage map managed by LADOTD, to create a basemap of existing drainage features. (GDD and municipal data will have to be converted from database descriptions to GIS.) Funding for this project may be available through the United States Army Corps of Engineers GIS project.

   b. Seek grant funding utilizing the drainage basemap as the point of departure.

      For example: The directors of GDD Nos. 1, 2, and 5 have expressed an interest in developing a coordinated plan for their districts. Funding for a drainage mitigation plan was secured in 2009 from Federal Emergency Management Agency and Governor's Office of Homeland Security and Emergency Preparedness (OHSEP) for the Colyell Creek-Amite River Watershed, which includes GDD No. 5. A contractor was selected in 2012. However, the project contract had not been executed as of July 2012. This funding is part of a phased Hazard Mitigation Grant application awarded for a hydraulics and hydrology study, topographic survey, design preparation and permitting. If the engineering work produces a feasible project, the cost of the drainage improvements will be paid through a $1.5 billion federal appropriation for mitigation projects available to communities in accordance with Section 404 of the Stafford Act following Hurricanes Katrina and Rita.

4. Update Parish ordinances to require proof of a jurisdictional determination for any site being developed in the floodplain, or an affidavit that no wetlands are present within the site. If wetlands are present, require a copy of the Section 404 permit application, approved permit, as well as the executed mitigation contracts as a requirement for final approval. These data can then be compiled at the permitting office and mapped over the drainage basemap to determine what activities have been permitted and when the permit expires.

   For example: According to the subdivision procedures, the permitting of a subdivision with improvements follows a logical path from preliminary plat through final plat and bonding. This sequence is followed by an 18-month maintenance period before the developer is released from his bond. Section 404 permitting follows a similar course and can be sequenced with permit milestones as shown in the table below.

5. Require that final plats, drainage plans, jurisdictional determinations, and permit drawings be submitted in digital (ideally GIS) format so that the information can be captured in the Parish-wide GIS. If not submitted in GIS format, a small fee could be instituted to cover the cost of digitization.
6. Conduct an engineering evaluation of the cumulative impact of the10 percent thresholds exemptions from having to do a drainage study.

Domestic Water

Strategies

1. In the recommended approach, Livingston Parish is the primary agency responsible for implementation. Duties include:
   - The establishment of a new Parish-wide regional water district.
   - Development and execution of agreements with existing private and municipal systems to combine services.
   - Construction of new infrastructure.
   - Operations and maintenance.
2. Ward 2 Water District has the trained personnel to operate and maintain water treatment facilities and could take on the role as the Parish-wide water service provider.
3. The Parish could potentially benefit from the re-use of reclaimed water from the Livingston Parish School District treatment system to reduce the cost of water in landscaping and industrial applications and provide a revenue source to the Parish.
4. Consider augmenting the informal cooperation between sewer and water systems regarding fee collection, with a more formal combined structure that will assure a high level of fee collection to fund the water and sewer systems.

Actions

1. Retain an engineer to update and confirm the findings of the 2007 USACE report with regard to domestic water supply and future demand.
2. Convene a "summit meeting" of the Livingston Parish water providers to:
   a. Discuss the findings and implications of the USACE report (as confirmed above).

b. Form a working group to develop recommendations regarding cooperation and eventual implementation of a regional wastewater including the combination of services with domestic water system.

Emergency Preparation and Hazard Mitigation

Hazard Mitigation Plan goals and actions are incorporated as part of this plan.

Flooding is one of the main threats to life and property in the Parish. In the 2011 HMPU, the Parish and its municipalities established goals and an action plan to achieve them. The goals are:

1. (**Goal 1**:) Identify and pursue preventative measures that will reduce future damages from hazards.
2. (**Goal 2**:) Enhance public awareness and understanding of disaster preparedness.
3. (**Goal 3**:) Reduce repetitive flood losses.
4. (**Goal 4**:) Facilitate sound development in the Parish and municipalities to reduce or eliminate the potential impacts of hazards.

Actions

The key actions for the unincorporated areas of the Parish that relate to land use decisions are:

1. **(Action 1.4.1**:) Upgrade drainage ways to better carry runoff.
2. **(Action 1.4.2**:) Increase the capacity of stormwater detention areas.
3. **(Action 3.1.1**:) Elevate, acquire or reconstruct all Repetitive Loss and Severe Repetitive Loss structures.
4. **(Action 3.2.1**:) Ensure that all municipalities and the Parish work together to produce a cohesive drainage plan.
5. **(Action 4.1.1**:) Enforce building codes to ensure that future development does not increase hazard losses.
6. **(Action 4.1.2**:) Guide future development away from hazard areas using zoning regulations.
7. **(Action 4.2.1**:) Participate in programs at the state and federal levels regarding environmental enhancement and conservation.

These goals and actions are also addressed in various ways in other sections of this Comprehensive Master Plan.

Additional actions

From public and technical input during the Comprehensive Master Plan, the following additional recommendations are proposed:

8. Identify critical corridors that are essential to emergency response vehicles when trying to reach the southern portion of the Parish and those used in evacuation.
9. Evaluate the road (roadbed, drainage infrastructure) for resilience in hazard events.
10. Develop strategies to improve problem roadways. This could include a widening for essential routes and/or elevating any critical roads that are known to flood, either by fill or structure.
11. Give a high priority to new roads that would provide emergency assistance and improve evacuation traffic flow. One suggestion is extending Old Frost Road to LA 22. An existing cut and ROW (originally built for a railroad) already exists.

Coastal Management

Actions

1. Adopt best practices (e.g. hydro-modification, urban run-off, wetlands, etc.) identified by the coastal management program. This could decrease the time associated with review, increase the chances development will be approved without modification.
2. Consider the implementation of a Local Coastal Program to increase local control of coastal resources. Convene a subcommittee to study and recommend to the Parish Council whether or not to form a local program. The subcommittee should review the Local Coastal Program's Handbook and network with other parishes with local coastal programs to evaluated the benefits (funding opportunities, local permitting) vs. the costs (fiscal, liabilities). Pursue this as soon as the Parish has an expanded planning staff with capacity to implement, and/or there is significant development pressure in the Coastal Zone area.
3. Actively participate in the 2017 Master Plan for a Sustainable Coast Plan update and advocate for programs that impact Livingston Parish.

Updating the Plan

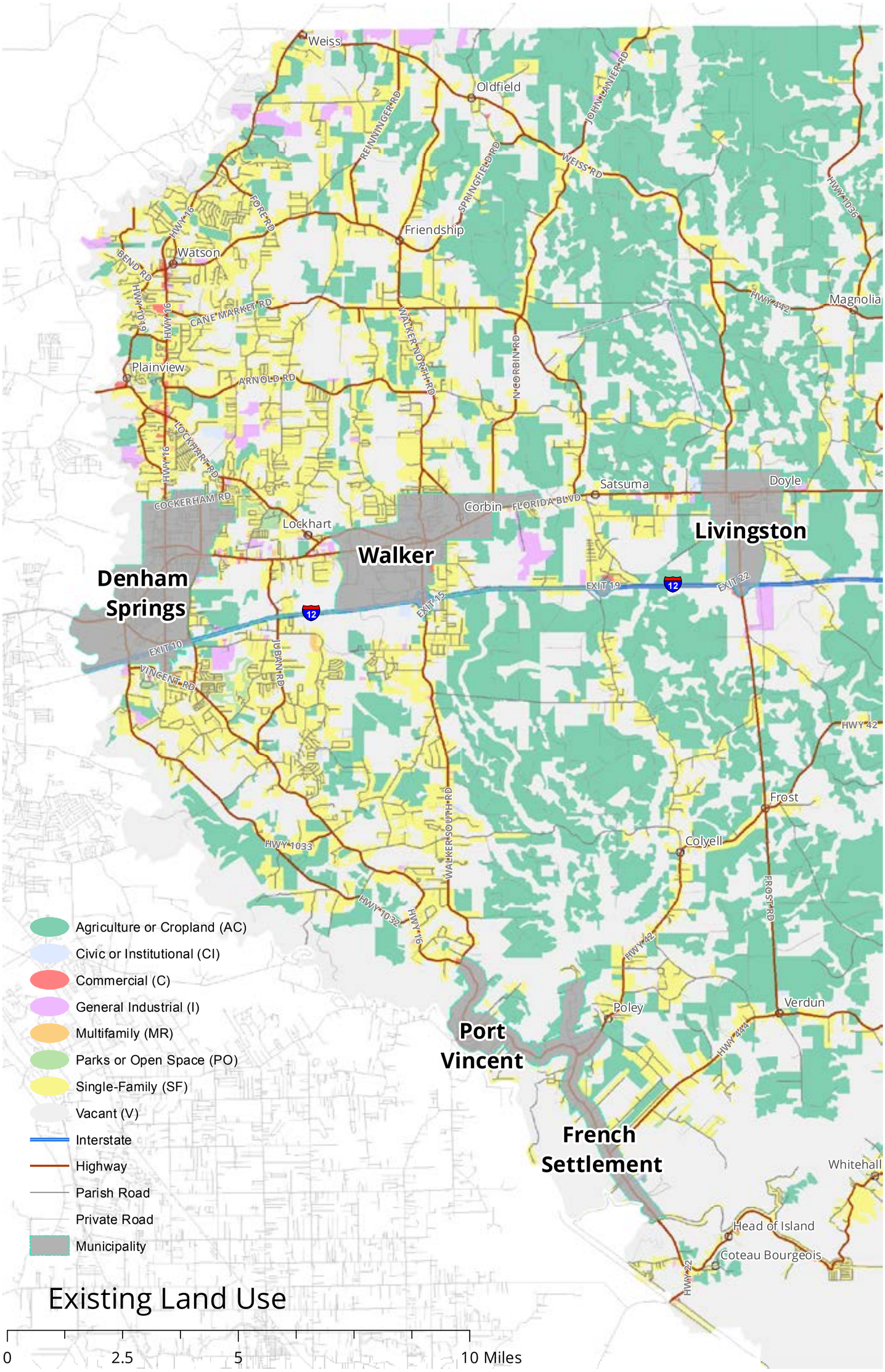
As conditions change (e.g., public opinions change, the economy adjusts and/or new ideas emerge) updates to the CMP will be necessary. Two types of updates are envisioned:

- A **major update** is one that substantially changes the land uses, goals, or intent of the plan. Major updates should address the implications for each element of the CMP and should include substantial public outreach (see public outreach in the appendix[3]).
- **Minor updates** do not change the intent of the plan. They include clerical corrections, updates to data, and clarification of the plan. Minor updates should be made as often as necessary. They may be made by Parish staff administratively, with notification of the Council and Planning Commission.

3 Appendix is a separate document and may be obtained from the Parish

Envision Livingston 11

Maps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Colyell
Poley
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Whitehall
Head of Island
Coteau Bourgeois
EXIT 10
EXIT 15
EXIT 19
EXIT 22
Agriculture or Cropland (AC)
Civic or Institutional (CI)
Commercial (C)
General Industrial (I)
Multifamily (MR)
Parks or Open Space (PO)
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Interstate
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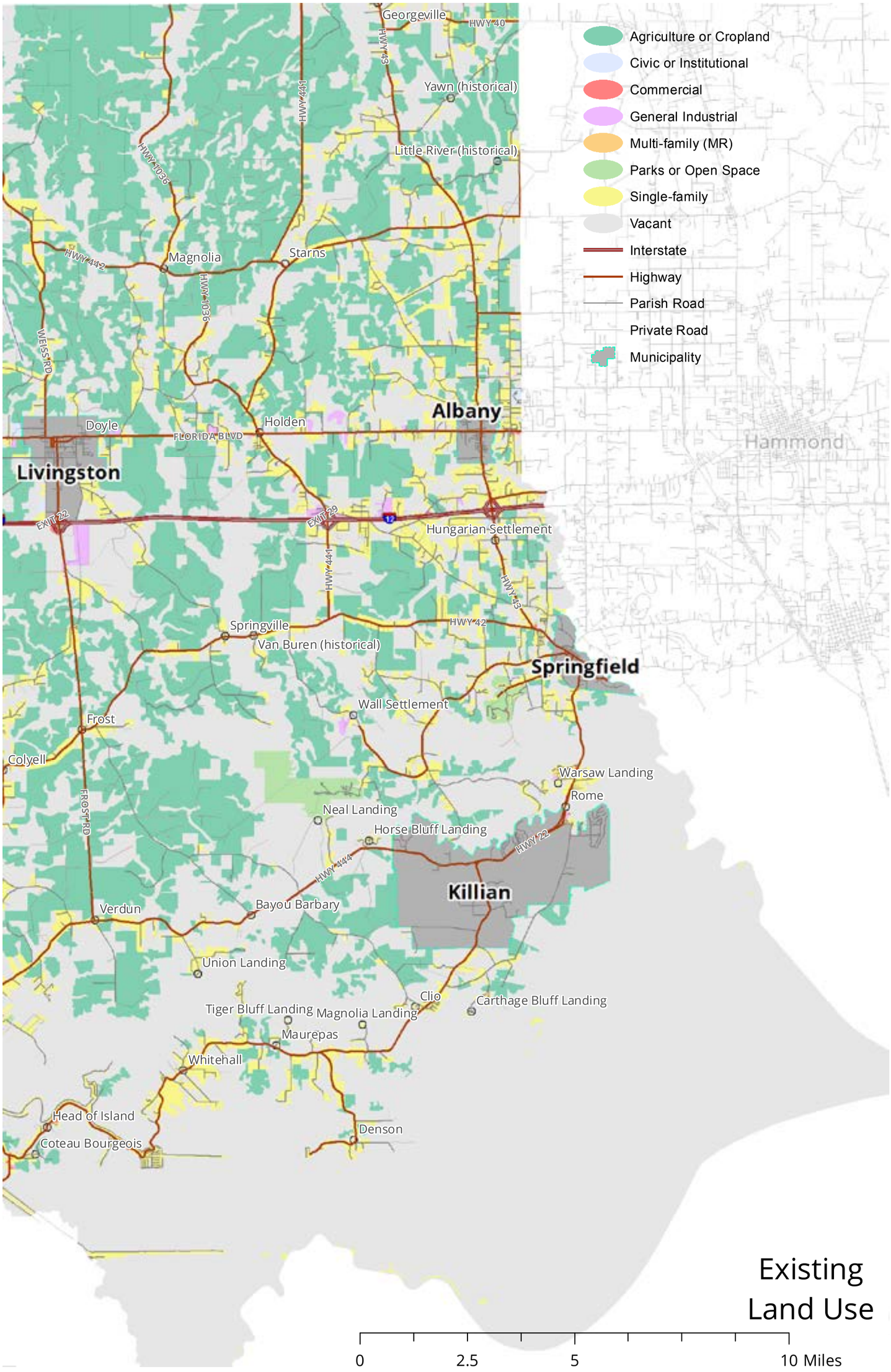

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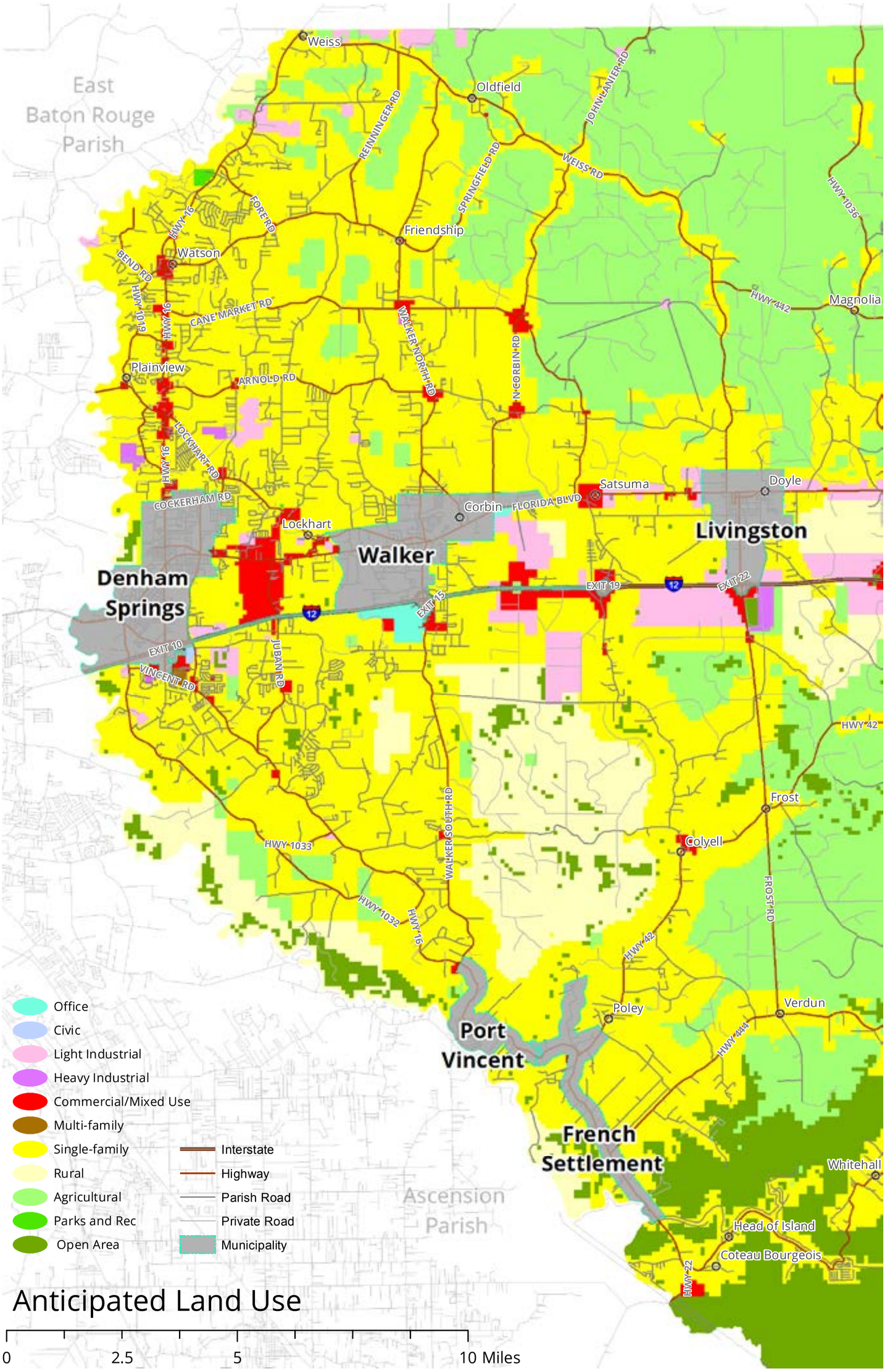
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BEND RD
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HWY 1036
HWY 442
ARNOLD RD
LOCKHART RD
COCKERHAM RD
FLORIDA BLVD
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EXIT 22
EXIT 15
EXIT 10
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HWY 1032
FROST RD
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HWY 22
Office
Civic
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Heavy Industrial
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Multi-family
Single-family
Rural
Agricultural
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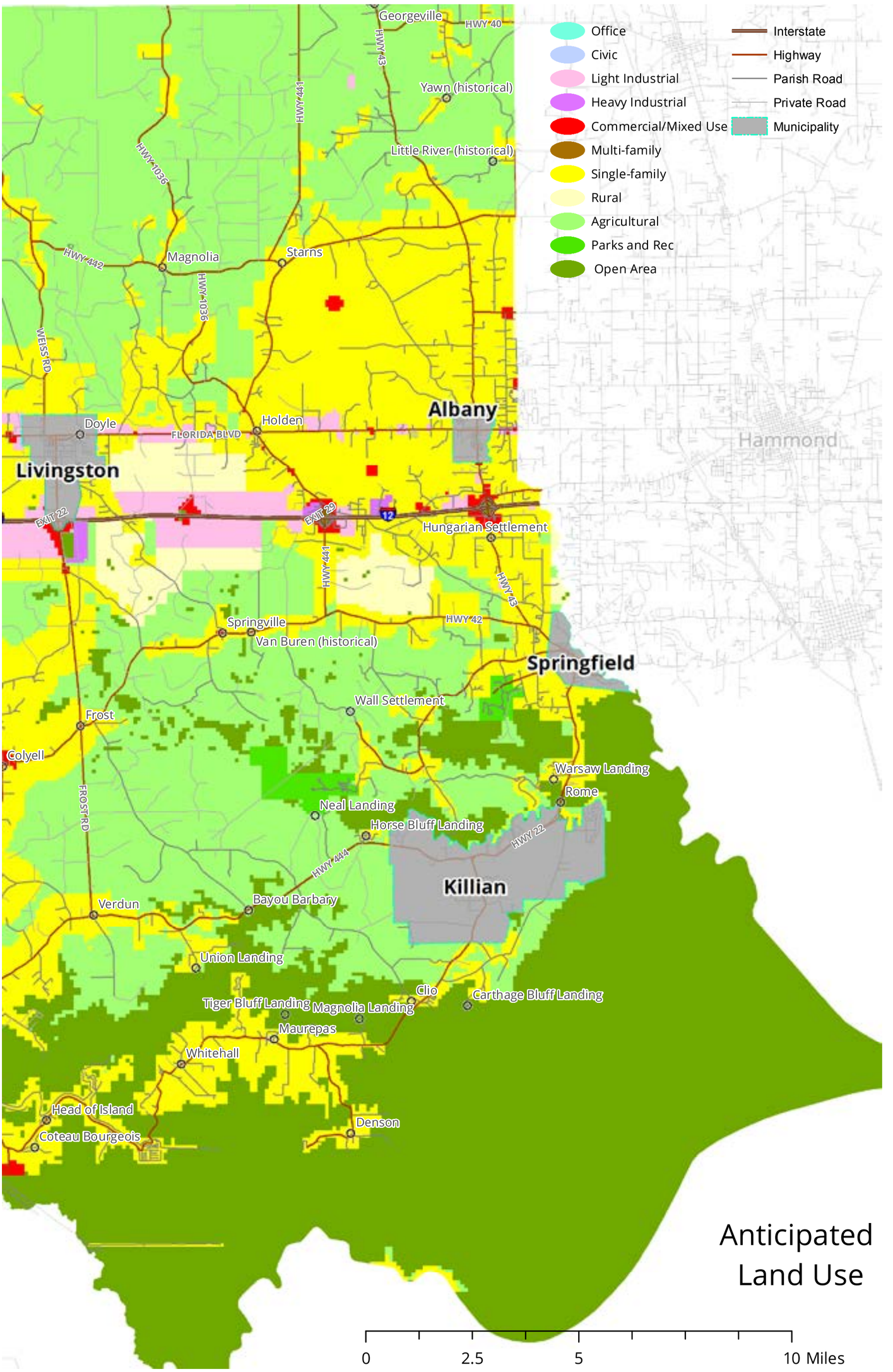
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Private Road
Municipality
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HWY 43
Yawn (historical)
HWY 441
Little River (historical)
HWY 1036
HWY 442
Magnolia
Starns
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Albany
Doyle
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FLORIDA BLVD
Hammond
Livingston
EXIT 22
EXIT 29
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Hungarian Settlement
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HWY 43
Springville
HWY 42
Van Buren (historical)
Springfield
Wall Settlement
Frost
Colyell
Warsaw Landing
Rome
FROST RD
Neal Landing
Horse Bluff Landing
HWY 22
HWY 444
Killian
Verdun
Bayou Barbary
Union Landing
Clio
Carthage Bluff Landing
Tiger Bluff Landing
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Whitehall
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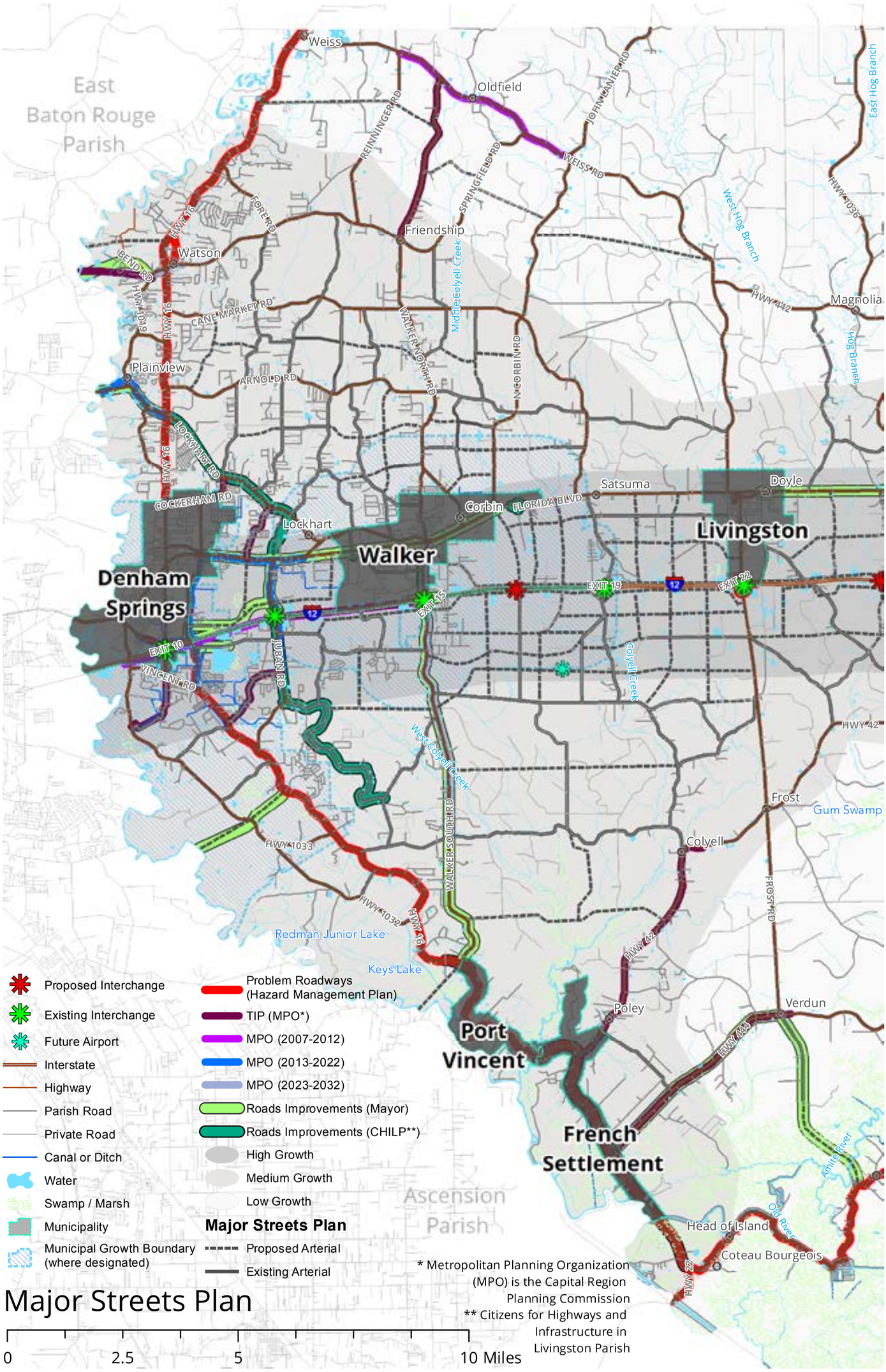
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Keys Lake
HWY 22
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Verdun
Port Vincent
HWY 444
French Settlement
Amite River
Ascension Parish
Head of Island
Old River
Coteau Bourgeois
Proposed Interchange
Existing Interchange
Future Airport
Interstate
Highway
Parish Road
Private Road
Canal or Ditch
Water
Swamp / Marsh
Municipality
Municipal Growth Boundary (where designated)
Problem Roadways (Hazard Management Plan)
TIP (MPO*)
MPO (2007-2012)
MPO (2013-2022)
MPO (2023-2032)
Roads Improvements (Mayor)
Roads Improvements (CHILP**)
High Growth
Medium Growth
Low Growth
Major Streets Plan
Proposed Arterial
Existing Arterial
* Metropolitan Planning Organization (MPO) is the Capital Region Planning Commission
** Citizens for Highways and Infrastructure in Livingston Parish
Major Streets Plan
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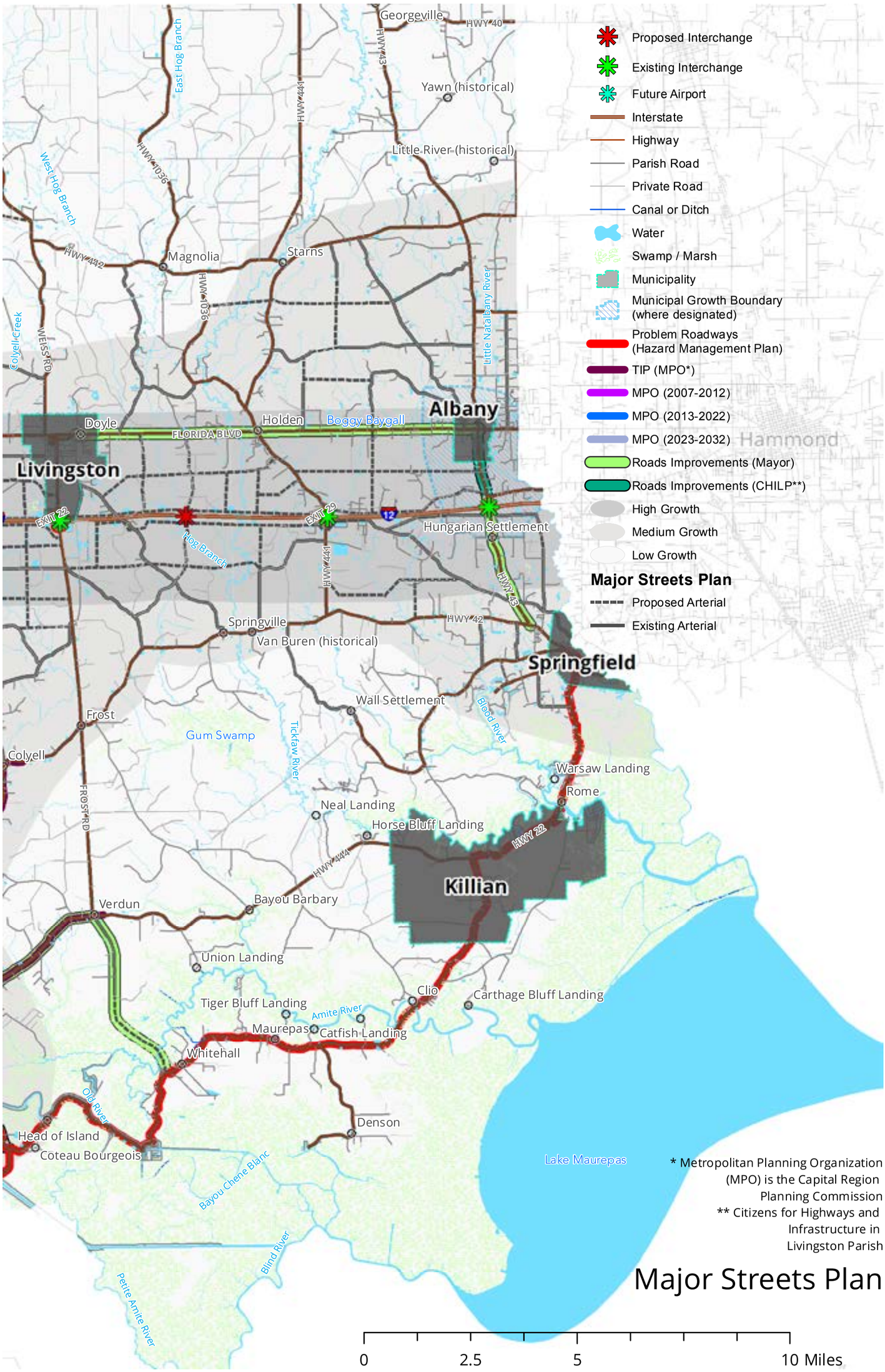
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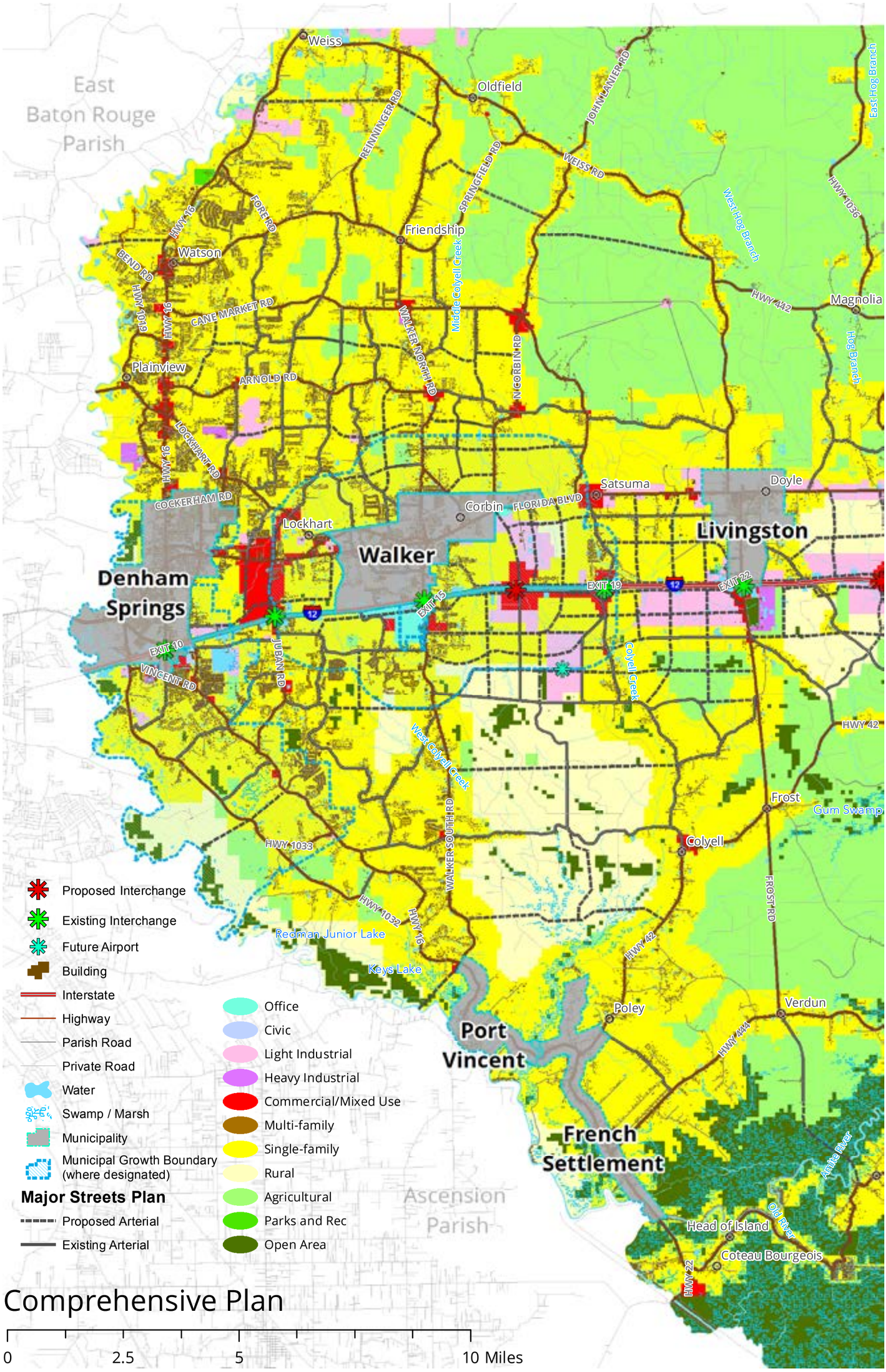
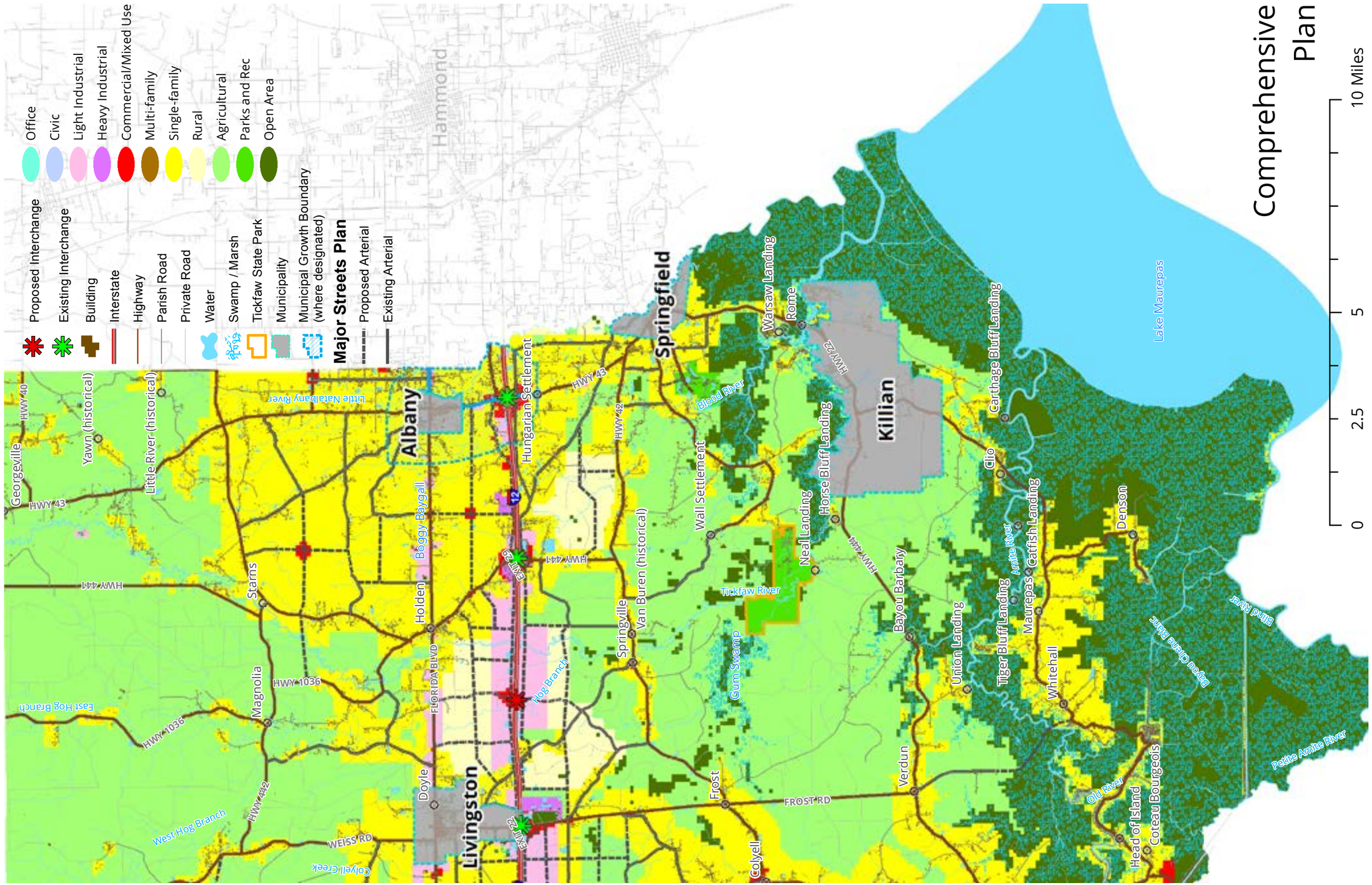
Roads Improvements (Mayor)
Roads Improvements (CHILP**)
High Growth
Medium Growth
Low Growth
Major Streets Plan
Proposed Arterial
Existing Arterial
Georgeville
HWY 40
East Hog Branch
HWY 443
HWY 441
Yawn (historical)
Little River (historical)
West Hog Branch
HWY 1036
HWY 442
Magnolia
Starns
HWY 1036
Little Natalbany River
Colyell Creek
WEISS RD
Albany
Doyle
Holden
Boggy Baygall
FLORIDA BLVD
Hammond
Livingston
EXIT 22
EXIT 29
12
Hog Branch
Hungarian Settlement
HWY 441
HWY 43
Springville
HWY 42
Van Buren (historical)
Springfield
Wall Settlement
Blood River
Frost
Gum Swamp
Tickfaw River
Colyell
Warsaw Landing
Rome
FROST RD
Neal Landing
Horse Bluff Landing
HWY 22
HWY 444
Killian
Verdun
Bayou Barbary
Union Landing
Clio
Carthage Bluff Landing
Tiger Bluff Landing
Amite River
Maurepas
Catfish Landing
Whitehall
Old River
Denson
Head of Island
Coteau Bourgeois
Lake Maurepas
Bayou Chene Blanc
Blind River
Petite Amite River
* Metropolitan Planning Organization (MPO) is the Capital Region Planning Commission
** Citizens for Highways and Infrastructure in Livingston Parish
Major Streets Plan
0
2.5
5
10 Miles


East Baton Rouge Parish
Ascension Parish
Weiss
Oldfield
Friendship
Watson
Plainview
Lockhart
Corbin
Satsuma
Doyle
Magnolia
Walker
Denham Springs
Livingston
Port Vincent
French Settlement
Colyell
Frost
Poley
Verdun
Head of Island
Coteau Bourgeois
Gum Swamp
Redman Junior Lake
Keys Lake
Middle Colyell Creek
West Colyell Creek
Colyell Creek
West Hog Branch
East Hog Branch
Hog Branch
White River
Old River
REINNINGER RD
SPRINGFIELD RD
JOHNVILLANIER RD
WEISS RD
FORE RD
HWY 16
BEND RD
HWY 1018
HWY 96
CANE MARKET RD
ARNOLD RD
LOCKHART RD
COCKERHAM RD
WALKER NORTH RD
NGORBIN RD
FLORIDA BLVD
EXIT 19
EXIT 22
EXIT 15
EXIT 10
VINCENT RD
JUBAN RD
WALKER SOUTH RD
HWY 1033
HWY 1032
HWY 42
HWY 442
HWY 1036
HWY 4444
FROST RD
HWY 22
Proposed Interchange
Existing Interchange
Future Airport
Building
Interstate
Highway
Parish Road
Private Road
Water
Swamp / Marsh
Municipality
Municipal Growth Boundary (where designated)
Major Streets Plan
Proposed Arterial
Existing Arterial
Office
Civic
Light Industrial
Heavy Industrial
Commercial/Mixed Use
Multi-family
Single-family
Rural
Agricultural
Parks and Rec
Open Area
Comprehensive Plan
0
2.5
5
10 Miles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Parish Road
Private Road
Water
Swamp / Marsh
Tickfaw State Park
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2.5
5
10 Miles
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Albany
Springfield
Killian
Livingston
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Little River (historical)
Stairs
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Van Buren (historical)
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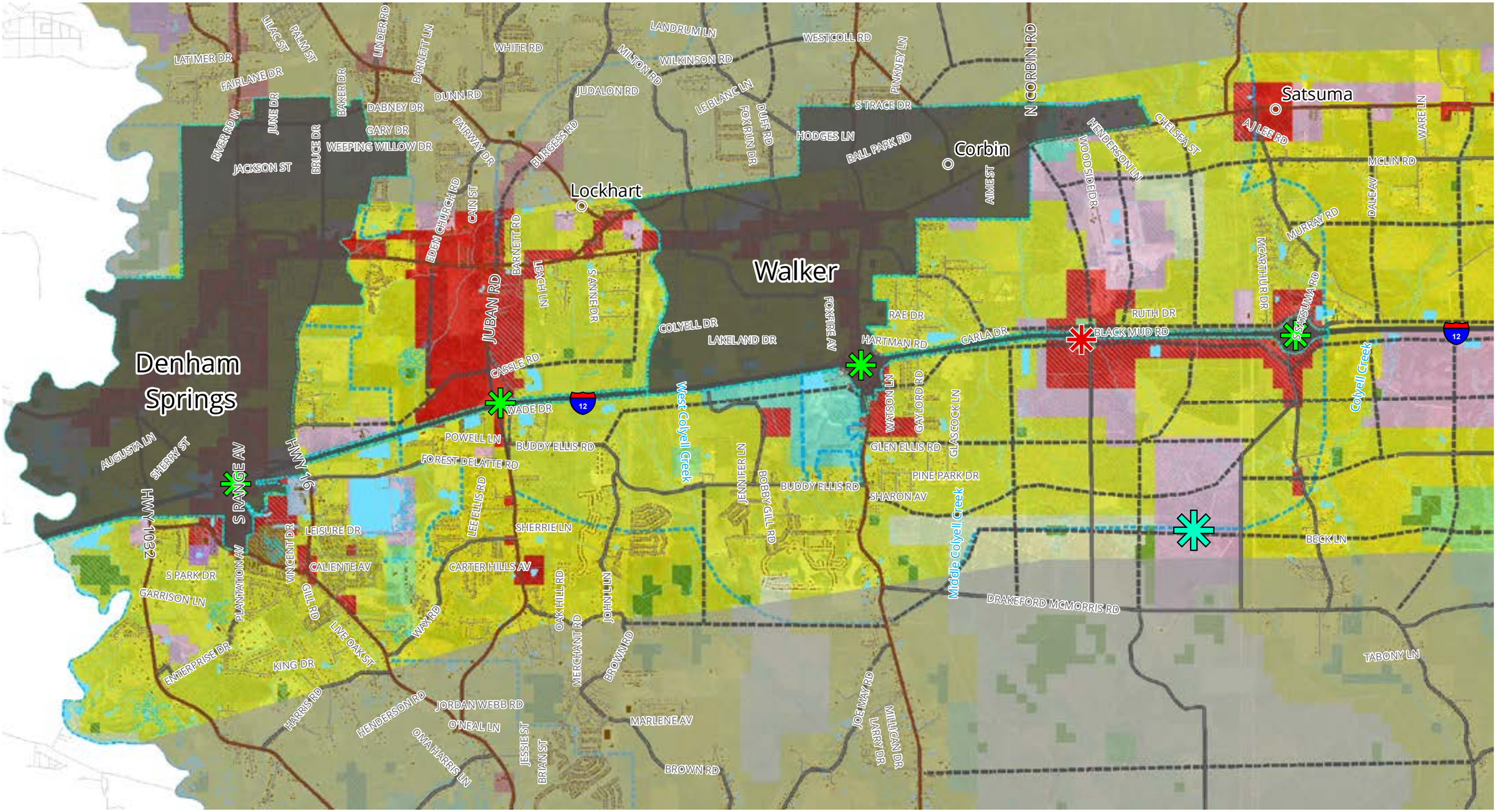
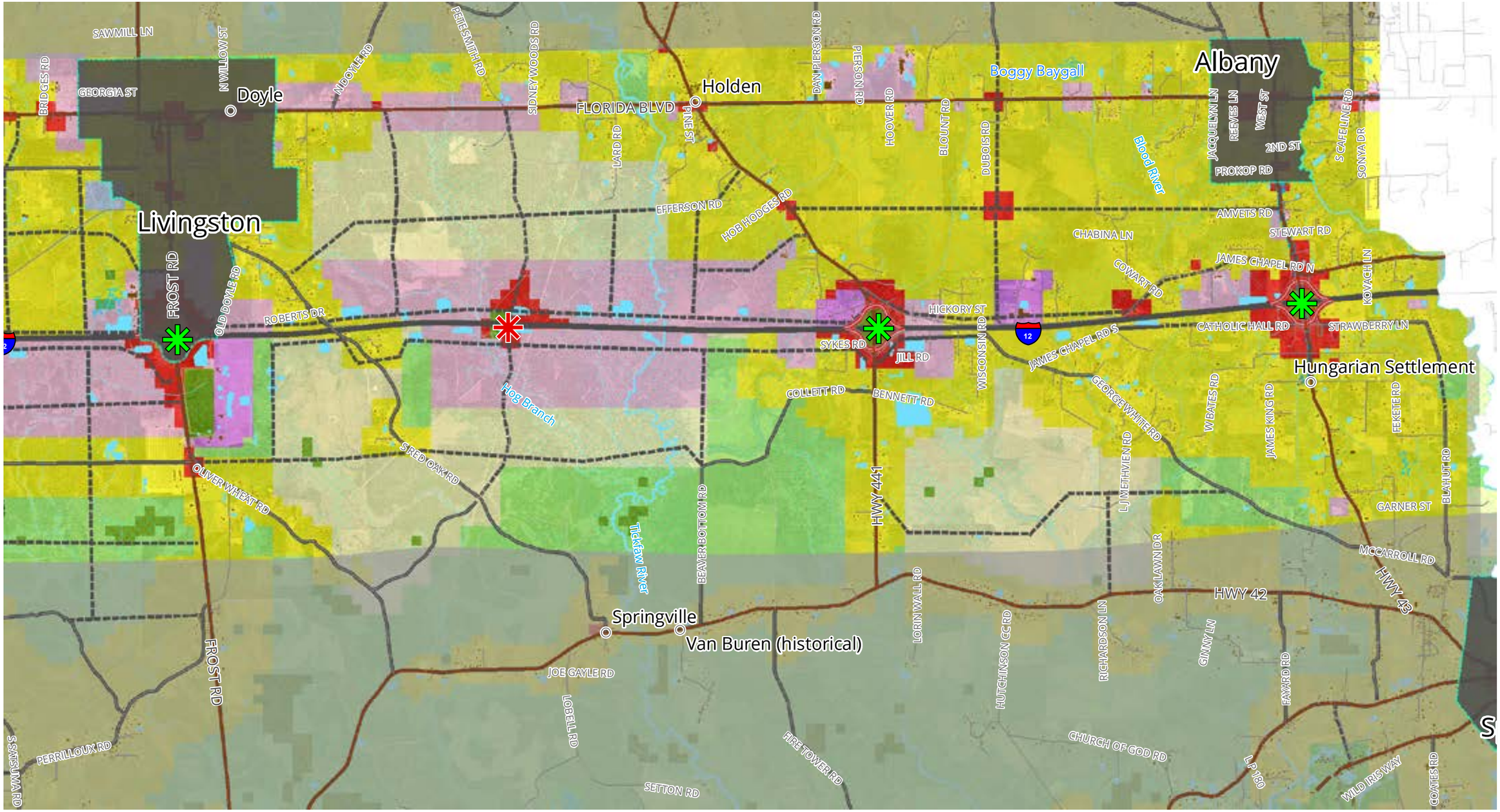
FROST RD
12



Anticipated Land Use in the Economic Corridor

0 0.75 1.5 3 Miles

- Future Airport
- Municipality
- Proposed Interchange
- Existing Interchange
- Interstate
- Highway
- Parish Road
- Private Road
- Proposed Arterial
- Existing Arterial
- Building
- Water
- Office
- Civic
- Light Industrial
- Industrial
- Commercial/Mixed Use
- Multi Family
- Single Family
- Rural
- Agricultural
- Parks and Rec
- Open Area
- Predicted Wetland



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