Infrastructure

Pump Station 59

East Baton Rouge Parish EMS Building

Introduction: **Infrastructure**

The capacity and quality of public facilities and services that serve East Baton Rouge Parish affect the quality of life enjoyed by those who live, work, and visit the entire Baton Rouge metropolitan area. These services are a major factor in determining the amount, location, and type of growth a community can anticipate. The East Baton Rouge City-Parish government administrators, together with its service providers, operate and facilitate the needs of the entire Baton Rouge community.

The underlying infrastructure that services the City-Parish area includes wastewater, drainage and water, utilities, and public rights-of-way. Newer development requires expansion of infrastructure and also requires ongoing maintenance. Asset and risk management is a continuous undertaking. In addition to these systems, public buildings also support society at large and should be considered an integral part of the infrastructure of the City-Parish. The infrastructure element provides an overview and assessment of the current City-Parish wastewater and drainage services along with recommendations to help Baton Rouge achieve and manage the growth reflected in the Vision for FUTUREBR.

Core Values and Aspirations of the Vision

A diverse group of residents and stakeholders representing all parts of East Baton Rouge Parish provided input through workshops, open houses, interviews, focus groups and survey discussions. Respondents consistently cited the following core values and aspirations they believed should be the foundation for building a vision for East Baton Rouge Parish.

Core values that relate to infrastructure:

Equity: All residents have access to a good education, public services, housing and job opportunities.

Safety: People feel safe where they live, work and play.

Healthy Environment: Natural resources are protected and conserved to provide active and passive recreational opportunities for current and future residents.

Sustainability: The future reflects the creativity and resiliency of East Baton Rouge Parish's young residents, with a focus on fiscal, physical, environmental, economic and equitable sustainability.

South Wastewater Treatment Facility

Part 1: **Wastewater**

Evaluation of the Existing System

The City-Parish operates a highly complex wastewater system that includes a combination of gravity sewers, lift stations, force mains with booster pumps, and treatment plants. Like many other cities across the nation, Baton Rouge experiences sanitary sewer overflows (SSOs) throughout its wastewater collection system.

Over the course of the 1980s and 1990s, the federal government, through the Clean Water Act, called for the elimination of SSOs and set more stringent wastewater treatment requirements. In 1989, the Parish entered into an agreement with the United States Environmental Protection Agency (EPA), Department of Justice, and the State of Louisiana to establish a formal program that would be recognized and supported by all parties. The resulting agreement, the Consent Decree, along with a few revisions, required the upgrade of the wastewater treatment plants in order to meet wastewater discharge permits limits, and upgrades to the sewer collection system, in order to reduce the number of SSOs. While there is still work to be done, compliance with these requirements has helped to improve water quality throughout the entire Baton Rouge area.

Updated capacity and upgraded transmission lines, pump stations, and storage tanks also need to be addressed throughout the City-Parish. Finally development is extending in a few new areas of the City-Parish, so there is also a need to provide services to these newly developed areas.

In 2002, Baton Rouge Metro Council, the EPA, and Louisiana Department of Environmental Quality entered into a consent decree. Several projects were incorporated into an overall Sanitary Sewer Overflow Control and Wastewater Facilities

Program (SSO Program) in order to address existing sewer overflow and wastewater treatment challenges in the City-Parish while at the same time planning for the future growth in the area. The SSO Program was created to be a comprehensive sewer improvement program designed to meet federal requirements, increase infrastructure capacity to support growth and economic development, improve the quality of life for residents of East Baton Rouge Parish, and protect the area's rich natural resources. The projects that were identified in the SSO Program were based on future population projections.

The current SSO program generally provides services and adequate capacity to these in FUTUREBR growth areas. Within areas where current

SSO service is not available, an evaluation will be required to determine the needs and services required for the potential growth.

Any development of future service needs identified by the Plan would likely incorporate areas of new development into the force mains constructed under the SSO Program. These areas may be served by one or more of the following options:

- Increased lateral sewer lines to the desired areas.
- Increased capacity at the storage tanks constructed under the SSO Program.
- Additional storage tanks constructed in these anticipated growth area(s).
- Increased capacity at one of the existing wastewater treatment plants.
- Construction of a new wastewater treatment plant.

Part 2: **Drainage**

Proposed Comite Diversion Canal
Source: The Advocate

Evaluation of Existing Conditions

East Baton Rouge Parish is geographically located at the outfall end of the Comite and Amite watersheds and includes numerous wetland areas. In the 1950s, a plan was developed jointly by the City-Parish, the Louisiana State Department of Public Works, and the U.S. Army Corps of Engineers to improve several major channels including Ward Creek, Claycut Bayou, Jones Creek and Hurricane Creek. Then a major capital improvements program was approved by the voters in 1965 consisting of 46 significant drainage projects. Since that time no major drainage improvement programs have been approved.

Considering the position of the Parish within the topographic landscape, the overall capacity of its drainage system is relatively good. This is due, in part, to the fact that many of the major channel improvements were based on runoff volumes using the Muse Curve, which statistically approximates a 70-year storm event. One of the major drainage issues facing the Parish is backwater that occurs during major storm events; however, most of this flooding is caused by conditions that exist beyond the limits of East Baton Rouge Parish.

Although the major channels are adequate for most storm events, the design of most subdivision drainage systems built since the 1970s was based on a shorter, ten-year storm event. Furthermore, the outfall channels from the subdivisions to the major channels in many cases have never been adequately improved.

REVISING OUR APPROACH TO DRAINAGE PATHWAYS

Over the years, the practice of channelization or concreting drainage pathways has led to unintended consequences such as increased flooding in other parts of the City-Parish and detracting from the ecological function and aesthetic value of the waterways. Whenever feasible, naturalization of stream banks is the preferred approach. Natural channels can be managed to accommodate the water flow of major storm events without channel incision or flash flooding.

For additional information, refer to the Environment and Conservation element.

Drainage Strategies

Four major drainage strategies have been identified within the Comprehensive Plan that should be addressed to meet the needs of the Parish: major channel improvements, Comite Diversion Canal and minor subdivision outfall connectors.

Channel Improvement

Drainage canals throughout the Parish require consistent preventative maintenance in order to effectively reduce the risk of flooding. Without such maintenance, drainage canals will not function as designed. In addition, many channels are undersized and could be expanded. Inundation of property during major storm events would be greatly mitigated by proper proactive maintenance and expansion of existing channels to accommodate increases in rainfall and run-off.

Comite River Diversion Canal

The Comite River Diversion Canal project consists of a 12-mile channel intended to divert as much as 12,700 cubic feet of water per second from the Comite River, Bayou Baton Rouge, Cypress Bayou and White Bayou to the Mississippi River near the Profit Island chute. Major components of the proposed project include a Comite River stage control structure and containment levee with emergency spillway, a diversion structure, channel stage control structure, and an 8-mile levee along the southern bank of the diversion channel. This project is just one component of a multifaceted flood protection solution of the Amite and Comite River basins.

Current activities include developing design and construction plans and specifications for several state highway bridges and other hydraulic structures. Construction has begun on the U.S. Highway 61 vehicle and railroad bridges but has been delayed by utility relocation which includes several pipelines and funding uncertainty. LADOTD is moving forward with acquisition of lands, easements, relocations, rights-of-way, and disposal. Funding for the total project will include local, state and federal sources.

Stormwater Master Plan

In light of the devastating flood event of 2016, the Mayoral Transition Report recommended a Comprehensive Parish Stormwater Master Plan. In 2017, the City-Parish initiated the development of a Comprehensive Parish Stormwater Master Plan, which will include a thorough review of the City-Parish's existing drainage systems and evaluate the capacity of regional drainage.

No Adverse Impact

With an increase in frequency and intensity of storm events, on-site drainage improvements must provide more capacity than currently required. Following development, sites must not increase their pre-development runoff rates or volumes by holding water on-site longer for possible infiltration or evapotranspiration before releasing it off-site. Reducing peak flow conveyance to drainage systems minimizes strain on existing systems. In addition, stormwater harvesting in the form of cisterns, eco-roofs, raingardens and other low-impact development designs should be encouraged. Education for storage and re-use of water should be undertaken to provide homeowners with alternatives to reduce run-off.

"No Adverse Impact" floodplain management is a managing principle developed by the Association of State Floodplain Managers to address shortcomings of the average local floodplain management program. The approach ensures the action of any community or property owner, public or private, does not adversely impact the property and rights of others. An adverse impact can be measured by an increase in flood stages, flood velocity, flows, the potential for erosion and sedimentation, degradation of water quality, or increased cost of public services. It extends beyond the floodplain to include managing development in watersheds where floodwaters originate. It does not mean "no development," but simply means that any adverse impact caused by a project must be mitigated. Mitigation is

recommended to be more than required by the minimum standards of the National Flood Insurance Program. These minimum standards have slowed the increase in flood damage, but do not stop it, nor do they account for effects of urbanization and climate change on future flood levels.

The tools to incorporate the No Adverse Impact principle to improve floodplain management are organized under seven building blocks:

1. Hazard identification and floodplain mapping
2. Education and outreach
3. Planning
4. Regulations and development standards
5. Mitigation
6. Infrastructure
7. Emergency services

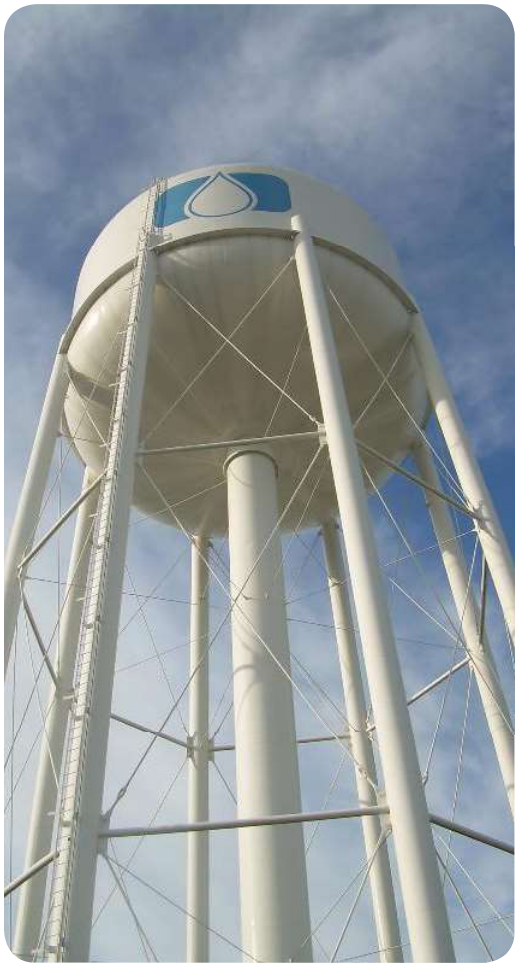
Locating Critical Facilities

For some activities and facilities, even a slight chance of flooding is too great a threat. Typical critical facilities include hospitals, fire stations, police stations, schools, storage of critical records, and similar facilities. These facilities must be given special consideration when formulating regulatory alternatives and floodplain management plans in order to ensure resiliency. A critical facility should not be located in a floodplain if at all possible. If a critical facility must be located in a floodplain, it should be provided a higher level of protection than the minimum requirements so that it can continue to function and provide services after the flood.

Part 3: **Drinking Water**

Water supply within the greater Baton Rouge area is provided by a private company, Baton Rouge Water Company. The company has provided water service to the Parish for over 50 years. They operate ground water wells in various sands of the Southern Hills aquifer system which underlie the greater Baton Rouge service area. Water from these sands is of excellent quality with a natural low hardness concentration and is not subject to surface water influences. The system is backed up by auxiliary diesel engines and generators providing backup during electrical power outages. Hurricanes Katrina, Rita, and Gustav served as perfect examples of the system's reliability – electrical power was off in much of the City after these storms, but the water kept flowing. For this water service, residents within the Parish pay a monthly water fee directly to the company.

The coverage area of the Baton Rouge Water Company has consistently grown as the company has planned for expansion of the Parish over the years. They are able to extend lines, drill new wells and accommodate additional development as needed. Several new wells and lines have been added in recent years, particularly in the faster-growing southern region of the Parish. It is anticipated that Baton Rouge Water Company will be able to keep pace with anticipated needs of the Parish as identified in this plan.



Baton Rouge Water Company

Part 4: **Public Buildings**

Adequate and efficient public services must be maintained to provide a level of service that will make the City-Parish a safe community with integrated and coordinated services for basic needs including food, shelter, medical care, safety, and human services. The City-Parish owns, operates, and maintains more than 150 buildings. These buildings include everything from wastewater treatment facilities to police stations to community centers. Currently there are five community centers, 14 libraries, and 57 buildings that house a variety of combinations for police, fire stations, emergency medical service (EMS), and sheriff locations.

The City-Parish is continually looking for ways to improve public service. One way to do this is by centralizing or decentralizing different public services to one or multiple buildings. For these reasons, public buildings should be carefully planned and programmed for resiliency.

In addition to their functional roles, public buildings should also be examples of design excellence. Proper and routine maintenance of these buildings will both ensure that there are no interruptions to public services and set an aesthetic standard for the surrounding area.

Baton Rouge Police Headquarters

Part 5: **Goals, Objectives and Actions to Achieve the Vision**

This section details the infrastructure goals, objectives and actions that will move East Baton Rouge Parish toward the community's Vision.

Goals are the big overarching ideas, changes or practices that are essential to realize the community's Vision.

Objectives establish specific, measurable, attainable and realistic goals that guide how the Comprehensive Plan is implemented in a way that will achieve the Vision.

Actions outline the steps needed to achieve the objectives.

Infrastructure Goals

1. Collect wastewater and provide effective treatment in an efficient, reliable, sustainable, and environmentally sound manner.
2. Reduce the impact of flooding.
3. Improve the drainage system to improve water quality.
4. Public buildings should be sustainably constructed, strategically located, and comprehensively planned.

Infrastructure Goal 1: Wastewater

Collect wastewater and provide effective treatment in an efficient, reliable, sustainable, and environmentally sound manner.

Objective 1.1

Improve the condition of the existing wastewater system and work to meet future demand.

Actions to support objective 1.1:

1.1.1 Undertake a scheduled sewer rehabilitation program and maintain and improve the existing wastewater system as needed.

1.1.2 Continue to dispose of wastewater in a manner that complies with the discharge permit issued through the EPA and LDEQ.

Objective 1.2

Improve construction design standards for all wastewater facilities.

Actions to support objective 1.2:

1.2.1 Continue to update and improve the standards adopted by the SSO program and utilize those standards for current and future wastewater improvements.

Objective 1.3

Develop a Comprehensive Wastewater Master Plan (CWMP) with adequate provisions for wastewater facilities in un-served areas.

Actions to support objective 1.3:

1.3.1 Ensure that the CWMP plan includes regional collection system and treatment facilities, major pump stations in areas adjacent to the trunk system, extension of existing collection systems, identification of designated funding sources, improvements for infill development, and other projects not specified by the Consent Decree.

1.3.2 Establish a program to plan and construct regional collection systems including treatment facilities, for those areas outside of the existing planned service area, in accordance with the Wastewater Master Plan.

1.3.3 Prioritize provision of and repair of wastewater service lines in lower-income neighborhoods within the urban service area.

1.3.4 Require properties located in proximity to existing trunk lines to connect to the municipal system.

1.3.5 Explore feasibility of alternative wastewater treatment and disposal methods that incorporate environmentally friendly practices.

Objective 1.4

Investigate sources of additional funding for accomplishing the wastewater objectives of the FUTUREBR plan.

Actions to support objective 1.4:

1.4.1 Investigate and propose methods for securing adequate funding meet the future wastewater needs of the Parish.

Infrastructure Goal 2: Drainage

Reduce the impact of flooding.

(See Environment and Conservation element)

Objective 2.1

Improve operation and maintenance of the drainage system throughout the Parish.

Actions to support objective 2.1:

2.1.1 Implement the manual of drainage criteria for use in the design of both public and private drainage facilities in the Parish. In the official record of permit approval or rejection relevant information and data should be cited, which specifies and confirms for permit applicants and the public, the correct procedures and methodology for computing run-off and hydraulic details for channels and drainage structures. Permissible design criteria established for detention, dams, levees, and inlets shall be confirmed in the permitting process. The permit record should include relevant supplemental data from the specified drainage criteria referring to:

- Existing flood ordinances and regulations.
- Rainfall frequency curves.
- Standard City-Parish drainage plans and details.
- Erosion control.

2.1.2 Implement a Parish-wide drainage maintenance program to ensure major drainage channels are maintained to a minimum standard of care by removing obstructing debris and structures.

Objective 2.2

Reduce the potential for flood damage to existing and future development.

Actions to support objective 2.2:

2.2.1 Investigate relevant funding sources to acquire and/or relocate floodprone structures when feasible.

2.2.2 Amend the UDC to include items such as drainage requirement incentives to secure donation of required right-of-ways for drainage improvements.

2.2.3 Continue to work with FEMA and LSU on evaluating ways to reduce the impact of flood damage on development and amend the UDC to reflect the recommendations.

Objective 2.3

Continue to develop and update the master plan for drainage addressing both current and projected future needs and improvements to the drainage system.

Actions to support objective 2.3:

2.3.1 The Planning Commission, the Department of Development, and the Department of Transportation and Drainage should work in partnership with FEMA and LSU to research, implement, and update the master plan for drainage.

2.3.2 Continue developing hydrologic and hydraulic modeling capability and techniques that may be utilized to predict the impacts of development and determine needed improvements within each drainage basin.

2.3.3 Develop a manual of green infrastructure alternatives.

Objective 2.4

Increase public awareness of drainage information.

Actions to support this objective include:

2.4.1 Continue programs promoting public awareness of flood prevention information and drainage design data.

2.4.2 Utilize FEMA guidelines, to develop a public outreach and education program specifically for drainage issues.

Objective 2.5

Promote regional coordination and cooperation to reduce potential flood damages in the Amite River and Comite River drainage basins.

Actions to support this objective include:

2.5.1 Provide adequate resources to coordinate drainage improvement projects.

2.5.2 Investigate funding sources for flood prevention grants and partnerships with state or federal agencies.

2.5.3 Support specific drainage improvement projects such as the Comite Diversion Canal sponsored or initiated by others which serve to improve drainage and reduce the threat of flood damages in East Baton Rouge Parish.

Objective 2.6

Ensure that adequate funds are allocated for improvements, operation and maintenance of the drainage system.

Actions to support this objective include:

2.6.1 Continue the capital improvements bond program as a means to secure adequate funding for designated drainage projects.

2.6.2 Provide appropriate matching funds for projects conducted in partnership with State and federal partners.

Objective 2.7

Promote intergovernmental and nongovernmental coordination.

Actions to support this objective include:

2.7.1 Continue collaboration within departments in the City-Parish government.

2.7.2 Collaboration with advocacy and professional groups on stormwater management.

Infrastructure Goal 3: Drainage

Improve the drainage system to improve water quality.

Objective 3.1

Improve ordinances related to drainage.

Actions to support objective 3.1:

3.1.1 Amend the UDC to address: stormwater best management practices, such as alternative treatment techniques.

3.1.2 Implement and manage stormwater best management practices in future City-Parish developments and projects.

Objective 3.2

Educate citizens and the development community about best management practices to improve water quality.

Actions to support objective 3.2:

3.2.1 Provide stormwater best management practice workshops for stakeholders, including but not limited to City-Parish staff, engineers, private developers, neighborhood associations, landscape architects and planners.

3.2.2 Develop tools for public education on drainage and water quality issues such as infiltration basins/rain gardens, cisterns, and hydrophilic landscape design.

3.2.3 Implement a program for City-Parish personnel education on water quality and drainage issues.

Infrastructure Goal 4: Public Buildings

Public buildings should be sustainably constructed, strategically located, and comprehensively planned.

Objective 4.1

Provide all residents with access to needed services.

Actions that support objective 4.1:

4.1.1 Create an intergovernmental building committee consisting of local, state, and federal officials to efficiently locate governmental offices throughout the City-Parish.

4.1.2 Ensure all government office locations are coordinated.

4.1.3 Create a platform to promote partnerships in the planning and funding of public buildings for future site-sharing facilities.

4.1.4 Ensure all the public buildings outlined in the City-Parish Emergency Operations Plan are properly prepared.

Objective 4.2

Develop and maintain modern policies, codes, regulations, and ordinances that guide and regulate public services, public buildings and health and human services.

Actions to support objective 4.2:

4.2.1 Develop public service facilities that are consistent with land use and transportation plans.

4.2.2 Ensure that public facilities are reasonably accessible to all residents, including all federal and state ADA regulations and rules.

4.2.3 Encourage the efficient use of existing public buildings and facilities, retrofitting and reprogramming them as changes in usage and priority demand.

Objective 4.3

Create a policy and procedures manual for all the creation, placement and operation of public buildings.

Actions that support objective 4.3:

4.3.1 Coordinate the planning of public buildings with the Planning Commission, the Department of Development, the Department of Building and Grounds, and other relevant departments.

4.3.2 Establish a process for identifying and initiating public building development and funding.

4.3.3 Make adequate funding available for building maintenance and ensure it is equitably distributed.

4.3.4 Ensure that buildings with the greatest need are given the highest priority for building maintenance.