# SECTION 6 INFRASTRUCTURE

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# INFRASTRUCTURE

# **INTRODUCTION**

The Infrastructure and Public Facilities Element of the Comprehensive Plan augments the other Elements of the Plan by identifying infrastructure investments that support many of the Plan's goals and policies.

High quality and dependable basic public infrastructure, such as clean water, reliable sewer, stormwater management, and an efficient street network, are essential to Gretna's future success. Cost effective and dependable services improve quality of life and make Gretna a more affordable and attractive place to live and work. Well built and well maintained facilities also help the City recover more quickly from damaging natural disasters and emergencies.

A significant factor in determining priorities among capital improvements is the level of service. The levels of service are the minimum thresholds necessary to adequately serve future development, as well as the minimum thresholds the City must provide for existing land uses.

The City selects and budgets for capital projects through the preparation of the annual budgetary process and makes emergency repairs as needed. The lack of a Capital Improvement Plan (multi-year plan for capital improvements) is inefficient and should be one of the City's top priorities moving forward so the City can adequately plan for infrastructure and capital needs in the future.

# SEWER/WASTEWATER

Gretna's wastewater treatment facility, located on the 1200 block of Burmaster Street, is controlled and operated by the Public Utilities Department. This facility was built in the early 1970s and is in good condition. The sewer system is comprised of a treatment plant and approximately 350,000 feet of main and sewerflow paths. Currently, the system is gravity fed from the property and discharges to one of many lift stations before heading to the treatment plant, ultimately discharging into the Mississippi River. The plant treats roughly three million gallons of wastewater per day, according to the Director of Public Utilities, who also stated that the current facility is at capacity. The Timberlane neighborhood is not on the City's treatment system, as it is serviced by the Parish, though annexed to the City in 2009.

There are a few areas in Gretna that experience regular wastewater backups when there are heavy rainfall events, as observed by the Department of Public Utilities. These recurring backups typically occur along Whitney Avenue and in the Bellevue neighborhood. To alleviate this problem, these pipes should be replaced and sized at an appropriate capacity.

The current sewer and wastewater infrastructure is being maintained as needed, but the Department is not able to make all necessary capital improvements. The Director of Public Utilities finds that the billing rates are average within the State of Louisiana, and they expect a budgetary surplus in two years from the time of this Comprehensive Plan. This surplus would allow for more strategic maintenance and upgrades to the system.

According to interviews with the Director of Public Utilities, a wastewater treatment facility should be able to provide double the capacity that is needed daily. The City's facility is currently able to meet this need. But if the population were to rise to around 25,000 people, about a 7,000 person increase, this would add another 1 million gallons of wastewater needing to be treated per day, maxing out the current plant. The City of Gretna would then need to build a new facility to alleviate the burden on the current treatment plant. It is estimated that a new treatment plant would need between three and four acres of property, and cost between \$8 and \$10 million to construct.

The City should document future wastewater needs and incorporate them into a Capital Improvement Plan. This plan should be focused on improving the capacity and efficiency in areas of Gretna where population and business growth are expected. The plan should also create an interactive, digital database with an up-todate infrastructure inventory for the Utility Department to utilize for their improvement and maintenance needs.



Figure 6.1: Drinking Water Infrastructure

# **DRINKING WATER**

The City of Gretna has its own potable water treatment plant, run by the Department of Public Utilities, which produces an average of 2,500,000 gallons of drinking water a day to over 6,000 households and businesses. The water treatment plant is located at 100 5th Street. The Timberlane neighborhood is not on the City's drinking system, but is serviced by Jefferson Parish. The Mississippi River provides the water that is treated by the City for drinking water. The system has approximately 370,000 feet of water lines, over 550 hydrants, and two water towers. Currently, the Department of Public Utilities has the capacity to supply enough water to the City of Gretna even if the population doubled.

In regard to the City's drinking water supply, saltwater intrusion into the Mississippi River poses concern for the future quality of fresh water resources. More on saltwater intrusion can be found in *Element 9: Environmental*.

### DRAINAGE

The City of Gretna relies on gravity fed drainage infrastructure. The City has approximately 370,000 feet of pipe, 50 storage channels, 650 manholes, and over 5,000 catch basins. There are also three main retention basins in the City: the City Park retention basin, the Virgil Street retention basin, and the Race Track detention basin. The latter two are located in the McDonoghville neighborhood. The lake in City Park receives stormwater runoff from the surrounding Bellevue neighborhood, while the retention basin on Virgil Street acts as an overflow for the McDonoghville neighborhood.

#### **1. VIRGIL STREET RETENTION BASIN**

The Virgil Street retention basin is just under three acres, receives drainage from the McDonoghville neighborhood. The inflow of water is along Virgil Street near the intersection with Lebouef Street and outflows at the intersection of Anson Street and L.B. Landry Avenue. This retention basin is kept at a consistent water level and is under the control of the Jefferson Parish MS4 permit. The water quality has been tested in the past by the Louisiana Department of Wildlife and Fisheries (LDWF), which has also stocked the retention basin so it can be used as a recreational amenity. The City of Gretna should consider treating this retention basin not only as part of their drainage infrastructure, but also as an environmental and recreational asset. The sides of the retention basin can be enhanced and planted with native grasses and plant species to improve the



Figure 6.2: Virgil Street Retention Basin

water quality of the surrounding runoff. A sand filter can also be installed to clean the collected runoff before it enters the retention basin. More on how to improve water quality can be found in *Element 9: Environmental*. The City should also partner with the LDWF to routinely check the water quality and establish this site as a largescale recreational asset for the population north of the Westbank Expressway, since recreational amenities are lacking there. More on recreational opportunities for the Virgil Street retention basin can be found in *Element 6: Parks & Recreation*.

#### 2. CITY PARK LAKES

The City Park lakes make up roughly eight acres, also acting as retention basins for the Bellevue neighborhood. Stormwater runoff flows into the larger of the two lakes at Claire Avenue and 32nd Street, while the smaller lake has an inflow in the middle of Gretna City Park near the BMX track. The lakes have been actively monitored for water quality by the LDWF, as the Gretna Department of Parks and Recreation are actively working to enhance the riparian edges of the lakes so they can be used as recreational assets. To improve the water quality in the City Park lakes, efforts should be made to clean the water before it enters the lakes. This can be done by creating a treatment system of green infrastructure facilities to filter the water upstream before it enters the pipes and reaches the lakes themselves. More on the improvement to the City Park lakes is discussed in Element 6: Parks & Recreation.

#### **3. RACE TRACK DETENTION BASIN**

The Race Track detention basin was designed to capture and store stormwater runoff in the area of McDonoghville from the Parish line to the north, the railroad track to the east, Burmaster Street to the south, and Hancock Street to the west. This area of McDonoghville experiences frequent repetitive loss after heavy rainfall events.

#### **3. DRAINAGE CANALS**

Other than the water storage in the three retention basins, all stormwater that falls within the City of Gretna enters existing street infrastructure, which then flows into open drainage outfall canals: either the Hero or Whitney Canals. This stormwater eventually ends up in the Intercostal Waterway. The drainage canals throughout Gretna, shown in *Figure* 6.6, vary in capacity, design, and size: enclosed or open air with either grass edges or lined with concrete. Overall, the canals are in fair condition and can handle the capacity, with the exception of the Whitney Canal and the 25th Street Canal.

There are persistent issues at the Whitney Canal where it crosses under the railroad tracks along Belle Chasse Highway. The railroad structure greatly reduces the flow capacity of the water under the tracks, creating backup in the New Garden Park neighborhoods and causing regular yard and street flooding. The City of Gretna should begin discussions with the railroad owner, Rio Grande Pacific Corporation, to seek improvements to their structure that would allow the appropriate amount of water flow from the Whitney Canal into the Verret Canal south of Belle Chasse Highway.

The development of the Westside South Shopping Center dramatically increased the amount of impervious surface in New Garden Park, thus increasing the strain on the drainage system of the area. The City should limit the amount of impervious surface that is allowed on new developments in the area, and also encourage the Shopping Center to retrofit its large, concrete-paved parking lots. The installation of bioswales and pervious paving can vastly reduce the site's runoff and the drainage burden on the entire neighborhood.

The 25th Street Canal, located in the Jonestown neighborhood, also has limited capacity for the amount of water that is flowing into it. There is a project in the works between the City of Gretna and the Federal Government to increase the capacity of the Canal and improve its aesthetics. The Canal will need to have a net increase in capacity, but it is not recommended that



Figure 6.3: City Park Lake



Figure 6.4: Race Track Detention Basin



Figure 6.5: Whitney Canal at Belle Chasse Highway



Figure 6.6: Drainage Infrastructure

the Canal be enclosed. This Canal should be developed as a neighborhood amenity with passive recreational features. Connecting neighborhoods to recreational facilities is discussed further in *Element 6: Parks and Recreation*.

Moving forward, the City should eliminate the practice of enclosing open-air canals unless absolutely necessary. Open-aired canals provide greater capacity and water quality benefits for the runoff and outflow that is discharged into them. More information on the benefits of open air canals can be found in *Element 9: Environmental*.

Because of the City's relatively flat elevation, limited drainage infrastructure capacity, and limited funding to upgrade the existing drainage system, it is recommended that alternative drainage infrastructure be implemented throughout the City, including green infrastructure. Green infrastructure uses natural processes to alleviate localized flooding, reduce subsidence, and improve water quality issues. Green infrastructure facilities are meant to manage water where it lands, temporarily detain the water while allowing some of the water to absorb into the ground and be taken up by plants, and then slowly release the remaining water into the drainage system after the grey infrastructure system has had a chance to at least partially drain.

#### 4. GREEN INFRASTRUCTURE & STORMWATER MANAGEMENT

The large area of impervious surfaces in Gretna contributes to an excessive amount of stormwater runoff. This is typical of traditional development patterns in cities and surrounding areas. The introduction of impervious concrete or pavers will increase a site's permeability and reduce localized flooding. Parking lots usually contribute the most to a site's rainwater runoff, therefore stormwater management facilities to reduce the runoff rate by implementing pervious surfaces and subsurface storage should be required. The City of Gretna should limit the amount of impervious surfaces when commercial, industrial, and government properties are developed or redeveloped in the new zoning code.

Besides pervious paving, there are other ways to manage stormwater that include a greener approach. These include bioswales, bioretention cells, and detention basins. All of these facilities utilize native plant species to aid in managing stormwater while also increasing the removal of pollutants from runoff. The plants also contribute to the process of evapotranspiration, therefore reducing the total amount of runoff that is discharged into the drainage system. Improvement of water quality would assist in complying with the Parish and City's MS4 Permit requirements.

#### A. Stormwater Utility Fees

Many cities and states have introduced stormwater utility fees. These are fees that are assessed on private property that allow the municipalities to raise money for drainage infrastructure maintenance and improvements. In most cases, municipalities use a portion of these fees to install green infrastructure on publicly owned land such as parks and street rights-of-way. This investment from the City benefits properties surrounding the green infrastructure, but also the larger drainage system since there would be more funds for maintenance and repairs.

The fees are assessed in many different ways. One way is to assign a standard annual fee for various lot sizes for both commercial and residential properties. Another way is to assess a fee based on the lot size, the amount of impervious surface on site, and the land use of the site. The latter type of fee assessment can also give discounts for properties that manage all or a portion of the stormwater that falls on their site, therefore reducing their fee.

The City of Gretna should consider implementing a stormwater fee after determining the amount of revenue it could reasonably and fairly generate. The fee could be implemented in a series of steps that gradually increase until the full fee amount is realized. One way to introduce the fee in a manner that would be more acceptable to the community is to have neighborhoods, or smaller watersheds, opt-in to the fee on a voluntary basis. The revenue collected from each neighborhood would be used for specific improvements on public land in that neighborhood, giving the residents a sense of ownership over the projects.

# **PUBLIC SAFETY**

#### **1. POLICE DEPARTMENT**

The Gretna Police Department (GPD) provides law enforcement and emergency response services for the City of Gretna. The Gretna Police Department headquarters is located at 200 5th Street.

The City of Gretna has a strong reputation of having safe neighborhoods compared to surrounding communities. Safety is one of the first attributes listed by community members when asked why Gretna is a great place to live. As shown in *Table 6.1,* Gretna has a significantly lower rate of violent crimes than in New Orleans and a comparable rate to Westwego.

The GPD attributes this feeling of safety among residents and the lower rate of violent crimes to their long-standing community based policing techniques. According to interviews with the Police Department in June 2017, the GPD has led the State of Louisiana in community policing techniques, providing a model for other State departments to replicate.

Even so, the GPD continues to strive to create a stateof-the-art police department that uses intelligence software and body cameras to inform and put trust in policing strategies. The Department is acquiring body cameras for all officers to wear, a program that will be fully implemented by the end of 2017. The Department needs additional staff to be trained in the latest technological advances and analytics of field intelligence so that the GPD can be more proactive in their policing.

Currently residency is not required for officers of the GPD, something that could be attributed to housing affordability within city limits. As recommended in *Element 4: Housing*, developing a partnership with the Good Neighbor Next Door Program could offer discounts on home prices to police officers as well as other civil servants, thereby making housing more affordable for them. More on workforce housing can be found in *Element 4: Housing*.

#### 2. FIRE DEPARTMENT

The David Crockett Steam Fire Company No. 1 is the oldest continuously active, volunteer fire company in the United States. Located at 1136 Lafayette Street in the Old Gretna neighborhood, it is contracted by the City of Gretna to protect life and property through its fire protection service and paid by revenues collected within

the corporate limits of the City of Gretna. In 2015, the Gretna Fire Department (GFD) responded to over 400 fire, rescue, and mutual aid requests. The department is a combination of 18 paid and 138 volunteer firefighters. There are four stations in the City, which are shown on *Figure* 6.6.

The GFD currently has a Class 2 Insurance Services Office (ISO) rating, and has adequate fire suppression capacity in all areas of the City. The GFD does routine inspections of businesses around the City to ensure they are up to code.

As the Gretna Fire Department (GFD) is mostly comprised of volunteers, it is important to continually retain an active, fully staffed department. According to a study completed in 2015 for the National Volunteer Fire Council, the top reason for low recruitment is the lack of awareness that a department is in need of volunteers (www.nvfc.org). It would be advantageous for the Gretna Fire Department to conduct an outreach campaign and make a call for volunteers. One way to recruit would be to have an open house event that invites interested parties to come to the fire houses and learn what it means to be a volunteer firefighter. It is also important for the GFD to adequately train volunteers after they have been recruited. Training exercises are most successful when they can be conducted online, through hands-on courses, and when done in conjunction with the people they will be working with.

Table 6.1: Crime Comparisons in 2015														
City	2015 Population	Total Crimes in 2015	Violent Crimes	Percentage of Violent Crimes compared to Total Crimes	Murder & Nonnegligent Manslaughter	Rape	Robbery	Aggravated Assault	Property Crime	Percentage of Property Crimes compared to Total Crimes	Burglary	Larceny Theft	Motor Vehicle Theft	
Gretna	17,871	610	53	8.7%	-	3	16	34	557	91.3%	88	453	16	
New Orleans	393,447	18,979	3,736	19.7%	164	409	1,497	1,666	15,243	80.3%	2,898	9,828	2,517	
Westwego	8,547	273	23	8.4%	1	1	3	18	250	91.6%	47	191	12	
Source: FBI Unit	Source: FBI Uniform Crime Reporting (UCR).													



Figure 6.7: Fire Department Infrastructure

## RECOMMENDATIONS

Infrastructure and public facilities should meet the City's current and future needs by providing acceptable levels of service in a reliable, efficient, economic, and environmentally responsible manner for existing and future residents and businesses. The primary recommendation is to plan for the future of the City's infrastructure by continually assessing its needs through a Capital Improvement Plan (CIP), which is used by municipalities to evaluate and prioritize infrastructure work in their jurisdiction. The CIP for Gretna will create a complete inventory of all infrastructure, including roads, pipes, and canals, along with a plan for regular maintenance. The CIP should include an assessment of the condition of the infrastructure, and a 5, 10, and 15 year plan on how it should be repaired or upgraded. Further, the CIP will identify maintenance and repair cost sources within the normal operating budget as well as funding sources for new infrastructure for streets, drainage, water, and wastewater that may be needed. Once established, the CIP can be utilized to find additional funding outside of the normal operating budget to support special projects and aid in the implementation of improvements.

Gretna should also create a Stormwater Management Plan for the City, which should include computer modeling of their existing drainage infrastructure. The Stormwater Management Plan would aid City leadership in identifying the areas that are in the greatest need of improvements. It would also determine how much storage is needed to address the problems, whether that be through pipe upgrades, green infrastructure installations, or a combination of both. The model should be used as a guide for all drainage infrastructure improvements, and should be updated when projects are completed. This modeling analysis will ultimately aid Gretna's Department of Public Works to more efficiently target funding.

# GOALS

#### Goal 1: Prioritize the rehabilitation of existing infrastructure and development of new infrastructure.

#### **Objective 1.1:**

Ensure that infrastructure projects receive increased budgetary priority.

#### **Objective 1.2:**

Create a Capital Improvement Program (CIP).

#### **Objective 1.3:**

Develop a comprehensive list of external funding sources for infrastructure rehabilitation and new infrastructure development while building a capacity for acquiring external funding.

#### **Objective 1.4:**

Study the cost of improving the wastewater system in areas of the City that are expected to increase in population.

#### Goal 2: Improve Gretna's stormwater management and drainage system.

#### **Objective 2.1:**

Create a Stormwater Management Plan (SMP) for the City of Gretna to guide water management strategies in a comprehensive way. Create and utilize a new position of Chief Resilience Officer that has broad oversight of all planning, land use, and capital projects.

#### **Objective 2.2:**

Require on-site stormwater management and limited impervious surfaces for new development and substantial redevelopment.

**Objective 2.3:** Preserve and enhance natural drainage.

#### **Objective 2.4:**

Renaturalize canals.

#### **Objective 2.5:**

Implement green infrastructure facilities and low impact development principles in public projects.

#### **Objective 2.6:**

Educate residents and business-owners about stormwater management.

#### Goal 3: Improve and maintain Gretna's public safety reputation.

#### **Objective 3.1:**

Maintain financial support and staffing needs for the fire and police departments.

#### **Objective 3.2:**

Educate residents and business-owners about public safety leadership, operations, and volunteer initiatives.

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