



**DRAINAGE DESIGN
THAT MAKES SENSE**



CALCASIEU PARISH POLICE JURY

DRAINAGE INITIATIVE PUBLIC UPDATE

Updated August 25, 2016

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INTRODUCTION

Over the past several months, the Calcasieu Parish Police Jury has been working to develop both short- and long-term approaches to help address Calcasieu Parish's growing flooding problems.

These planning efforts have taken into account the valuable feedback of area stakeholders and Calcasieu Parish residents, much of which was gathered earlier this year in the form of a series of public open houses and public comment period. The feedback, requests, and stories shared with us through this outreach process were extremely impactful to our planning process and how we must address our drainage-related needs through short- and long-term infrastructure planning.

Since then, Calcasieu Parish officials have been working to take this feedback and apply it in the form of proposed drainage policies and project-based drainage programs that would deliver short-term drainage fixes while establishing a strong, science-based foundation for how Calcasieu Parish should continue to grow in tandem with the tremendous growth the region has and will continue to experience for years to come.

These efforts include the development of a:

- **Drainage Policy Framework**, which seeks to define how new development should be approached parish-wide moving forward;
- **Capital Improvements Program**, a new approach to short-term drainage management for Calcasieu Parish whereby drainage improvement projects will be identified, prioritized, and selected annually based on sound science and engineering criteria and available funding sources, in close coordination with city and gravity drainage district representatives;
- **Drainage Management and Enforcement Structure**, which identifies drainage management and enforcement functions and the proposed entity responsible for each moving forward (e.g., Police Jury, individual cities, and gravity drainage districts);
- **Proposed Funding Structure** to help fund these capital improvement needs – one that leverages all available existing funding streams such as the current Police Jury Road & Drainage Property Tax, local matches in the form of existing Gravity Drainage District property taxes, state or federal grants as available, and a new drainage impact fee that will be initiated on all *unmitigated* new development and re-development; and
- **Calcasieu Drainage Coalition**, “the glue” that helps to ensure policies and ordinances are both developed and remain aligned at the parish and city level, as well as to coordinate capital project programming and policy/ordinance enforcement moving forward.

We know that solutions to reduce parish-wide flooding issues must be put in place now in order to ensure the future of Calcasieu Parish is one that our children and grandchildren can call home for years to come. More than 10 years have passed since we last made substantive changes to our Parish's drainage policies, and since then, economic growth in our region has accelerated at a rate that outpaces most other urban areas across the nation. This growth is great for our community, but it requires us to be smart about proactively shaping it.

To that end, on August 25, 2016, the above concepts and enclosed attachments were submitted to the Calcasieu Parish Police Jury's Drainage Committee, and their approval was requested to move forward with seeking public input and comment on each of these proposals we've developed. We know that none of these approaches will succeed, nor will they be as impactful as they can and should, without public input and support.



We hope that you will review these proposals and related recommendations carefully, and after reviewing we welcome any feedback, thoughts, questions, or concerns you may have about the direction in which we are headed, using the form below. Our planning team will be accepting comments on these concepts and attachments until September 16, 2016, which may also be submitted by mail to the CPPJ Drainage Design Planning Team, 1011 Lakeshore Drive, Suite 614, Lake Charles, LA 70601. Or, you may contact the Calcasieu Parish Police Jury Administrator's office with comments or feedback by calling (337) 721-3510.

Moving forward, we will review any comments we receive in depth, and incorporate that feedback into a final set of policies that positions Calcasieu Parish to be able to more effectively accommodate long-term growth – which will then guide how we develop both parish-wide and city ordinances, in coordination with our partners at the cities of Calcasieu Parish – and a capital improvements program focused on addressing short-term, project-based needs in alignment with a science-based approach to prioritizing projects and funding mix to support their implementation.

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DRAINAGE POLICY FRAMEWORK

FOR THE PROTECTION OF PRIVATE PROPERTY AND THE COMMUNITY'S DRAINAGE WATERSHED RESOURCES

The following drainage policy framework is intended to serve as sustainable drainage design and construction criteria for Calcasieu Parish, and the basis upon which parish-wide and city-level ordinances will be developed.

PROPOSED REQUIREMENTS FOR DRAINAGE DESIGN AND CONSTRUCTION CRITERIA

All new development activity must meet or exceed the following:

1. Maintain or lower existing water surface elevation profiles entering and exiting new developments
2. Protect and enhance flood storage volumes within the established 100-year floodplain
3. All new structures to follow minimum freeboard requirements

SPECIFIC DESIGN CRITERIA AND CONSTRUCTION REQUIREMENTS

- 1. Maintain or lower existing water surface elevation profiles entering and exiting new developments**
 - a. Limit post-development peak flow rate to designated pre-developed flow rate
 - b. Designs must allow for backwater condition of receiving outfall
 - c. Detained storage volume based upon 25-year storm event
 - d. Outflow structures will address 2-year through 100-year spectrum of storms
 - e. Requirements may be reduced by **Low Impact Development** construction
- 2. Protect and enhance flood storage volumes within the established 100-year floodplain**
 - a. Applies to all areas within the established 100-year floodplain
 - b. No net loss of flood storage volume below designated flood elevation
 - c. Excavation utilized to offset any reduction of storage volume must be within same watershed and hydraulically connected
 - d. A zero-rise certification required for any mitigated fill or structure placed within a designated floodway buffer
- 3. All new structures to follow minimum freeboard requirements**
 - a. All new structures required to obtain building elevation certification
 - b. Within FEMA 100-year flood zone: 1 foot above designated flood elevation
 - c. Outside FEMA 100-year flood zone: 1 foot above nearest designated flood elevation
 - d. All areas: 1 foot above parish record inundation elevation
 - e. All areas: 1 foot above center line elevation of street
 - f. All areas: 1 foot above nearest downstream sanitary sewer manhole



CAPITAL IMPROVEMENTS PROGRAM

The proposed Calcasieu Parish Capital Improvements Program (CIP) will serve as a critical mechanism to identify, prioritize, select, fund, and implement capital drainage projects that provide short-term relief to Calcasieu Parish residents.

Through the program, as proposed, the Calcasieu Parish Police Jury will take the lead role on the development and maintenance of the program, soliciting comprehensive input from the cities of Calcasieu Parish, as well as gravity drainage districts. This input would then provide a basis upon which to consider specific criteria regarding the type of project, benefit-cost, structures or citizens impacted, availability of matching funds, and more – criteria developed based on strong engineering fundamentals and best practices for capital project prioritization, which are also structured to ensure project allocations to smaller areas of the parish. The program would serve as a three-year revolving program, updated annually beginning with a 2017 slate of projects to consider. Any such projects have not been fully analyzed in accordance with these criteria; currently, we (the Parish) are requesting public comment on the basis of this program, the criteria which will inform how projects are selected and prioritized, and the manner in which it is managed over time.

The criteria for project prioritization within the CIP are as follows:

- Water course types
- Flow reduction project
- Impervious area reduction project
- Flood zone reduction project
- Existing right-of-way
- Number of citizens impacted directly
- Structures directly impacted
- Flow (Q) cubic feet-per-second
- Benefit-cost analysis (based on structure)
- Matching funds

Each of these criteria will be evaluated based on a point system; depending upon how the project fits each criterion, it will be assigned anywhere from zero to five points, with greater points assigned based on a more substantial impact or “fit” within the criteria. Below is an example and sample project, with sample scoring, intended to demonstrate how a project might be scored through this approach.

Function	Point Scale	Sample Scoring
Water Course Types	<ul style="list-style-type: none">• Minor Water Course = 1• Intermediate Water Course = 3• Major Water Course = 5	5
Flow Reduction Project	<ul style="list-style-type: none">• Minor Water Course = 1• Intermediate Water Course = 3• Major Water Course = 5	5



Function	Point Scale	Sample Scoring
Impervious Area Reduction Project	<ul style="list-style-type: none"> • Minor Water Course = 1 • Intermediate Water Course = 3 • Major Water Course = 5 	0
Flood Zone Reduction Project	<ul style="list-style-type: none"> • Minor Water Course = 1 • Intermediate Water Course = 3 • Major Water Course = 5 	5
Existing Right-of-Way	<ul style="list-style-type: none"> • 0' – 20' = 1 • 20' – 40' = 2 • 40' – 60' = 3 • 60' – 80' = 4 • > 80' = 5 	3
Number of Citizens Impacted Directly	<ul style="list-style-type: none"> • 0 – 499 = 1 • 500 – 999 = 2 • 1000 – 2999 = 3 • 3000 – 4999 = 4 • > 5000 = 5 	4
Structures Directly Impacted	<ul style="list-style-type: none"> • 0 – 99 = 1 • 100 – 299 = 2 • 300 – 499 = 3 • 500 – 599 = 4 • > 600 = 5 	3
Flow (Q) Cubic Feet-Per-Second	<ul style="list-style-type: none"> • 0 – 499 = 1 • 500 – 999 = 2 • 1000 – 2999 = 3 • 3000 – 4999 = 4 • > 5000 = 5 	4
Benefit-Cost Analysis (Based on Structure)	<ul style="list-style-type: none"> • \$70,000 - \$499,999 = 1 <ul style="list-style-type: none"> - Structure Benefit Multiplier: \$1,000 • \$500,000 - \$999,999 = 2 <ul style="list-style-type: none"> - Structure Benefit Multiplier: \$1,000 • \$1,000,000 - \$1,999,999 = 3 <ul style="list-style-type: none"> - Structure Benefit Multiplier: \$3,000 • \$2,000,000 - \$2,999,999 = 4 <ul style="list-style-type: none"> - Structure Benefit Multiplier: \$3,000 • > \$3,000,000 = 5 <ul style="list-style-type: none"> - Structure Benefit Multiplier: \$5,000 	4



Function	Point Scale	Sample Scoring
Matching Funds (Points for Each – Local, State, & Federal)	<ul style="list-style-type: none">• 0 – 25% = 1• 25 – 60% = 3• > 60% = 5	5
Sample Project Point Total		38

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DRAINAGE MANAGEMENT AND ENFORCEMENT STRUCTURE

PROPOSED FUNCTIONS AND RESPONSIBILITIES

To ensure the effective management, enforcement, and ongoing implementation of both the proposed policy framework and capital improvements program, the Parish is proposing the following functions and responsibilities as part of this drainage planning initiative.

Function	Currently Responsible	Proposed Responsibility
Create policies and ordinances for development	<ul style="list-style-type: none"> Police Jury Cities 	<ul style="list-style-type: none"> Police Jury, cities, and gravity drainage district policies and ordinances should be similar
Enforce policies and ordinances for development	<ul style="list-style-type: none"> Police Jury Cities 	<ul style="list-style-type: none"> Police Jury Permitting Dept. City Permitting Depts.
Administer parish-wide Capital Improvement Program	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Police Jury Drainage Section Cities and gravity drainage districts continue overseeing small watershed lateral projects
Drainage lateral maintenance	<ul style="list-style-type: none"> Gravity drainage districts 	<ul style="list-style-type: none"> Gravity drainage districts
“Street drainage” projects and maintenance	<ul style="list-style-type: none"> Police Jury Cities 	<ul style="list-style-type: none"> Police Jury Cities
“Clean water” stormwater enforcement (water quality)	<ul style="list-style-type: none"> Police Jury Cities 	<ul style="list-style-type: none"> Police Jury Cities

Once the final policy framework is approved by the Calcasieu Parish Police Jury and ordinances are developed at both the Parish and city levels to match those approved policies, this responsibility matrix would then serve as a basis for how key functions are managed and their activities enforced on a regular basis.



PROPOSED FUNDING STRUCTURE

To ensure adequate funding exists to implement a meaningful set of projects each year, as prioritized based on the proposed criteria, a mix of funding sources are proposed to be utilized as part of the overarching project-based funding structure.

These funding sources include:

- Portion of existing Police Jury Road & Drainage Property Tax;
- Portion of Gravity Drainage District property taxes (as local match dollars to fund projects in specific areas from which the match dollars are assigned); and
- State and federal grants that may become available.

In addition to these existing funding streams, the Parish is proposing the initiation of a drainage impact fee on unmitigated new development and re-development. This fee will utilize a fee rate based on dollars/cents per square foot of impervious surface, whereby the appropriate permitting department will collect fees as part of the development permitting process. The revenues from these fees would then be used for regional detention needs and major capital projects.

This funding structure currently exists as a high-level approach; details still to be finalized include the fee rate based on dollars/cents per square foot of impervious surface and how those fees would ultimately be collected, which vary greatly across other communities. Once those details are finalized in draft form, they will be publicly presented to the Police Jury and relevant municipal governing authorities for consideration and ultimate adoption.



CALCASIEU DRAINAGE COALITION

The final but overarching layer to the current drainage management proposals features the Calcasieu Drainage Coalition. This group is proposed to ensure consistent enforcement of policies and ordinances for development, or “the glue” to ensure these items are both developed and remained aligned at the parish and city level. It also will exist to coordinate capital project programming and policy/ordinance enforcement moving forward.

The coalition’s composition is proposed to include staff representatives from the Parish, cities, and gravity drainage districts – potentially including public works directors, planners, superintendents, engineers, DOTD representatives, and others as needed.

From an enforcement and accountability perspective, the coalition will meet frequently in the **short-term** to help transition any approved policy framework into ordinances that mirror one another at both the Parish and city levels. Longer-term, the coalition will meet quarterly to discuss capital improvement programming and coordinate policy and ordinance enforcement, ensuring alignment continues to be maintained across all the relevant management and enforcement governmental entities. Finally, following disaster or emergency events, including major rain events, the coalition will meet to re-assess project needs and make any necessary changes to related programming, as agreed to by a majority of coalition participants.

In short, this coalition will serve a critical role in ensuring a comprehensive, ongoing approach to drainage management throughout Calcasieu Parish.

