



City of Covington

Low Impact Development Program Final Report

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DETENTION BASIN SOURCE: READY.NOLA.GOV

Introduction

Growth and development can expand community opportunities by attracting new residents, businesses, and investments. However, development can also bring negative environmental impacts on a community's natural resources such as pollutants from stormwater runoff in water bodies and an overall reduction of natural areas. Communities throughout the United States are seeking ways to balance development with environmental protection. As such, they are implementing Low-Impact Development programs and regulations that require or encourage practices which reduce the environmental impacts of development. These most often include the management of stormwater on-site, resulting in an improvement in water quality and other co-benefits like flood risk reduction.

To better manage stormwater and protect watersheds, low-impact development policies should be woven into community ordinances and regulations. Related policies, such as landscaping and parking requirements or minimum lot sizes and subdivision regulations, should complement strong stormwater standards and make it easier for developers to meet multiple requirements simultaneously.

This report is intended to help the City of Covington evaluate its local development plans and regulations to identify revisions that allow or require site developers to minimize impervious cover, conserve natural areas, and use best practices to manage stormwater, reduce community flood risks, improve water quality, and lower the overall impact of development to the watershed. Included in this report are the audit of existing city ordinances, proposed revisions to those ordinances, and recommendations for complementary initiatives.

Existing Codes, Practices, & Recommended Approaches

Overview of Audit Report

This report is based primarily on two existing development audit tools: The Environmental Protection Agency's (EPA) Water Quality Scorecard and the Center for Watershed Protection's (CWP) Code & Ordinance Worksheet. Both audit tools are designed to help communities find and address gaps and shortcomings in their plans, codes, and ordinances that prevent or inhibit the community's larger environmental and water quality goals. In particular, the EPA's scorecard measures the impacts of development on water quality as it primarily focuses on a community's responsibilities under the Municipal Separate Storm Sewer System (MS4) program. Because the City has an existing MS4 Permit, the EPA tool provides the foundational basis for this audit. The CWP Worksheet provides additional tools and questions for consideration and is used to supplement the EPA scorecard.

The audit focuses on development and land use regulations in the City's Code of Ordinances (Code) as well as adopted plans and policies. The primary documents assessed for this audit are the City's Code of Ordinances, Comprehensive Plan (Comp Plan), and MS4 Permit and Stormwater Management Plan (Stormwater Plan). It should be noted that the City was in the midst of updating its comprehensive plan at the time of this assessment and therefore, most of the audit efforts focused on existing ordinances and policies.

The audit results are divided into five sections, based on the EPA's Water Quality Scorecard, to focus the code and ordinance review on relevant areas. The sections are:

- **Protection of natural resources and open space**
- **Promotion of efficient, compact development patterns.**
- **Design of complete, smart streets.**
- **Encouragement of efficient parking.**
- **Adoption of green infrastructure stormwater management practices.**

Each section consists of the assessment of existing ordinances and the associated proposed approaches to advance low impact development including specific revisions to the city's ordinances that incorporate low impact development requirements.

Low Impact Development Audit & Proposed Approaches



Protection of Natural Resources and Open Space

Are development policies, regulations, and incentives in place to protect natural resource areas and critical habitat?

The City of Covington has experienced growth and development but seeks to balance it with the preservation of its historic urban character and its natural environment. The City has a list of open spaces, parks, and recreational areas but critical or environmentally sensitive areas and other natural resources are not identified. As for preservation, certain trees are protected within the ordinance (Appendix B Section 4.2), varying by size. There are the permits required for construction, such as wetlands permits, but not much direction on protecting these areas. There are zoning codes in place (Appendix B) such as the Open Space/recreation zoning but is primarily intended for park space rather than protection of environmentally sensitive areas or areas that perform critical ecological services. Overall, the City has in place the planning framework to protect natural resource areas and critical habitats, but is lacking the specific policies, regulations, and incentives required to protect said areas.

Are no-development buffer zones and other protective tools in place around wetlands, riparian areas, and floodplains that improve/protect water quality?

The City code, in section 18-122-4b requires a minimum uncut buffer of 100 feet along both banks of established natural stream beds, as named in the ordinance:

Waterway buffering. A minimum uncut buffer of 100 feet in depth along both banks (mean low water line) when applicable of all established natural stream beds, including Mile Branch, Simpson Creek, Rattlesnake Branch, Champagne Creek, riverbanks and improved drainage canals.

This is a strong standard but is written in such a way as to be difficult to enforce in areas other than those that are adjacent to the named waterways. While it names “riverbanks” and “improved drainage canals” it does not reference a map or section of code where the specific designations of these features can be found. Furthermore, this requirement of a 100-foot buffer may not be reasonable or applicable to other water features. A more comprehensive and clear designation of which drainage features and waterways this requirement applies to would help the city apply the requirement and developers plan for these protective measures.

The city also has regulations for development in wetland, riparian areas, and floodplains focused on the mitigation of flood risk and the improvement of stormwater quality. Development is allowed in floodplains, wetlands, and riparian areas, but is subject to the floodplain regulation found in the City Code, as well as state and federal statutes. The City’s MS4 Permit also provides regulations regarding the quality of stormwater, but these are mainly focused on the control of sediment from construction sites rather than other water quality pollutant sources such as impervious surfaces like roads and parking areas.

PROPOSED APPROACHES

1. **Designate areas for protection and for density.** For the protection of natural resource areas and critical habitat, the city’s update to the Comprehensive Plan should consider designating areas that provide significant ecological services such as wildlife habitat, floodwater storage, or air or water quality benefits and areas where increased density is desired. These designations would not affect the underlying zoning but by formally recognizing them, the city could set the stage for future conservation ordinances or using market-based approaches to incentivizing development away from environmentally sensitive areas towards areas where development and density is more appropriate. These programs come in many forms including density transfer charges and transfer of development rights, among others.
2. **Designate water features for buffers.** To make the buffer requirements cited above more effective and easier to apply, the City should identify and recognize in an ordinance and associated map which waterways, water bodies, and drainage features the buffers apply to and include that guidance in development application materials to educate applicants. The city could use as a starting point, the list of waterways and drainage features included in the “Drainageways Features” list used for annual maintenance and enforcement of

Promotion of Efficient, Compact Development

Are policy incentives in place to direct development to previously developed areas?

Numerous Covington planning efforts have recommended directing new development to pedestrian oriented development. The *current* comprehensive plan seeks to encourage redevelopment but also preserve the historic environment of the City. Within the existing policy and regulatory framework there are no measures to direct development to previously developed areas. The City Code does not differentiate between greenfield and infill development. As a result, there is no policy framework upon which to design incentives to encourage development at infill locations or discourage greenfield development. In addition, the minimum lot area and dimension requirements are sufficiently large enough that many infill development opportunities may be prevented or seen as simply onerous. However, the city does manage a low-interest program for redevelopment which could be enhanced further to incentivize infill development.

Does the municipality direct growth to areas with existing infrastructure, such as sewer, water, and roads?

The *current* Comprehensive Plan is focused on the expansion and revitalization of existing infrastructure while still factoring the growth boundary of the city, which was agreed upon by both the City and St. Tammany Parish. However, the City’s Comprehensive Plan does not contain legal mechanisms to direct growth to areas with existing infrastructure.

Within the City Code, there are no measures specifically designed to increase density within existing, developed areas. Accessory dwelling units are prohibited in the city (Appendix B section 2.2), which prevents one approach to increased development and density. There are no explicit methods in the city’s code to increase development densities such as up-zoning incentives, by right mixed-use development, or infrastructure impact fees.

Are mixed-use and transit-oriented developments allowed or encouraged?

Within the current city code, the mixed use overlay district (MUOD, in Appendix B section 3.30) instrument is intended to provide a mechanism to accommodate development reuse and redevelopment in specified locations at a higher density than the base zoning typically allows and mix uses that are not otherwise permitted to coexist. However, because the mixed-use zoning rules can only be achieved through an overlay district rather than being a part of the existing zoning, and because the requirements to get an application for an MUOD approved are quite onerous, it is not a useful tool for directing or encouraging density.

The Comprehensive Plan and City code invite a more pedestrian-oriented environment and recommends including alternative modes such as cycling in city transportation plans. Transit-Oriented Development is not currently not being utilized, but it has been encouraged in the comprehensive plan. The current comprehensive plan details the potential for a future public transportation system.

PROPOSED APPROACHES

1. **Enable mixed use development.** Building upon the recommendation above to use the update of the city's Comprehensive Plan to designate areas appropriate for increased density, the city should also consider updates to the zoning code to include areas zoned for mixed use development without the need to create a mixed-use overlay district.
2. **Incentivize density.** Transit-oriented development and public transportation will be dependent on the increased density needed to enable these options. The city should start with the tools currently at its disposal to incentivize density. The low-interest loan program currently only focuses on job creation but could be re-designed to also include a requirement or incentive for infill redevelopment.



Photo credit: Deeproot

Design Complete, Smart Streets

Do local street design standards and engineering practices encourage streets to be no wider than necessary to move traffic effectively?

Are major street projects required to integrate green infrastructure practices as a standard part of construction, maintenance, and improvement plans?

The city’s design and construction standards for city streets in both the Streets chapter (Sec 86-2 – Minimum standards for street improvements) and in the sub-division regulations require use of Portland cement or asphalt only for all public and private roads. They also include minimum paved widths, depending on the type of street. The minimum paving requirements foster the creation of impervious surface without the mitigating factor of allowing permeable materials. However, permeable paving materials are allowed within the Off-street parking section of Appendix B (Section 4.110).

PROPOSED APPROACHES

1. **Enable best management practices.** A first step towards incorporating green infrastructure and low impact development strategies into street designs is to allow the use of permeable materials. The city should consider revising the ordinances referenced above to allow for the incorporation of permeable pavement and similar materials where applicable.
2. **Start with demonstration projects.** Integrating green infrastructure practices into public works projects, especially streets, is difficult without a comprehensive program for design, maintenance, and operation. However, the proposed approach for moving towards a comprehensive green infrastructure program is to start with small demonstration projects where the city can try out the materials and test the maintenance practices. This could be in a park or playground or low-volume driveway or parking area. By using these practices and materials in its own projects, the city will be leading by example, showing how others can incorporate these practices as well.



PERVIOUS PAVERS, SOURCE: NEW ORLEANS REDEVELOPMENT AUTHORITY

Encourage Efficient Parking

Does your local government provide flexibility regarding alternative parking requirements (shared parking, off-site parking) and discourage over-parking of development?

Do parking requirements vary by zone to reflect places where more trips are by non-automotive modes?

Parking requirements vary depending on use, size of commercial development, and other factors shown in the City Codes (Appendix B, Section 4.1). The Comprehensive Plan suggests the use of shared and off-site parking to encourage a more pedestrian oriented environment and transit friendly developments. The City code (Appendix B, Section 4.104) currently allows for shared and off-site parking as long as they are in the same or a more intensive zoning classification. In effort to limit the amount of impervious area, there is a maximum number of parking spaces allowed.

Notably, the design requirements for the landscaping of interior parking (Appendix B, Section 4.209) specify the incorporation of planted areas and trees and call for filter areas. Filter areas are planted sections within a parking lot at the edges or parking medians where the stormwater runoff is directed by the grading of the parking lot. The runoff, carrying pollutants from the lot surface, infiltrates the ground within the filter area and excess runoff can overflow into catch basins connected to the gray infrastructure drainage system. This is a strong standard to incorporate green infrastructure into parking lot design within the city’s code but is not being actively enforced.



RAIN GARDEN AT SACRAMENTO STATE

PROPOSED APPROACHES

1. **Require best practices in design.** While the city’s parking requirements are already focused on ways to reduce the amount impervious surface created in development, the impact of these surfaces could be reduced by the enforcement of a requirement to include best management practices such as permeable materials and / or planted filter areas. The city should consider moving its current parking lot design requirements from the zoning code to the building code and making it a component of the construction permit application process.
2. **Build awareness and understanding.** It will likely be politically difficult to make significant changes to standard design practices without building awareness and understanding of these practices in the local development community. A city project that demonstrates these practices or examples from elsewhere, especially those that are not substantially more expensive or difficult to maintain than standard practices, are key to building this understanding. Workshops for developers, contractors, and designers are an important step, especially leading up to any significant change to the city’s design requirements or practices.



RAIN GARDEN AT US NAVAL ACADEMY

Adopt Green Infrastructure Stormwater Management Provisions

Are Green Infrastructure practices encouraged as legal and preferred for managing stormwater runoff?

Do stormwater management plan reviews take place early in the development review process?

Does your stormwater ordinance include monitoring, tracking, and maintenance requirements for stormwater management practices?

Other than the filter areas required in the parking lot section of zoning code (Appendix B, Section 4.209), the City Code does not encourage or require any green infrastructure practices. The drainage requirement in the subdivision development code (Appendix A, Article 5, Section 5.2G) are in alignment with standards around the region in that it requires that drainage infrastructure be built to retain stormwater up to a 25-year storm. Since many subdivisions are built with detention ponds, there are water quality benefits resulting from this drainage requirement. However, while the regulations do not prohibit the use of green infrastructure, they also provide no guidelines for its use. The code references “other innovative methods of retaining stormwater” but does not describe or preference green infrastructure best management practices.

The city’s development code does not require stormwater management practices for private development beyond the subdivision requirements mentioned above. There is no drainage analysis or post-development stormwater runoff plans included in the development application process. There is a Stormwater Management Pollution Plan requirement to include best management practices for construction sites to minimize the amount of sediment and other pollutants that can run off active construction sites. The city has increased its efforts on the monitoring, tracking, and maintenance needs for streams and other drainageways and focused on enforcing the requirements of private landowners to contribute to the maintenance needs of these features as they form part of the municipal drainage system. However, since this effort focuses on removing blockages at bridges, culverts, and similar features, it only reduces the flood risk associated with blocked flow as opposed to the needs to retain, detain, or infiltrate stormwater. The city would benefit from a stormwater management requirement for development beyond subdivisions.

PROPOSED APPROACHES

1. **Build awareness and understanding.** Through exposure and education, build awareness among the public, developers, and city decision-makers about the importance of low impact development.
2. **Adopt a stormwater management requirement.** To extend the requirement for stormwater management beyond subdivision development, the city should consider adopting an ordinance that requires on-site stormwater management. Where drainage requirements are already in place, revise the code to preference green infrastructure **A draft city ordinance and revisions to existing code are included in the appendix.**

Code Revisions & New Ordinances

One key approach to implementing low impact development practices the City of Covington could take would be to adopt a city-wide stormwater management ordinance for development, beyond subdivisions. To maximize water quality benefits, the stormwater management ordinance should favor green infrastructure as a means of water management and should coordinate closely with the landscaping requirements.

There are several important components of an effective water management regulation:

1. *Clear applicability:* It should be clear to developers and to the municipal staff that review applications, exactly which developments are subject to the stormwater ordinance. This is usually best accomplished by having a clear size threshold (above a certain amount parcel size and/or impervious surface) and applicable development types such as residential subdivisions, commercial properties, with exceptions only necessary.
2. *Clear measurement methodology:* There should be very specific and unambiguous requirements in the ordinance for how the runoff calculations shall be made by the applicant, what size and duration design storms should be used, and how to measure both upstream and downstream impacts. This clarity reduces confusion and errors when developing and reviewing permit applications.
3. *Clear management requirement:* There must be a well-defined standard for the management of stormwater used in the regulation. This allows the applicant to design the site accordingly and demonstrate through the building plans, how the stormwater retention/detention requirement will be achieved. For instance, many municipalities require that the pre-development peak flow rate be calculated first and that the post-development flow not exceed the predevelopment rate. Others require that there be more detention in the development than there was in the predevelopment condition. Still others use a specific rainwater measurement that must be managed.
4. *Clear water quality requirement.* The ordinance should include a preference or requirement for BMPs that filter and reduce pollutant load, not just retain stormwater for flood risk reduction. The first flush has the most pollutants so even small rain events with no flood risk can cause environmental harm.

Appendix A contains two components of low impact development code:

1. A new draft ordinance to establish a requirement for development beyond subdivisions to manage stormwater and incorporate green infrastructure design and construction materials and methods
2. Revisions to the existing subdivision development code to provide more clarity and specificity in the methods used to analyze the stormwater impacts of development and preference green infrastructure methods

Appendix – Low Impact Development Ordinances

New Stormwater Management Ordinance

The following is a draft stormwater management ordinance for the City of Covington to include a requirement for development beyond subdivisions to manage stormwater and incorporate green infrastructure design and construction materials and methods.

Section 18-58 – STORMWATER MANAGEMENT

1. Intent. The stormwater management requirements established by this section are intended to:
 - (a) Assist in the development of a safer and healthier environment in The City of Covington by encouraging low-impact practices for site design, construction and maintenance that reduce flood risk and pollutants carried by stormwater; and
 - (b) Reduce stormwater runoff to mitigate the effect of new development or redevelopment on the existing and future drainage system by ensuring the preservation of permeable surfaces and requiring the installation of stormwater best management practices (BMPs) to slow surface flow of stormwater runoff and promote filtration, plant uptake, absorption, and infiltration into sub-soils; and
 - (c) Support the City's compliance with its permit for Municipal Separate Storm Sewer System ("MS4") discharges including the implementation of a Stormwater Management Plan or equivalent, which requires Best Management Practices ("BMPs") for all construction activity, good housekeeping practices, and post-construction BMPs for development projects.
2. Administration and enforcement. The regulations of this Chapter are to be administered and enforced by the Permit Department.
3. Compliance with all other regulations. Development that is subject to the regulations of this Section must also comply with any and all other applicable federal, state and local regulations.
4. Severability. If any article, section, subsection, sentence, clause or phrase of this Chapter is, for any reason, held unconstitutional or invalid, such decision or holding will not affect the validity of the remaining portions hereof.
5. Definitions.

Best Management Practice (BMP) means any man-made or natural structure, system, landscape feature, channel, or improvement designed, constructed, installed, and/or used to detain, retain, infiltrate, filter, or otherwise control stormwater runoff quality, rate, or quantity.

Bioretention means the process of collecting stormwater in a treatment area consisting of soil and plant materials to facilitate infiltration and remove sediment and other contaminants through physical, chemical, and biological processes.

Construction activity means construction or demolition activity, clearing, grubbing, or excavation or any other activity that may result in land disturbance.

Detention means slowing, dampening, or attenuating runoff flows entering the storm drainage system by temporarily holding water in areas such as detention basins, reservoirs, on roof tops, or within the drainage system itself, and releasing the water at a desired rate of discharge.

Development means any human-induced change to improved or unimproved property, including but not limited to: construction, installation, or expansion of a building or other structure; land division; drilling; and site alteration such as dredging, grading, paving, excavation, filling or clearing. Development includes both development of new structures and modifications, alterations, or additions to an existing structure.

Drainage Area means a catchment area formed by natural or man-made topography that drains to a given point.

Green Infrastructure means stormwater systems or features that mimic the natural water cycle and are used to manage the quantity and quality of runoff associated with development. The term encompasses a wide array of best management practices and methods including, but not limited to bioretention, detention, permeable pavement, and green roofs.

Impervious Surface means any building, pavement, structure, or other material that impedes the natural infiltration of water into the ground.

Infiltration means the penetration and movement of water through the earth's surface.

Municipal Separate Storm Sewer System ("MS4") means a conveyance or system of conveyances, including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains, separate from a sanitary sewer, that conveys runoff from individual parcels and public rights-of-way to storm drains, treatment facilities and/or receiving waters.

Stormwater Runoff means any part of precipitation that flows over the land during or following a rain event.

Stormwater means water that originates as precipitation on a particular site, basin, or watershed.

POST-DEVELOPMENT REQUIREMENTS

6. Stormwater Management Plan (SWMP) required.

- (a) A Stormwater Management Plan is required to be submitted in conjunction with an application for a development permit under any one of the following circumstances:
 - (1) New construction of buildings and/or parking areas totaling ten thousand (10,000) or more square feet of impervious surface, or replacement of buildings and/or parking areas which results in (10,000) or more square feet of impervious surface.
 - (2) Any development permit application involving the disturbance of land on a parcel of one (1) acre or more in size.

(3) The following types of development are exempt from requirements of this Article:

- a. Single- and two-family dwellings;
- b. Maintenance activities, such as top-layer grinding (grind and overlay), repaving when aggregates or gravels are not exposed.

(4) Subdivision applications must follow the stormwater requirements as defined in Appendix A, Article 5.

7. Stormwater Management Plan requirements.

Stormwater Management Plans shall include the following components:

(a) Drainage Study.

A drainage study shall be completed and stamped by a civil engineer or landscape architect licensed in the state of Louisiana and shall be submitted for all developments that require Stormwater Management Plans. The drainage study will include an analysis both pre-development and post-development runoff. The applicant shall also provide a peak flow for the 100-year, 25-year and 10-year 24-hour storm events. The hydrological analysis shall meet all applicable City ordinances and the following requirements:

- (1) The engineer or landscape architect shall also study the effect of any proposed development on existing downstream drainage facilities outside the area of the development. Local drainage studies, together with any other appropriate study, shall serve as a guide to needed improvements as determined by the City.
- (2) No development may be constructed or maintained so that surface waters from such development are collected and channeled downstream at such locations or at such volumes or velocities as to cause degradation, alteration or damage to lower adjacent properties.

(b) Proposed Site Stormwater Management Plan.

The Proposed Site Stormwater Management Plan shall include post-development stormwater best management practices (BMPs) that limit the post-developed peak flow rate to the pre-developed peak flow rate for the 10-year, 24-hour and the 25-year, 24-hour storm event.

8. Design Requirements.

(a) Stormwater management plans shall be designed to reduce stormwater pollutants wherever feasible, and must be supported by a combination of stormwater BMPs, in the following order of priority:

- (1) Create conditions that allow retention and infiltration of stormwater runoff on-site by using pervious paving materials, bioretention areas, green roofs, and other methods that allow pollutants to settle and water to evapo-transpirate or infiltrate into soil.

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- (2) Additional stormwater runoff that cannot be infiltrated should be detained, stored, and filtered through the use of BMPs.
 - (3) Runoff in excess of the holding capacity of the BMPs shall exit the site through surface or subsurface drainage.
 - (b) All stormwater management facilities shall be designed to provide an emergency overflow system and incorporate measures to provide a non-erosive velocity of flow along its length and at any outfall.
 - (c) All BMPs designed to drain and/or infiltrate must be designed to drain from a full condition within a maximum of twenty-four (24) hours to prevent breeding of mosquitos and other waterborne pests.

9. Submittal Documents.

Submittal documents shall be prepared by or under the direct supervision of a Louisiana Registered Civil Engineer or Landscape Architect within the purview of the State of Louisiana licensing law provisions. Said documents shall be imprinted with their seal designating them as the professional of record. Submittal documents shall be submitted with each permit application and shall include the following:

- (a) Project Description. Brief summary of existing conditions and proposed stormwater management design.
- (b) Pre-developed Site and Stormwater Drainage Plan. A site assessment detailing the current drainage conditions on the property. This shall include:
 - (1) Location and boundaries of all existing property lines, lot names, easements or servitudes, or other land divisions for the development site;
 - (2) Location and boundaries of all adjacent rights-of-way, streets, private roads, drainage rights-of-way, or other features;
 - (3) Existing drainage areas delineated with flow lines indicating direction of flow;
 - (4) All above ground and subsurface infrastructure and invert elevations, including but not limited to existing drain lines, culverts, catch basins, headwalls, manholes, and existing BMPs;
 - (5) Location of all existing roof and yard drains, downspouts, or other features and their connections to BMPs
 - (6) Existing topographic and any significant topographic features at a maximum of 1' elevation intervals. If the site is less than 2% slope, NAVD88 point elevations are required at a minimum of every 25' and at the property line.
 - (7) Soil conditions;
 - (8) All existing buildings, structures, land covers and site features, including but not limited to curb cuts, interior streets, driveways, parking and loading areas, landscaped areas, and lawns.
- (c) Proposed Site & Stormwater Drainage Plan. A detailed representation of the proposed drainage site design. This shall include:

- (1) Location and boundaries of all property lines, lot names, easements or servitudes, or other land divisions for the development site;
 - (2) Location and boundaries of all adjacent rights-of-way, streets, private roads, drainage rights-of-way, or other features;
 - (3) Proposed drainage areas delineated with flow lines indicating direction of flow;
 - (4) All proposed above ground and subsurface infrastructure and invert elevations, including but not limited to drain lines, culverts, catch basins, headwalls, manholes, and BMPs;
 - (5) Location of all proposed roof and yard drains, downspouts, or other features and their connections to BMPs
 - (6) Proposed topographic and any significant topographic features at a maximum of 1' elevation intervals. If the site is less than 2% slope, NAVD88 point elevations are required at a minimum of every 25' and at the property line.
 - (7) All proposed buildings, structures, land covers and site features, including but not limited to curb cuts, interior streets, driveways, parking and loading areas, landscaped areas, and lawns.
 - (8) Sections and details of all proposed BMPs showing depth, dimensions, detention volume, compositional layers, drainage media, overflows, connections into and out of all drainage related features.
- (d) Calculations. Calculations for pre- and post-development runoff rate. Calculations for runoff rates should use the methods called for in the latest version of the Louisiana Department of Design and Development (LA DOTD's) Hydraulics Manual. For rainfall depths, applicants should use the latest data from the National Oceanographic and Atmospheric Administration (NOAA) or the DOTD hydraulics manual and select whichever rainfall rate is greater.
- (e) Landscape Plan. When plants, trees, or shrubs are utilized in BMP design.
- (f) Operations & Maintenance Plan. Site-specific operations and maintenance schedule for each BMP including routine maintenance, frequency of inspections, indications of failure, corrective actions (repair and replacement), and a sample inspection report for the site.

10. Enforcement of Regulations.

No Certificate of Occupancy may be issued for any development site until certification of stormwater management features has been obtained. Failure to implement the stormwater management plan is cause for the withholding of the Certificate of Occupancy. The applicant shall maintain all stormwater BMPs and associated infrastructure in perpetuity following construction. All landscape and stormwater management BMPs and associated infrastructure shall be maintained in conformance with the approved plan.

11. Post-Construction Certification.

Prior to the issuance of a Certificate of Occupancy, the following shall occur to ensure compliance with the stormwater regulations:

- (a) Submission of digital as-built plans showing the final design specifications for all stormwater management facilities and practices, the field location, size, depth of all measures, controls, and planted vegetation, and devices, as installed.
- (b) A professional engineer or landscape architect licensed in Louisiana shall provide an affidavit, under seal, attesting the stormwater management measures have been installed in accordance with all approved plans and specifications, and in compliance with all other applicable standards.

12. Ownership and stewardship. Any stormwater management facility or BMP, unless expressly agreed upon through a contractual agreement, shall be the responsibility of the owner and all associated operation and maintenance activities, costs, and reporting shall be the sole responsibility of the owner.

Low Impact Development Revisions to Subdivision Ordinance

The following is text from the City of Covington subdivision development code with revisions included as a mark-up to demonstrate how low impact development requirements could be added to amend the ordinance.

ARTICLE 3. - SUBDIVISION APPLICATIONS AND PROCEDURES

Any petitioner desiring to subdivide any lot, tract or parcel of land or to change or rearrange any such lot, tract or parcel of land within the city shall comply with the procedures established in this article and other applicable sections of this article and in the sequence specified.

Sec. 3.1. - Pre-application procedures for all subdivisions.

Prior to preparing a conceptual sketch plat for any subdivision and before any construction, clearing or other ground work is undertaken, the petitioner must schedule a pre-application meeting with the planning director, the city engineer, the public works director and all other applicable city staff to discuss the procedure for approval of subdivision plats and the requirements for the development and construction of subdivisions in the city.

The petitioner should acquire a copy of the comprehensive plan and/or comprehensive zoning ordinance and any other documents that the city may require so that the petitioner, architect, engineer, landscape architect, land surveyor, and/or planner for the petitioner can become familiar with the design and construction requirements of the city. After review of the requirements for subdivision the petitioner is encouraged to discuss any questions regarding the proposed subdivision with the planning director, the city engineer, the public works director and all other applicable city staff.

The petitioner and/or the petitioner's representative should discuss any questions they might have with the planning director, the city engineer, the public works director and all other applicable city staff concerning the requirements for the general layout of streets and reservations of land, street improvements, drainage, sewerage, and similar matters. If public improvements are required in conjunction with the proposed subdivision, the petitioner shall schedule a pre-application meeting with the planning director, the city engineer, the public works director and all other applicable city staff. It shall be the responsibility of the petitioner to determine the status of the proposed application as a major or minor subdivision dependent on the requirement for public improvements with the assistance of the city engineer and the director of public works.

The planning director, the city engineer and the public works director should be consulted as to the present zoning of the subdivision site and abutting areas, in particular, the use, bulk and density requirements and the nature of existing public services and facilities available or planned for the subdivision site. The proposed development shall be evaluated for compatibility with the comprehensive land use plan, particularly with regard to planned capital improvements such as streets and parks.

The planning director, the city engineer, the public works director and all other applicable city staff shall also advise the petitioner, where appropriate, to discuss the proposed subdivision with those city, parish, state and federal officials who may eventually approve various aspects of the subdivision plat.

The planning director or his/her duly authorized representative shall provide the proposed petitioner with all the necessary application forms in accordance with the currently adopted rules of procedure of the planning commission and advise the petitioner of deadlines for submission and required fees.

(Ord. No. 2011-34, Exh. A, 12-8-2011)

Sec. 3.2. - General procedures.

Whenever any administrative, minor or major subdivision of land (as defined in article 2) is proposed, before any contract is made for the sale of any part thereof, and before any permit for the erection of a structure in such proposed subdivision shall be granted, the property owner, or authorized agent for the owner, shall apply for and secure the following required approvals, as described more fully elsewhere herein:

- A. *Administrative subdivision.*
 1. Approval of final subdivision plat.
- B. *Minor subdivision.*
 1. Preliminary approval of preliminary subdivision plat.
 2. Approval of final subdivision plat.
- C. *Major subdivision.*
 1. Tentative approval of conceptual sketch plat.
 2. Preliminary approval of preliminary subdivision plat and construction plans.
 3. Approval of final subdivision plat jointly with:
 - a. Acceptance of dedication of public improvements by city council; or
 - b. Posting of performance bond or irrevocable letter of credit for the construction of required public improvements and subsequent acceptance of dedication of improvements by city council.
- D. *Filing deadlines.* For purposes of these regulations the deadlines for submissions of all administrative, minor and major subdivision applications shall be in accordance with the planning commission's current adopted calendar. A list of deadlines for submission of applications for each year, based on the current rules of procedure, shall be available from the planning director.
- E. *Subdivision notice requirements.* For all preliminary subdivision plats, petitioners are required to give two forms of public notice: 1) mailed notice to all property owners within 500 feet (see sections 3.2.E.1.a. and 3.2.E.1.b.), and 2) posted notice of the property (see section 3.2.E.2.). The city requires this notice to ensure that the owners of nearby property and other interested members of the community are informed of subdivision proposals. This public notice supplements the administrative notice that is given to governmental agencies that may be concerned with various aspects of the application, and the general publication of the public hearing provided by the city. The procedure for public notice on all preliminary subdivision plat applications is as follows:
 1. *Mailed notice.*
 - a. Written notice shall be sent by the city to each property owner within 500 feet of the proposed subdivision. Said notices will be sent by registered mail with return receipt requested, not less than ten days prior to the meeting of the planning commission at which the preliminary subdivision application will be considered.
 - b. The petitioner shall provide the planning director with a copy of the mailing list, which includes the owners of all properties within 500 feet of the proposed subdivision. The subdivision application will not be considered until this information has been received.
 2. *Posted notice.* In addition to the notification by mail, the city will post an on-site sign or signs notifying the public of the scheduled public hearing. The sign(s) shall be erected on the property at a site along each street frontage that is clearly visible from the nearest public street. The notice(s) will be posted at least ten days prior to the planning commission meeting and must remain in place until final action has been taken.

3. *Print notice.* Public notice of the hearing shall be given by the city at least 14 days prior to the date of the hearing in the official journal of the city.
4. *Fees.* The legal advertising, mailing and signage costs of all public hearings required by these regulations shall be borne by the petitioner.

(Ord. No. 2011-34, Exh. A, 12-8-2011)

Sec. 3.3. - General subdivision requirements.

All subdivision plats and associated construction plans for public improvements, when applicable, shall comply with the following laws, rules and regulations or shall be subject to disapproval:

- A. All applicable statutory provisions;
- B. All applicable provisions of these regulations and all other applicable laws, ordinances and codes of the city;
- C. Any rules of the Louisiana Department of Health and Hospitals and/or appropriate state agencies, with such rules providing minimum standards to be met by all subdivision plats;
- D. The requirements of the Louisiana Department of Transportation and Development when so noted and if the subdivision or any lot contained therein abuts a state highway or connecting street;
- E. All required permits from the Louisiana Department of Environmental Quality for stormwater discharge;
- F. All applicable standards and regulations adopted by the city and all boards, commissions, agencies and officials of the city; and
- G. The current adopted rules of procedure of the planning commission are available in the office of the planning director or his/her duly authorized representative.

(Ord. No. 2011-34, Exh. A, 12-8-2011)

Sec. 3.4. - Administrative subdivision.

- A. *Scope.* The administrative subdivision procedure may be used to adjust an interior lot line or combine five or more lots on a piece of property less than five acres providing the following conditions are met:
 1. In the case of an administrative lot line adjustment:
 - a. The lots involved must be designated within the same zoning district and the proposed adjustment will not create or result in a violation of the comprehensive zoning ordinance.
 - b. The lots involved must be existing platted lots.
 - c. The adjustment alters lot lines of no more than four lots without creating additional lots.
 - d. All administratively subdivided parcels or lots have access to a previously constructed public right-of way and street.
 2. In the case of administrative platting or lot consolidation:
 - a. The lots involved must be designated within the same zoning district and the proposed platting or lot consolidation will not create or result in a violation of the comprehensive zoning ordinance.
 - b. The lots involved must be existing platted lots.

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- c. The lots must be under unified ownership.
 - d. The proposed platting creates no more than four lots, or the proposed consolidation involves no more than four lots into a lesser number of lots.
 - e. All administratively subdivided parcels or lots have access to a previously constructed public right-of-way and street.
3. No more than two administrative subdivisions and/or consolidations involving the same land may be applied for or approved within any five-year period.
 4. The subdivision is served by existing utilities and does not require the extension of streets, utilities or public improvements.
 5. Each lot resulting from the subdivision procedure will conform fully to all requirements of the zoning district that pertains to the lots; and each lot is developable according to the site development regulations of the comprehensive zoning ordinance. However, where the existing lots are nonconforming, no variance shall be required for the administrative subdivision; where such subdivision does not increase the nonconformity of the existing lots. An administrative subdivision is not permitted when said subdivision will increase the nonconformity of the existing lots, without a variance from the board of adjustment.
- B. *Application and approval procedure for administrative subdivisions.*
1. Final plat. At the time of filing a request for administrative subdivision with the planning director or his/her duly authorized representative, the petitioner shall submit the following information and documents:
 - a. A signed statement verifying ownership of all property to be subdivided, including the COB and folio of the acquisition document filed with the clerk of court;
 - b. A copy of any covenants or restrictions that affect the property;
 - c. A letter of request to subdivide, signed by the owner(s) identified in section 3.4.B.[1].ja. above, stating the reason for the request;
 - d. A check for the appropriate fee as established in section 3.5.M. of these regulations;
 - e. Five copies of a plat containing the following information:
 - i. Name of owner(s) of property;
 - ii. An accurate description of the property;
 - iii. A vicinity map at one inch equals 500 feet;
 - iv. North arrow and scale of plat, with a maximum scale of one inch equals 100 feet;
 - v. All dimensions, bearings and corner markers;
 - vi. All property as currently subdivided and how the property is to be subdivided, with square footage and dimensions of all such divisions;
 - vii. Surveyor's certification, signature and seal;
 - viii. All existing adjacent streets, alleys, rights-of-way, utility easements and servitudes and their widths. For revoked streets or alleys, the former right-of-way and the date and ordinance number of the revocation must be shown;
 - ix. Location of all buildings and structures and setback requirements as required by the subdivision regulations and the comprehensive zoning ordinance, along with the current zoning of the property;

- x. Place for the signature of the chairperson and/or vice chairperson of the planning commission and clerk of court, the date and filing number;
- xi. Identifying numbers for all property as currently divided and as to be subdivided. No new division of the property may be left unnumbered.

C. *Planning department action on administrative subdivisions.*

1. Following submission, the planning director shall review the application according to the following criteria:
 - a. Compliance with the conditions contained in section 3.4.A.;
 - b. Consistency with the comprehensive plan;
 - c. Potential adverse environmental impacts or effects on neighboring properties.
2. Following such review, the planning director shall take action within 14 days of the filing of an application for subdivision by doing one of the following:
 - a. Reject the application as incomplete;
 - b. Decline to review the application administratively and advise the petitioner that it will be necessary to file for a major or minor subdivision;
 - c. Grant the subdivision, forwarding it to the chairman of the planning commission for execution.
3. Following approval of an administrative subdivision, the city shall file the plat with the St. Tammany Parish Clerk of Court.

D. *Appeal of planning department action on administrative subdivisions.* The planning director shall have the authority to grant or deny final subdivision approval of administrative subdivisions and any other matters brought before him/her where his/her purview and jurisdiction prevails; however, any person claiming to be aggrieved by the decision of the planning director may appeal such decisions to the 22nd Judicial District Court for the Parish of St. Tammany.

(Ord. No. 2011-34, Exh. A, 12-8-2011; Ord. No. 2018-03, 2-22-2018)

Sec. 3.5. - Minor subdivision applications and procedures.

A. *Scope.* Minor subdivisions, as defined in article 2 of this ordinance shall be approved in accordance with the following procedures when a proposed subdivision meets these conditions:

1. The subdivision adjusts the lot lines of no more than four lots.
2. The subdivision is served by existing utilities and either does not require the extension of streets, utilities or public improvements, or requires minor changes to existing public utilities, roadways or storm drainage that will not adversely affect the remainder of the subdivision or adjoining property and which is not in conflict with any provision of the comprehensive plan or official zoning map.
3. Each lot resulting from the subdivision procedure will conform fully to all requirements of the zoning district that pertains to the lots, and each lot is developable according to the site development regulations of the comprehensive zoning ordinance, except where to do so would lead to lots that are less nonconforming than prior to the resubdivision.

B. *Application and approval procedures for minor subdivisions.*

1. Preliminary plat. Prior to the meeting at which it is to be considered, and in accordance with the planning commission's current adopted calendar, the petitioner shall submit the following information and documents for minor subdivision consideration:

- a. A signed statement verifying ownership of all property to be subdivided, including the COB and folio of the acquisition document filed with the clerk of court.
- b. A copy of any covenants or restrictions that affect the property.
- c. A letter of request to subdivide, signed by the owner(s) identified in subsection 3.5.B.[1].a. above, stating the reason for the request.
- d. A check for the appropriate fee as established in section 3.5.N. of these regulations.
- e. Fifteen copies of a preliminary plat containing the following information:
 - i. Name of owner(s) of property;
 - ii. An accurate description of the property;
 - iii. A vicinity map at one inch equals 500 feet;
 - iv. North arrow and scale of subdivision plat, with a maximum scale of one inch equals 500 feet;
 - v. All dimensions, bearings and corner markers;
 - vi. All property as currently subdivided and how the property is to be subdivided, with square footage and dimensions of all such divisions;
 - vii. Surveyor's certification, signature and seal;
 - viii. All existing adjacent streets, alleys, rights-of-way, utility easements and servitudes and their widths. For revoked streets or alleys, the former right-of-way and the date and ordinance number of the revocation must be shown;
 - ix. Location of all buildings and structures and setback requirements as required by the subdivision regulations and the comprehensive zoning ordinance, along with the current zoning of the property;
 - x. Place for the signature of the chairperson and/or vice chairperson of the planning commission, the city engineer, the clerk of court, the date and filing number;
 - xi. Identifying numbers for all property as currently divided and as to be subdivided. No new division of the property may be left unnumbered;
 - xii. An accurate description of the FEMA flood zone designation.

If any of the items required to be submitted have not been submitted or if the preliminary plat submitted is incomplete or does not conform to the requirements of these regulations or if the application and/or required supplemental information is not in accordance with the provisions of these regulations, the planning director or his/her duly authorized representative has the authority to notify the petitioner of rejection of the application. In such cases, the planning director or his/her duly authorized representative shall send written notice to the petitioner stating the reasons for the rejection of the application.

C. *Action on minor subdivisions.*

1. Minor subdivision review shall consist of two principal stages: preliminary plat approval and final plat approval. The planning commission, at its discretion, may combine the approval stages, provided all requirements for both stages have been met by the petitioner to the satisfaction of the planning director, city engineer and applicable city officials.
2. The planning commission will review the plat and supporting documents for compliance with the requirements of this section. The planning commission will, where appropriate, ask for written comments or opinions from officials or agencies of the city.

3. Preliminary plat decision. After reviewing and discussing the preliminary plat, other submitted materials and all other reports submitted by other agencies and/or officials, the planning commission will advise the petitioner as to approval, conditional approval, or disapproval of the application and the reasons therefore.
 - a. Planning commission approval or conditional approval of the preliminary plat shall constitute authorization to the petitioner to prepare and submit a final plat to the planning commission for approval.
 - b. In the case of a conditional approval requiring amendment of the preliminary plat, the petitioner shall resubmit the required number of copies of the application documents with the amendments required for approval by the planning commission prior to submission of the final plat.
 - c. Failure to submit amended documents sufficient to meet the conditional approval requirements of the planning commission in the prescribed time period shall constitute a failure to meet the conditions of approval and shall cause the application as disapproved.
 4. Final plat decision.
 - a. After approval of the preliminary plat, the petitioner shall prepare a final plat, together with required certificates to be recorded in the St. Tammany Parish Clerk of Court. The final plat becomes the instrument to be recorded in the St. Tammany Parish Clerk of Court's office when duly signed by the chairman of the planning commission or his/her duly authorized representative and the city engineer.
 - b. With a minor subdivision, the planning commission may delegate final plat review and approval to the planning director or city engineer. The city official shall report his/her actions to the planning commission at its next regularly scheduled meeting, to be made part of the record.
- D. *Appeal of planning commission decision on minor subdivision approval.* The planning commission shall have the authority to grant or deny preliminary or final subdivision approval and any other matters brought before it where its purview and jurisdiction prevails; however, any person claiming to be aggrieved by the decision of the commission may appeal such decisions to the 22nd Judicial District Court for the Parish of St. Tammany.

(Ord. No. 2011-34, Exh. A, 12-8-2011)

Sec. 3.6. - Major subdivision applications and procedures.

Major subdivisions, as defined in article 2 of this ordinance shall be approved in accordance with the procedures for tentative, preliminary and final plat approval as provided in the following sections, and any other special provisions which the planning commission deems necessary to insure the health, welfare and safety of the community.

A. *Guidelines for major subdivision.*

1. Any subdivision and the lot(s) resulting there from must meet the requirements of the zoning district in which they are located.
2. All subdivided parcels or lots shall have access supplied by a public street and an easement supplied in perpetuity by instrument filed with the clerk of court for St. Tammany Parish.
3. The petitioner must be present or have a designated representative present for the public hearing. Failure to fulfill this requirement may be grounds for denial of the subdivision request.

- B. *Tentative approval procedures for major subdivisions.* Subsequent to the required pre-application meeting the following items shall be submitted by the petitioner to the planning director, or his/her duly authorized representative, to initiate the tentative approval procedure for subdivision requests. Applications received after the official deadline, as established by the rules of procedure of the planning commission, will be held for hearing at the earliest possible meeting in accordance with the established deadlines. The following items shall be submitted and distributed in accordance with the requirements of these regulations and the currently adopted rules of procedure of the planning commission on forms approved by the planning commission:
1. Application form for tentative approval, completed and signed, and the required number of copies for review;
 2. Conceptual sketch plat, drawn in accordance with the provisions of these regulations and the required number of prints for review, including the following:
 - a. The name and vicinity map of the location of the subdivision within the city drawn at one inch equals 500 feet scale, including adjoining land uses;
 - b. Scale of subdivision drawings and north direction arrow;
 - c. Information block indicating the zoning, total acreage, total number of lots and their dimensions, total length of the streets, average lot size, total number of blocks and their dimensions;
 - d. Phases within the development;
 - e. Location of proposed or existing easements and/or servitudes;
 - f. Proposed building setback lines;
 - g. Existing streets that provide access to development and type;
 - h. Names, locations, types of surfacing, and other dimensions of proposed streets;
 - i. Typical cross sections of the proposed grading and roadways, sidewalks and topographic conditions;
 - j. Location of green space, park or playground areas and the amount provided;
 - k. Proposed Stormwater Management Plan (SWMP) and erosion/sedimentation control plan;
 - l. Proposed water, sewerage layout and utility layouts;
 - m. Wetland demarcation lines (as determined by the U.S. Army Corps of Engineers) and flood zone demarcation lines (indicate FIRM map and panel number);
 - n. Existing structures;
 - o. A legal description of the property being developed.
 3. A notarized affidavit of ownership which shall disclose all contiguous holdings of the owner including land in common ownership as defined herein, with an indication of the portion which is proposed to be subdivided, as well as dates the respective holdings of land were acquired, together with the book and page of each conveyance to the present owner as recorded in the parish clerk of court's office. This affidavit shall advise the planning commission as to the legal owners of the property, the persons proposed to acquire the property, the date contract of sale was executed and, if any corporations are involved, include a listing of all directors, officers, and stockholders of each corporation owning more than five percent of any class of stock.
 4. If any of the items required to be submitted have not been submitted or if the conceptual sketch plat submitted is incomplete or does not conform to the requirements of these

regulations or if the application and/or required supplemental information is not in accordance with the provisions of these regulations, the planning director or his/her duly authorized representative will notify the petitioner of rejection of the application. In such cases, the planning director or his/her duly authorized representative shall send written notice to the petitioner stating the reasons for the rejection of the application.

C. *Action on tentative subdivision approval for major subdivisions.*

1. After reviewing and discussing the conceptual sketch plat, other submitted materials and all other reports submitted by other agencies and/or officials, the planning commission will advise the petitioner as to approval, conditional approval, or disapproval of the application and the reasons therefore. Planning commission approval or conditional approval of the conceptual sketch plat shall constitute authorization to the petitioner to prepare and submit a preliminary plat to the planning commission for approval.
2. In the case of a conditional approval requiring amendment of the conceptual sketch plat, the petitioner shall resubmit the required number of copies of the application documents with the amendments required for approval by the planning commission prior to submission of the preliminary plat.
3. Failure to submit amended documents sufficient to meet the conditional approval requirements of the planning commission in the prescribed time period shall constitute a failure to meet the conditions of approval and shall cause the application as disapproved.
4. The planning commission must approve the tentative subdivision plat before the petitioner(s) can submit plats for preliminary review.
5. Approval or conditional approval of the tentative approval application and the associated conceptual sketch plat by the planning commission shall be effective for a period of six months from the date of the meeting at which the planning commission gives such approval. Failure to apply for preliminary approval within the effective time of the tentative approval shall render the approval of the conceptual sketch plat null and void, and the petitioner shall be required to resubmit a new application and plat for tentative approval which shall be subject to all land use regulations of the city effective after the expiration of the tentative approval.

D. *Appeal of planning commission decision on tentative subdivision approval for major subdivisions.* The planning commission shall have the authority to grant or deny tentative subdivision and any other matters brought before it where its purview and jurisdiction prevails; however, any person claiming to be aggrieved by the decision of the commission may appeal such decisions to the 22nd Judicial District Court for the Parish of St. Tammany.

E. *Preliminary approval procedures for major subdivisions.* As part of the preliminary application submission, the petitioner shall submit to the planning director, only after streets and blocks have been surveyed, and before the construction of any streets, utilities or drainage structures or channels has begun; 15 copies of the preliminary subdivision plat for approval by the planning commission. The preliminary plat is the detailed plan of the surveyed subdivision submitted for review to ensure that the plan is feasible and practical, and can be followed during construction by the city engineer, and shall be submitted to the planning director before the planning commission meeting at which it is to be considered, in accordance with the planning commission's current adopted calendar.

Subsequent to the approval of the preliminary plat a complete application shall be submitted by the petitioner to the planning director, or his/her duly authorized representative, to initiate the preliminary approval procedure for subdivision requests. Applications received after the official deadline, as established by the rules of procedure of the planning commission, will be held for hearing at the earliest possible meeting in accordance with the established deadlines. The following items shall be submitted and distributed in accordance with the requirements of these

regulations and the currently adopted rules of procedure of the planning commission as a prerequisite for approval:

1. A signed statement verifying ownership of all property to be subdivided, including the COB and folio of the acquisition document filed with the clerk of court.
2. A copy of any covenants or restrictions that affect the property.
3. A letter of request to subdivide, signed by the owner(s) identified in subsection 3.6.E.a.[1.] above, stating the reason for the request.
4. A copy of the dedication of any easements, servitudes or rights-of-way made by the owner to satisfy any of the above guidelines or other requirements as set forth by the planning commission or its representative.
5. A check for the appropriate fee as established in section 3.5.N. of these regulations.
6. Fifteen copies of a preliminary plat and site plan containing the following information:
 - a. Subdivision name, the names and addresses of owner(s) of property;
 - b. A subdivision boundary and accurate legal description of the property;
 - c. North arrow and graphic scale of plat, with a maximum scale of one inch equals 100 feet;
 - d. All dimensions, bearings and permanent markers by surveyor or engineer;
 - e. All property as currently subdivided and how the property is to be subdivided, with square footage and dimensions of all such divisions;
 - f. Surveyor's and/or engineer's certification, signature and seal;
 - g. St. Tammany Parish Board of Health approval signature;
 - h. Plans and cross sections of the existing and proposed roadways, including base material;
 - i. All existing adjacent streets, alleys, rights-of-way, utility easements and servitudes and their widths. For revoked streets or alleys, the former right-of-way and the date and ordinance number of the revocation must be shown;
 - j. Street names and identifying numbers for all property as currently divided and as to be subdivided. No new division of the property may be left unnumbered;
 - k. Existing and proposed easements and/or servitudes including total acres in easements to be dedicated;
 - l. Location of all buildings and structures and setback requirements as required by the subdivision regulations and the comprehensive zoning ordinance, along with the current zoning of the property;
 - m. Location of all structures designated model homes;
 - n. Any zoning action taken, including any variances required to make the subdivision conform to the requirements of the comprehensive zoning ordinance, if applicable;
 - o. Existing and proposed topography of the area to be developed with the contour lines at one-foot vertical intervals;
 - p. Detailed utility plans and specifications for central sewerage and/or water systems (including a total number of linear feet of sewer and water piping and other apparatus), natural gas, cable/telecommunications, electricity and any other utility plans as

- determined by the city engineer. Plan should include feasible connections, where possible, to existing and proposed utility systems;
- q. Street lighting plan;
 - r. Wetland demarcation lines (as determined by the U.S. Army Corps of Engineers) and flood zone demarcation lines (indicate FIRM map and panel number);
 - s. The general location of each live oak eight inches dbh or greater, existing densely wooded areas plus any isolated hardwood trees outside of densely wooded areas which measure ten inches dbh and/or pines measuring 30 inches dbh or greater;
 - t. Place for the signature of the chairperson and/or vice chairperson of the planning commission, the city engineer, the clerk of council, the St. Tammany Parish Clerk of Court; the date and filing number;
 - u. Separate sheet(s) for paving and drainage plans providing the following information:
 - i. North arrow and graphic scale;
 - ii. Topography of the area to be developed with the contour lines at one-foot vertical intervals;
 - iii. A vicinity map at one inch equals 500 feet;
 - iv. Cross sections of the proposed road base grading and roadways, existing street conditions, and rights-of-way;
 - v. Types of surfacing materials to be applied;
 - vi. Surface water disposal and receiving waters (refer to USGS quadrangle map);
 - vii. Location, size and type of drainage structures including minimum driveway structures;
 - viii. Proposed drainage easements for city maintenance;
 - ix. Recommended structure elevation(s) based on flood zone determinations (indicate FIRM map and panel number);
 - x. Certificates of engineer and/or land surveyor.
 7. Specifications and/or drawing notes detailing proposed construction materials and methods.
 8. Design and construction of all drainage shall be in accordance with standard plans and specifications of the State of Louisiana Department of Transportation and Development (LA DOTD) and these regulations.
 9. After plans have been reviewed by the city engineer, the petitioner will be notified if there are any corrections needed on the plans or specifications prior to the preliminary subdivision hearing before the planning commission. If corrections are required, the petitioner shall submit 15 revised complete plans and a cover letter outlining changes from original plans prior to said hearing. Upon preliminary approval, a work order shall be issued by the city engineer to authorize the petitioner to begin construction. No work toward the construction of the street, drainage and lot infrastructure can begin until said work order/permit has been issued.
 10. Drainage Study and Stormwater Management Plan (SWMP);
 11. Stormwater pollution prevention plan (SWPPP);
 12. Construction of model homes, if applicable (see sections 3.6.E.6.m. and 3.6.M. of this ordinance).

- F. *Action on preliminary subdivision approval for major subdivisions.*
1. After reviewing and discussing the preliminary plat, site plan, other submitted materials and all other reports submitted by other agencies and/or officials, the planning commission will advise the petitioner as to approval, conditional approval, or disapproval of the application and the reasons therefore. Planning commission approval or conditional approval of the preliminary plat shall constitute authorization to the petitioner to prepare and submit a final plat to the planning commission for approval.
 2. In the case of a conditional approval requiring amendment of the preliminary plat, the petitioner shall resubmit the required number of copies of the application documents with the amendments required for approval by the planning commission prior to submission of the final plat.
 3. Failure to submit amended documents sufficient to meet the conditional approval requirements of the planning commission in the prescribed time period shall constitute a failure to meet the conditions of approval and shall cause the application as disapproved.
 4. The planning commission must approve the preliminary subdivision plat before the petitioner(s) can submit plats for final review.
 5. Approval of the preliminary plat shall lapse, unless a final plat of at least the first phase of the development based thereon is submitted within 24 months from the date of such approval, unless an extension of time is applied for and granted by the planning commission. Future phases of development that extend beyond the 24-month limit shall be subject to review by the city engineer to determine if specifications and design standards meet current regulations.
- G. *Appeal of planning commission decision on preliminary subdivision approval for major subdivisions.* The planning commission shall have the authority to grant or deny preliminary subdivision and any other matters brought before it where its purview and jurisdiction prevails; however, any person claiming to be aggrieved by the decision of the commission may appeal such decisions to the 22nd Judicial District Court for the Parish of St. Tammany.
- H. *Construction of project.*
1. All materials for construction of project shall be submitted to the city engineer for approval.
 2. Petitioner shall submit in writing bi-monthly progress reports to planning commission regarding the construction of improvements.
 3. All required tests shall be made in the presence of the city engineer or his duly authorized representative at the expense of the petitioner.
 4. Six sets of as-built drawings and one electronic CAD file of as-built drawings for all utilities and showing exact location of mains, services, etc., shall be furnished to and approved by the city engineer before final acceptance of the subdivision.
- I. *Final subdivision review for major subdivisions.* The final plat shall conform substantially to the preliminary plat as approved; and, if desired by the petitioner, it may constitute only that portion of the approved preliminary plat which the petitioner proposed to record and develop at the time, provided, however, that such portion conforms to all requirements of these regulations. The final plat shall show:
1. Primary control points, or descriptions and "ties" to such control points, to which all dimensions, angles, bearings, and similar data on the plat shall be referred.
 2. Tract boundary lines, right-of-way lines of streets, easements and other right-of-way and property lines of residential lots, sites for public use or open space, and other sites with accurate dimensions, bearings or deflection angles, and radii, arcs, and central angles of all curves.

3. Name and right-of-way width of each street or other right-of-way.
 4. Location, dimensions and purpose of any easement.
 5. Number to identify each lot or site.
 6. Minimum building setback line on all lots and other sites.
 7. Wetland demarcation lines (as determined by the U.S. Army Corps of Engineers) and flood zone demarcation lines (indicate FIRM map and panel number).
 8. Location and description of monuments: Permanent reference monuments shall be shown thus: All corner lot markers shall be permanently located and show thus: "O" and located in the ground to existing grade.
 9. Names of record owners of adjoining unplatted lands.
 10. Names and addresses of persons to whom notice of public hearings shall be sent.
 11. Reference to recorded subdivision plats of adjoining platted land by record name, date and number.
 12. Title, scale, north arrow and date.
 13. Any zoning districts shown on any official map of the city.
 14. Mailing address on each lot.
 15. A site plan showing the location and dimensions of all installed utilities and appurtenances.
 16. The following certificates shall be recorded on the final plat:
 - a. Certificate showing the petitioner is the landowner and dedication of streets, rights-of-way, open spaces and/or recreational parks, and any sites for public use;
 - b. Certificate by surveyor and/or engineer certifying to accuracy of survey and plat;
 - c. Certification by the city's engineer and the city council clerk prior to the approval of the plat that the petitioner has complied with one of the following alternatives:
 - i. Installation of all improvements in accordance with the requirements of these regulations.
 - ii. Upon substantial completion of the improvements as certified by the city engineer (i.e., the improvements can be used for the purposes intended) the petitioner shall post a performance bond, letter of credit, or other surety as determined by the planning commission, in sufficient amount as certified by the city engineer, for completion of all required improvements. For any bond, letter of credit or other surety, there shall be submitted with the plat a determination by the city attorney as to the sufficiency of the bond offered.
 - iii. Certificate by city's engineer and city council clerk prior to approval of the plat that a maintenance bond in an amount sufficient to cover any costs which might be incurred by the city for the maintenance and/or repair to the required improvements for a period of two years after completion has been furnished by the petitioners and accepted by the planning commission.
- J. *Planning commission action on final subdivision review for major subdivisions.*
1. After reviewing and discussing the final plat, other submitted materials and all other reports submitted by other agencies and/or officials, the planning commission will advise the petitioner as to approval, conditional approval, or disapproval of the application and the reasons therefor. Planning commission approval or conditional approval of the final plat shall

- constitute authorization to the petitioner to prepare and submit a final plat to the planning commission for approval.
2. In the case of a conditional approval requiring amendment of the final plat, the petitioner shall resubmit the required number of copies of the application documents with the amendments required for approval by the planning commission.
 3. Failure to submit amended documents sufficient to meet the conditional approval requirements of the planning commission in the prescribed time period shall constitute a failure to meet the conditions of approval and shall cause the application as disapproved.
 4. Failure by the planning commission to act on this final plat within 60 days shall be deemed approval of it.
 5. The planning commission must approve the final subdivision plat before the petitioner(s) can file the plat with the St. Tammany Parish Clerk of Courts.
- K. *Appeal of planning commission decision on final subdivision approval for major subdivisions.* The planning commission shall have the authority to grant or deny final subdivision and any other matters brought before it where its purview and jurisdiction prevails; however, any person claiming to be aggrieved by the decision of the commission may appeal such decisions to the 22nd Judicial District Court for the Parish of St. Tammany.
- L. *Final plat distribution.* When the final plat and site plan have been approved by the planning commission, 15 copies shall be submitted to the planning director for distribution as follows:
1. One approved copy to the petitioner for his records.
 2. One copy retained by the planning commission.
 3. One copy to St. Tammany Parish Tax Assessor's office.
 4. One copy to the St. Tammany Parish Health Unit.
 5. One copy to the St. Tammany Parish Communications District (911) office.
 6. One copy with the certification thereon for filing with the St. Tammany Parish Clerk of Court's office as the official plat that must be filed within 45 calendar days; otherwise, such approval shall be voided.
 7. One copy to city's engineer.
 8. Eight copies to other pertinent governmental agencies.
- M. *Model homes.* For the purpose of allowing the early construction of model homes in a subdivision, the planning commission, at its discretion, may permit a portion of a major subdivision, but involving no more than two lots, to be created in accordance with the procedures for a minor subdivision, provided said portion derives access on existing public streets and provided no future street or other improvement is anticipated where said lots are proposed. The model home development shall be considered as a minor subdivision and shall be subject to the minor subdivision approval process. In requesting the construction of model homes, the model home lots and structure footprints shall be clearly delineated on the preliminary plat and site plan submitted for preliminary approval. Subsequent to preliminary approval of the preliminary subdivision plat, the models may be constructed, subject to such additional requirements as the planning commission may require, however, the model homes shall not be issued certificates of occupancy or sold prior to recordation of the final subdivision plat. In no case shall model homes be allowed in minor or administrative subdivisions.
- N. *Planned unit developments.* For the purpose of encouraging an improved level of aesthetics; safety and environmental sensitivity; and design flexibility in conjunction with a site plan for one unified development site, the city shall facilitate planned unit developments through combination of the conceptual plan and tentative subdivision approval processes.

O. *Fees.*

1. Establishment of fees. The city council shall establish a schedule of fees, charges and expenses and a collection procedure for subdivisions and other matter pertaining to this ordinance. This schedule of fees shall be available from the city council clerk and may be altered or amended only by the city council. No action shall be taken unless or until such costs, charges, fees or expenses have been paid in full, nor shall any action be taken on proceedings before the planning commission unless or until charges and fees have been paid in full.
2. The planning department shall collect and the petitioner shall be required to submit a processing fee in conjunction with the department's acceptance of each complete application for tentative, preliminary or final subdivision to cover the cost of processing and advertising the request. In addition to the processing fees, the petitioner shall be required to pay all professional, including attorney and engineering fees, and all recordation fees incurred by the city in conjunction with the approval process.
3. Method of payment of fees. Required fees shall be paid in money orders or checks made payable to the city and all fees shall be receipted with the original going to the payor, one copy being attached to the application and one copy remaining in the receipt book. All fees incurred by the city in association with an application for subdivision approval or the installation of public improvements which are reimbursable to the city by the petitioner shall be required to be paid by the petitioner prior to final subdivision approval. Current hourly rates for the city engineer, public works director, building official and city attorney are available upon request from the director of administration.

(Ord. No. 2011-34, Exh. A, 12-8-2011; Ord. No. 2014-19, 8-21-2014)

ARTICLE 5. - PERFORMANCE AND DESIGN STANDARDS

The performance and design standards in this article are intended to clarify the expectations of the city. In reviewing a proposed subdivision, the planning commission or planning director shall review the application for conformance with the following performance and design standards and make findings that each has been met prior to the approval of a final plan. In all instances, the burden of proof shall be upon the petitioner to present adequate information to indicate all performance and design standards for approval have been or will be met.

Sec. 5.1. - Basic subdivision layout.

A. *Lots.*

1. Lot arrangement. The lot arrangement shall be such that there will be no foreseeable difficulties, for reasons of topography or other conditions, in securing building permits or other applicable permits to build on all lots in compliance with these and parish health regulations, and in providing driveway access to buildings on such lots from an approved street. The design and layout of lots shall be such that:
 - a. No remnants of property shall be left which do not conform to lot requirements, which are not required for a private or public utility purpose, or which are not accepted by the city and/or any other appropriate public body for an appropriate use.
 - b. When land is subdivided into very large parcels they shall be of such shape and dimensions as to render possible the subdivision of any such parcels at some later date into lots and streets that meet the requirements of these regulations.
 - c. Lots shall be laid out so that drainageways are near the edge of lots and not near the center of a lot. Lots shall be laid out so that drainageways are located appropriately with regard to

natural or manmade drainageways, including those existing and planned for the proposed development. Property lines, where feasible, shall be laid out so that the lines follow the centerline of any drainageway, except when such drainageway is greater than 25 feet in width and is required to be dedicated to the city.

- d. Except where permitted by the planning commission and city council in planned developments with overlay approval by ordinance, or as provided by these regulations, no lot shall be laid out so that it does not have access to and frontage on a dedicated public street according to the requirements of these regulations.
 - e. No lot may be created that is so narrow or irregularly shaped that it would be impracticable to conform to district setback regulations or to construct a building that could be used for purposes that are permissible in that zoning district.
2. Lot area and dimensions.
 - a. The minimum width of lots and minimum area shall conform to the requirements of the comprehensive zoning ordinance.
 - b. Lot dimensions shall comply with the minimum standards of the comprehensive zoning ordinance. In general, side lot lines shall be at a right angle to street lines (or radial to curving street lines) unless a variation from this rule will give a better street to a lot plan. Dimensions of corner lots shall be large enough to allow for erection of buildings, observing the minimum front yard setback from both streets. Depth and width of properties reserved or laid out for business, commercial or industrial purposes shall be adequate to provide for the off-street parking and loading facilities required for the type of use and development contemplated, as established in the comprehensive zoning ordinance.
 - c. Lots on curves or culs-de-sac shall have a minimum 50-foot [width] and meet the minimum lot width for the zoning district at the building setback.
 3. Soil preservation, grading and seeding of lots. In order to preserve soils and prevent unnecessary erosion of lots created, both the area of and the time during which the development and individual lots are exposed to potential erosion shall be kept to the minimum possible. During site preparation and construction of facilities to be dedicated to the public, it is the responsibility of the petitioner to maintain stable soil conditions of lots draining to public areas. All unsold lots affected by grading and clearance during preparation of the subdivision shall be properly stabilized prior to approval of the final plat or release of the performance bond.

B. Blocks.

1. General. The arrangement of blocks shall be such as to provide for convenient access, circulation, control and safety of street traffic. Blocks intended for commercial and industrial purposes shall be designated specifically for such uses with space set aside for off-street parking and loading and/or unloading facilities. Parking requirements shall conform to the comprehensive zoning ordinance.
2. Length. Blocks should not exceed 800 feet or be less than 300 feet in length.
3. Width. The width of blocks should ordinarily be sufficient to allow for two tiers of lots with easements as required, except for double frontage lots as permitted in these regulations and those lots which abut natural buffer zones such as streams, canals or golf courses.
4. Blocks for commercial or industrial development. Blocks designed for commercial and industrial uses shall be of a length and width determined suitable for the proposed use and to accommodate anticipated development. Blocks intended to be used for commercial or industrial purposes shall be designed specifically for such uses with space set aside for buffer, off-street parking and loading and unloading facilities as required by these regulations. Specific design standards and construction standards shall be in accordance with the recommendation of the city engineer or planning director and the standards of this article.

C. Streets.

1. Conformance to the comprehensive land use plan. When a tract of land to be subdivided or re-subdivided includes any part of a proposed arterial or collector street as designated in the comprehensive plan, including all subsequent amendments and additions thereto, these street rights-of-way shall be platted by the petitioner in the location so designated and at the width indicated in this article. Street patterns shall minimize the overall length of local streets, and shall improve efficiency and connectivity while preserving neighborhood character. Whenever possible, street patterns shall be compatible with and connected to existing street grids. Provisions shall be made for the construction, extension or widening of any public streets where justified by the anticipated traffic volume and circulation needs determined by the planning director or his/her duly authorized representative and the planning commission.
2. Intersections.
 - a. Street centerlines shall intersect as nearly as possible to a 90-degree angle, but in no case shall the angle of the intersection be less than 75 degrees or greater than 105 degrees.
 - b. Property lines at intersections shall be rounded with a minimum radius of 12 feet, or otherwise set back to permit curb construction of desirable radius without curtailing the sidewalk at the street corner to less than normal width.
 - c. Submission of a grading plan showing existing and proposed contours at one-foot intervals and a detailed design for the intersection may be required by the planning commission.
 - d. Where a subdivision borders a contained or controlled access highway, the planning commission may elect to require marginal access streets, reverse frontage with screen planting contained in a non-access reservation along the rear property line, deep lot with rear service alleys, or such other treatment as may be necessary for adequate protection of residential properties and to afford separation of through and local traffic. In cases where a controlled access street fronts or passes through a commercial area and marginal access streets are required, commercial facilities may be allowed to front on the marginal access streets.
 - e. A tangent of at least 100 feet shall be introduced between reverse curves on major and collector streets.
3. Right-of-way width and street design standards.

Metric					US Customary				
Minimum width of traveled way (m) for specified design volume					Minimum width of traveled way (ft) for specified design volume				
Design	(veh/day) ^a				Design	(veh/day) ^a			
speed (km/h)	under 400	400 to 1,500	1,500 to 2,000	over 2,000	speed (mph)	under 400	400 to 1,500	1,500 to 2,000	over 2,000
30	6.0 ^a	6.0	6.6	7.2	20	20 ^{sup}	20	22	24

LOW IMPACT DEVELOPMENT: ASSESSMENT & RECOMMENDATIONS

40	6.0 ^{sup}	6.0	6.6	7.2	25	20 ^{sup}	20	22	24
50	6.0 ^{sup}	6.0	6.6	7.2	30	20 ^{sup}	20	22	24
60	6.0 ^{sup}	6.6	6.6	7.2	35	20 ^{sup}	22	22	24
70	6.0	6.6	6.6	7.2	40	20 ^{sup}	22	22	24
80	6.0	6.6	6.6	7.2	45	20	22	22	24
90	6.6	6.6	7.2	7.2	50	20	22	22	24
100	6.6	6.6	7.2	7.2	55	22	22	24	24
					60	22	22	24	24
Width of shoulder on each side of road (m)					Width of shoulder on each side of road (ft)				
All speeds	0.6	1.5 ^c	1.8	2.4	All speeds	2.0	5.0 ^c	8.0	
a.	On roadways to be reconstructed, a 6.6m [22 ft] traveled way may be retained where the alignment and safety records are satisfactory.								
b.	A 5.4m [18 ft] minimum width may be used for roadways with designvolumes under 250 veh/day.								
c.	Shoulder width may be reduced for design speeds greater than 50 km/h [30 mph]as long as a minimum roadway width of 9m [30 ft] is maintained.								

* Upon receipt of a subdivision application, the planning commission may require the petitioner to conduct a traffic impact study to mitigate adverse impacts of the proposed development on the city's roadway system.

4. Curb and gutter street design.
 - a. Criteria for curb and gutter streets/subsurface drainage. In subdivisions with curb and gutter streets, the intervals for installation of curb drainage inlets shall be determined in accordance with the requirements of the Louisiana Department of Transportation and Development Hydraulics Manual. Where these inlets connect to storm sewers, a catch basin shall be installed with the inlet. Storm drain inlets will be placed so that surface water is not carried across intersections or crosswalks. When calculations indicate that curb capacities are exceeded at a point, no further allowance shall be made for flow beyond that point and a basin shall be used to intercept flow at that point. Drainage plans submitted with the drainage report will show surface water drainage patterns for each and every lot and block and all design specifications for land development.
 - b. Curbs and gutters. Curbs and gutters shall be permanent six-inch concrete curbs with 24-inch integral concrete gutters, standard rolled curb and gutter or other construction approved by the city engineer.
 - c. Material and construction specifications for all subsurface drainage projects shall be in compliance with the requirements of all American Society for Testing and Materials (ASTM) and Louisiana Department of Transportation and Development Highway Construction Standards.
 5. Dead end streets. Dead-end streets or culs-de-sac shall be provided at the closed end with a turn-around having an outside roadway radius of at least 40 feet and a right-of-way radius of 50 feet. A cul-de-sac street shall not exceed 300 feet in length, measured from the entrance to the centerline of the turnaround.
 6. Street names and signage.
 - a. Continuation of existing streets shall assume the same name as the existing street. Proposed street names shall not be used that duplicate or closely resemble the name of existing streets. Street names shall be subject to the approval of the St. Tammany Parish 911 Addressing Officer and the Planning Commission.
 - b. Street name signs shall be placed by the petitioner at all street intersections at locations designated by the city engineer. One street name sign shall be placed at the intersection of two-lane streets. Two street name signs shall be placed at intersections of a two-lane and a four-lane street or at intersections of two, four-lane streets.
 - c. Street signs shall be constructed and mounted in a manner approved by the city engineer, with the agreement of the public works director.
 7. Private streets. There shall be no private streets platted in any subdivision within the city limits of Covington. Every lot in subdivided property shall be served by a publicly dedicated street.
- D. *Utility/public servitudes.* Servitudes shall be provided across lots or centered on rear or side lot lines for utilities and total width shall be at least 20 feet wide, unless the servitude is adjacent to the street right-of-way, in which case the city engineer shall determine the required servitude.

1. Intersections. Where easements intersect or sharp changes in alignment are necessary, corners shall be cut off sufficiently to permit equipment access.
 2. Buildings. No buildings, fences or other structures will be permitted within utility easements.
 3. Overhangs. Any overhanging limbs, shrubbery, or vegetation of any kind may be removed from within the limits or easements at the sole discretion of the maintenance personnel of the utilities installed or to be installed in the easement.
 4. Pedestrian easements. Where street lengths exceed 800 feet between intersections with other streets, the planning commission may require a utility/pedestrian easement, at least 20 feet in width, to provide for underground utility crossings and/or a pedestrian pathway of at least four feet in width constructed in accordance with design standards for sidewalks. Maintenance obligations of the easement shall be included in the written description of the easement.
- E. *Preservation and public use.*
1. General requirements. Existing features that would add value to residential development or to the city as a whole, such as trees required to be preserved by these regulations, watercourses, historic spots, and similar irreplaceable assets, shall be preserved in the design of subdivisions or other developments. No trees shall be removed from any subdivision nor the grade of the land within the subdivision be altered until approval of the preliminary plat has been granted. If certain trees on the plat are to be retained, they shall be preserved and the area of land within their drip lines shall be protected against any change of grade.
 2. Public use and open space. The petitioner of each major subdivision for residential or commercial development shall dedicate a portion of such land, in accordance with this section, for a public park, greenway, recreation and/or open space site to serve the natural and recreational needs of the subdivision or development.
 - a. *Amount of land to be dedicated.*
 - i. Each new subdivision shall be required to include a minimum of six percent of the total land area of the subdivision site as an open space contribution.
 - ii. Where the comprehensive land use plan proposes community or public facilities or open spaces that are located in whole or in part within any proposed subdivision up for approval, the planning commission shall require the reservation of an area within the subdivision sufficient to accommodate such facilities. If said facilities are open space or recreational in nature, this reservation shall contribute to the required six percent minimum.
 - iii. The planning commission may allow the petitioner to provide one acre of created wetlands habitat in lieu of one and one-quarter acres of otherwise required open space, provided such created wetlands constitute less than 20 percent of the total required area.
 - b. *Nature of land to be dedicated.* Except as otherwise required by the planning commission, at the time of preliminary plat approval, all dedications of land shall meet the following criteria:
 - i. The dedicated land shall form a single parcel of land, except where the planning commission determines that two or more parcels would be in the best interest of the public. In such cases, the planning commission may require that such parcels be connected by a greenway or other form of pedestrian access.
 - ii. At least one-half of the total land dedicated shall be located outside areas of special flood hazard areas as determined by FEMA, lakes or other water bodies and areas with slopes greater than 15 percent, and at least 75 percent of the total land dedicated shall be located outside of wetlands subject to federal or state regulatory jurisdiction. Lakes, ponds, creeks, or other water bodies, and wetlands may be dedicated only if a sufficient

- amount of abutting land, as determined by the planning commission, is dedicated as a public recreation area or park or if such area constitutes a necessary part of the drainage control system.
- iii. The dedicated land shall be located so as to reasonably serve the recreation and open space needs of residents of the subdivision and to comply with the comprehensive plan.
 - iv. Public access to the dedicated land shall be provided either by adjoining public street frontage or by a dedicated public easement, at least 60 feet wide, which connects the dedicated land to a public street or right-of-way. Where the dedicated land is located adjacent to a street, the petitioner shall remain responsible for the installation of utilities, sidewalks, and other improvements required along that street segment.
 - c. *Procedure for dedication of land.* The dedication of such land shall be reviewed and approved as part of the preliminary plat or, in the case of planned unit developments, the master land use plan. The petitioner shall designate on the preliminary plat and the master land use plan, if any, the area or areas of land to be dedicated pursuant to this section. Where wetlands falling under the jurisdiction of state or federal agencies have been certified to exist on the property, the wetlands shall be designated. Upon receipt of the preliminary subdivision plat or the master land use plan, the planning director shall submit any and all recommendations concerning the land to be dedicated to the planning commission.
 - d. *Submission of deed and survey.* An executed general warranty deed conveying the dedicated land to the city, and reproducible survey, shall be submitted no later than two years after the approval of the preliminary plat or PUD master land use plan, or by the time that 50 percent of the certificates of occupancy have been issued, whichever is earlier.
3. Existing trees to be preserved. Subdivisions shall be planned to minimize destruction of trees and topsoil, and to preserve large trees that will add to the attractiveness and value of the subdivision. Rights-of-way shall be planned in such a way as to avoid interference with or destruction of trees with significant aesthetic or historical value.
 - a. The petitioner shall identify the location of proposed street trees or existing street trees proposed to be preserved, including existing live oak trees eight inches dbh and other trees 24 inches or greater dbh. These trees shall remain unless or until a development permit is approved by the city, in accordance with the requirements of these regulations, for the removal of the trees.
 - b. The petitioner shall identify live oak trees eight inches dbh or greater, existing densely wooded areas, isolated hardwood trees outside of densely wooded areas which measure ten inches dbh and/or pines measuring 30 inches dbh or greater located in proposed subdivision set asides for open space, including any parcels to be dedicated as parks or open space or any required yard setback areas of developable lots. These trees shall remain unless or until a development permit is approved by the city, in accordance with the requirements of these regulations, for the removal of the trees.
 - c. Vegetation buffer zones shall be required to be maintained in their natural state or when the natural vegetation is deficient to meet the requirements of the vegetation buffer zone as described in the landscaping provisions of section 4.2 of the comprehensive zoning ordinance, the minimum required planting as set forth in section 4.2 of the comprehensive zoning ordinance shall be installed by the petitioner unless or until a development permit is approved by the city, in accordance with the requirements of these regulations, for the removal of the trees.
 - F. *Erosion and sedimentation impact on water bodies.* In the event that any petitioner shall intend to make changes in the contour of any land proposed to be subdivided, developed or changed in use by grading, excavating or the removal or destruction of the natural topsoil, trees, or other vegetative covering thereon the same shall only be accomplished after the owner of said land or his agent has

submitted to the planning commission or its duly authorized representative, for approval, a plan for erosion and sedimentation controls. Such plans shall contain adequate measures for control of erosion and siltation, where necessary, using the guidelines and policies contained herein. The planning commission or its duly authorized representative shall review these plans as submitted during the tentative approval process, and shall take necessary steps to insure compliance by the petitioner with these plans as finally approved. The requirements for plan submission are as follows:

1. Three sets of plans for control of erosion and sedimentation shall be submitted to the planning commission, including the completed State of Louisiana Stormwater Pollution Prevention Plan when applicable.
2. The estimated cost of accomplishing such erosion and sedimentation measures shall be stated in the construction agreement and shall be covered in any required performance bond and the maintenance bond.
3. Guidelines for erosion and sediment control.
 - a. Lots shall be developed to maximize the amount of natural drainage that is percolated into the soil and to minimize direct runoff into adjoining streets and watercourses. The development plan should be fitted to the topography and soils so as to create the least erosion potential.
 - b. Sediment basins (debris basins, desilting basins, or silt traps) should be installed to prevent soil erosion and sedimentation from entering waterbodies, wetlands, and adjacent properties.
 - c. Wherever feasible, and in areas where required by the provisions of this ordinance, natural vegetation should be retained and protected.
 - d. Cutting and removal of vegetation along waterbodies shall not result in shoreline erosion or sedimentation.
 - e. Where necessary, temporary vegetation and/or mulching should be used to protect areas exposed during development.
 - f. The permanent final vegetation and structures should be installed as soon as practical.
 - g. Provisions should be made to effectively accommodate the increased runoff caused by changed soil and surface conditions during and after development.
 - h. Topsoil shall be considered part of the subdivision and shall not be removed from the site except for surplus topsoil from roads, parking areas and building excavations.
 - i. At the building permit application stage, a review will be conducted by the building official or his/her duly authorized representative to insure conformance with the plan as approved.

(Ord. No. 2011-34, Exh. A, 12-8-2011)

Sec. 5.2. - Stormwater drainage requirements.

A. Definitions.

- a. *Best Management Practice (BMP)* means any man-made or natural structure, system, landscape feature, channel, or improvement designed, constructed, installed, and/or used to detain, retain, infiltrate, filter, or otherwise control stormwater runoff quality, rate, or quantity.

- b. *Bioretention* means the process of collecting stormwater in a treatment area consisting of soil and plant materials to facilitate infiltration and remove sediment and other contaminants through physical, chemical, and biological processes.
 - c. *Construction activity* means construction or demolition activity, clearing, grubbing, or excavation or any other activity that may result in land disturbance.
 - d. *Detention* means slowing, dampening, or attenuating runoff flows entering the storm drainage system by temporarily holding water in areas such as detention basins, reservoirs, on roof tops, or within the drainage system itself, and releasing the water at a desired rate of discharge.
 - e. *Development* means any human-induced change to improved or unimproved property, including but not limited to: construction, installation, or expansion of a building or other structure; land division; drilling; and site alteration such as dredging, grading, paving, excavation, filling or clearing. Development includes both development of new structures and modifications, alterations, or additions to an existing structure.
 - f. *Drainage Area* means a catchment area formed by natural or man-made topography that drains to a given point.
 - g. *Green Infrastructure* means stormwater systems or features that mimic the natural water cycle and are used to manage the quantity and quality of runoff associated with development. The term encompasses a wide array of best management practices and methods including, but not limited to bioretention, detention, permeable pavement, and green roofs.
 - h. *Impervious Surface* means any building, pavement, structure, or other material that impedes the natural infiltration of water into the ground.
 - i. *Infiltration* means the penetration and movement of water through the earth's surface.
 - j. *Municipal Separate Storm Sewer System ("MS4")* means a conveyance or system of conveyances, including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains, separate from a sanitary sewer, that conveys runoff from individual parcels and public rights-of-way to storm drains, treatment facilities and/or receiving waters.
 - k. *Stormwater Runoff* means any part of precipitation that flows over the land during or following a rain event.
 - l. *Stormwater* means water that originates as precipitation on a particular site, basin, or watershed.
- B.. *General requirements.* A subdivision plat shall not be considered for preliminary approval until the petitioner has submitted to the planning commission a drainage study and Stormwater Management Plan as defined in herein by a civil engineer registered in the State of Louisiana, demonstrating how the proposed development will not increase run-off from the pre-developed state or cause damage to the developed or undeveloped land downstream, below or adjacent to the proposed subdivision.
1. The petitioner shall plan all drainage facilities of the proposed subdivision or site or tract development in accordance with the city drainage improvement program, the requirements of these regulations, Louisiana Department of Transportation and Development (LA DOTD) highway

drainage construction requirements, and/or as required by the city engineer with the assistance of the public works director and other applicable state and federal agency requirements.

2. All proposed subdivisions shall be reviewed by the planning commission and the city engineer and public works director in order to assure that:
 - a. All such proposals are consistent with the need to minimize flood damage;
 - b. All public utilities and facilities such as sewer, gas, electrical, and water systems are located, elevated, and constructed to minimize or eliminate flood damage;
 - c. Adequate drainage is provided on-site so as to reduce exposure to flood hazards within and adjacent to the development site;
 - d. The development plat contains a clear delineation of floodway and floodplain areas as identified on the city's FIRM maps and has the notation that "land use in a floodway or floodplain is substantially restricted."

3.

3. Stormwater Management Plan requirements.

Stormwater Management Plans shall include the following components:

(a) Drainage Study.

A drainage study shall be completed and stamped by a civil engineer licensed in the state of Louisiana and shall be submitted for all developments that require Stormwater Management Plans. The drainage study will include an analysis both pre-development and post-development runoff. The applicant shall also provide a peak flow and water surface profile for the 100-year, 25-year and 10-year 24-hour storm events. The hydrological analysis shall meet all applicable City ordinances and the following requirements:

- (1) The engineer shall also study the effect of any proposed development on existing downstream drainage facilities outside the area of the development. Local drainage studies, together with any other appropriate study, shall serve as a guide to needed improvements as determined by the City.
- (2) No development may be constructed or maintained so that surface waters from such development are collected and channeled downstream at such locations or at such volumes or velocities as to cause degradation, alteration or damage to lower adjacent properties.
- (3) No development may be constructed or maintained where such development would impede the flow of water from upstream properties across the property proposed to be developed. All drainage rights-of-way and culverts or other drainage facilities shall be large enough to accommodate runoff from the proposed development as well as upstream flow originating outside of the proposed development site.

(b) Proposed Site Stormwater Management Plan.

The Proposed Site Stormwater Management Plan shall include post-development stormwater best management practices (BMPs) that limit the post-developed peak flow rate to the pre-developed peak flow rate for the 10-year, 24-hour and the 25-year, 24-hour storm event.

4. Design Requirements.

(a) Stormwater management plans shall be designed to reduce stormwater pollutants wherever feasible, and must be supported by a combination of stormwater BMPs, in the following order of priority:

- (1) Create conditions that allow retention and infiltration of stormwater runoff on-site by using pervious paving materials, bioretention areas, green roofs, and other methods that allow pollutants to settle and water to evapo-transpirate or infiltrate into soil.
 - (2) Additional stormwater runoff that cannot be infiltrated should be detained, stored, and filtered through the use of BMPs.
 - (3) Runoff in excess of the holding capacity of the BMPs shall exit the site through surface or subsurface drainage.
- (b) All stormwater management facilities shall be designed to provide an emergency overflow system and incorporate measures to provide a non-erosive velocity of flow along its length and at any outfall.
- (c) All BMPs designed to drain and/or infiltrate must be designed to drain from a full condition within a maximum of twenty-four (24) hours to prevent breeding of mosquitos and other waterborne pests.
5. Areas of poor drainage. Whenever a plat is submitted for an area that is subject to flooding, the planning commission shall not approve such subdivision unless or until any required permits for the development of such areas have been issued by any wetlands agency with jurisdiction over the property. The planning commission may only approve such subdivision when the plat of such subdivision shall provide for an overflow zone along the bank of any stream or watercourse, in a width which shall be sufficient in times of high water to contain or move the water, and no fill shall be placed in the overflow zone nor shall any structure be erected or placed therein. The boundaries of the overflow zone shall be subject to approval by the city engineer and public works director. Development of areas of extremely poor drainage will be discouraged.
 6. Floodplain areas. The planning commission may, when it deems it necessary for the health, safety, or welfare of the present and future population of the area or necessary to the conservation of water, drainage, and sanitary facilities, prohibit the subdivision or development of any portion of property that lies within the floodplain of any stream or drainage course. These floodplain areas shall be preserved from any and all destruction or damage resulting from clearing, grading, or dumping of earth, waste material, or stumps, except as otherwise expressly permitted by the planning commission and concurred in by appropriate state and federal agencies.
 7. The storm or flood water drainage system shall be separate and independent of any sanitary sewer system and shall be located within the street right-of-way except where it is located in servitudes to facilitate outfall needs or for subdivision interconnections.
 8. No individual, partnership, or corporation shall deepen, widen, fill, reroute or change the location of any existing ditch, stream, drain or drainage canal without first obtaining written permission from the city engineer, the public works director and all other applicable state and federal agencies. Plans for such filling, deepening, widening, rerouting, or changing the location of any existing ditch, stream, drain, or drainage canal shall comply with all design requirements and improvement standards of these regulations, as well as all applicable state and federal agency requirements. All such work shall be constructed under the review and subject to the approval of the city engineer, the public works director and all other applicable state and federal agencies. Adequate servitudes of rights-of-way must be dedicated for the construction and maintenance of any drainage ways that may be relocated. No structures shall be erected or placed upon the drainage easements.
 9. For all drainage channels originating within the subdivision, either new or existing, which are to be substantially altered by the petitioner, the petitioner shall make surface or subsurface drainage improvements according to the requirements of the drainage improvement program and these regulations. The planning commission and the city engineer and public works director will decide when such drainage channels are substantially altered.
 10. The natural drainage within the subdivision shall be followed insofar as economically feasible. Streets and lots shall be arranged so as to keep artificially relocated drainage canals to a minimum.

- C. *Street drainage systems.* All roadways shall be provided with an adequate storm drainage system. The road storm drainage system shall serve as the primary drainage system and shall be designed to carry roadway, adjacent land and building stormwater drainage. No stormwater shall be permitted to run into the sanitary sewer system within the proposed subdivision.
- D. *Off-street drainage systems.* The design of the drainage system and required easements shall include the watershed affecting the subdivision and shall be extended to a waterbody, natural watercourse or roadside ditch adequate to receive the storm or flood water drainage. An existing natural watercourse shall remain in its natural state. Manmade elements of this system may be designed as either open or subsurface systems.
- E. *Dedication of drainage easements and rights-of-way.*
1. General requirements. If a watercourse traverses a subdivision, drainage way, channel or stream, an easement or drainage right-of-way conforming substantially to the lines of such watercourse shall be provided. The easement or right-of-way shall be of sufficient width to accommodate the watercourse and provide for maintenance of the watercourse. Whenever possible, it is desirable that the drainage way be maintained as an open channel with landscaped banks that approximates naturally occurring or predevelopment conditions and be of adequate width for maximum potential volume of flow and maintenance.
 2. Drainage easements.
 - a. Where topography or other conditions are such as to make impractical the inclusion of drainage facilities within road rights-of-way, perpetual unobstructed drainage easements at least 20 feet in width, depending on width of drainage facility, shall be dedicated to the city for drainage ways that traverse property outside the road right-of-way lines with satisfactory access to the road. If the drainage easement abuts a street right-of-way, a ten-foot easement may be allowed, as determined by the city engineer. All easements shall be indicated on the plat and shall extend from the road right-of-way across the property to the easement of a natural waterbody or watercourse or to other drainage facilities as have been approved as the terminus of the easement.
 - b. When a proposed drainage system will carry water across private land outside the subdivision, appropriate drainage rights and easements across abutting property must be secured prior to the final subdivision approval and such easements must be indicated on the plat.
 - c. The necessary width of all drainage easements, whether supporting manmade or natural drainage ways shall be determined by the petitioner's engineer and approved by the city engineer and public works director. When any of these drainage easements overlap, the largest area will be used to determine the minimum drainage easement.
 - d. The drainage areas described above shall be included in areas for drainage easement or fee-simple dedication and shall be preserved and retained in their natural state. Such land shall not be computed in determining the number of lots to be utilized for average density procedure nor for computing the area requirement of any lot.
 3. Acceptance of residential retention/detention ponds into city maintenance system. In order to prevent flooding and improve water quality, the city requires that all new development maintain a retention/detention system to control the release rate for stormwater leaving the property.
 - a. In the case of all privately-owned stormwater management facilities, including stormwater infrastructure on commercial or institutional property, or contained within residential common areas, the owner, at his/her sole expense, shall:
 - i. Maintain the retention/detention facility in a structurally sound condition so that it satisfies the drainage function for which it was intended;

- ii. Maintain the retention/detention facility in a clean and safe condition so as not to constitute a hazard or nuisance to the public; and
 - iii. Maintain the retention/detention facility in accordance with all rules, standards and regulations applicable thereto as may from time to time be enacted by any governmental agency or authority.
- b. The city shall be authorized at any time to enter upon the premises through an unobstructed easement for purposes of retention/detention facility inspection. Written notice of the city's intention to so enter shall be given to the owner at least 24 hours in advance of said entry. Except, however, in the case of emergency threatening loss of life or property, the city shall have immediate access to the retention/detention facility and the right, but not the obligation, to perform any required maintenance, the cost of which is to be paid by the owner, to maintain the function of the facility.

F. *Nature of stormwater facilities.*

1. Responsibility for runoff. The petitioner will be responsible for the proper management and disposal of site runoff, whether by on-site retention or detention or by conveyance via pipe, swale, stream, or ditch. This includes any spring or surface water that may exist prior to or as a result of the subdivision. Such drainage facilities shall be located on-site or in the street right-of-way where feasible, or in perpetual unobstructed easements or dedicated rights-of-way of appropriate width as determined by the city engineer and public works director according to the requirements of this article.
2. Accessibility to public storm sewers.
 - a. Where a public storm sewer is accessible, the petitioner shall install storm sewer facilities if so required by the city engineer and public works director. If no outlets are within a reasonable distance, adequate provision shall be made for the disposal of stormwater, in accordance with the plans developed by the petitioner's engineer and approved by the city engineer and public works director. In subdivisions containing lots less than or equal to 20,000 square feet in area and in business and industrial districts, on-site or underground storm sewer systems shall be required to be constructed throughout the subdivision and be connected to an approved outfall.
 - b. If connection to a public storm sewer will be provided eventually, as determined by the city engineer and public works director and the planning commission, the petitioner shall make arrangements for future stormwater disposal by a public utility system at the time the plat receives final approval. Provision for such connection shall be incorporated by inclusion in the performance bond required for the subdivision plat.
3. Fencing, landscaping and maintenance provisions for drainage channels. If a watercourse is left open the petitioner shall adequately protect all such drainage ways to the satisfaction of the planning commission, the city engineer and public works director and these regulations.
 - a. Where a watercourse is left open, it may be determined by the planning commission or city engineer and public works director that the petitioner will be required to protect the drainage way by the installation of fencing in accordance with the requirements of these regulations.
 - b. The petitioner shall be required to retain in its natural state or to grade and plant to adequately protect all surface drainage ways from erosion during construction to the satisfaction of the planning commission, the city engineer and public works director, according to the provisions of these regulations. Wherever practical, native hydric vegetation shall be maintained in place or removed and replanted after grading operations are complete. All newly constructed channels shall be seeded or sodded or replanted with native hydric vegetation depending on the slope and type of soil. The requirements for seeding or sodding improvements shall be in compliance with LA DOTD construction standards, the requirements of this section and the requirements of these regulations.

- c. Any watercourse or drainage easement shall be wide enough to contain the required slope with ample clearance for the operation of maintenance equipment according to the provisions of this article.

G. *Floodplain management.*

1. When any part of a subdivision is located in a special flood hazard area as identified by the Federal Emergency Management Agency:
 - a. All public utilities and facilities, such as sewer, gas, electrical and water systems shall be located and constructed to minimize or eliminate flood damages.
 - b. Adequate drainage shall be provided so as to reduce exposure to flood hazards.
 - c. The plan shall include a statement that habitable structures in the subdivision shall be constructed with their lowest floor, at least one foot above base flood elevation. Such a restriction shall be included in any deed, lease, purchase and sale agreement, or document transferring or expressing intent to transfer any interest in real estate or structure, including but not limited to a time-share interest. The statement shall clearly articulate that the municipality may enforce any violation of the construction requirement and that fact shall also be included in the deed or any other document previously described. The construction requirement shall also be clearly stated on the plan.

(Ord. No. 2011-34, Exh. A, 12-8-2011; Ord. No. 2015-07, 3-4-2015)

Sec. 5.3. - Improvement standards.

A. *General.* Unless otherwise stated in these regulations, the following accepted standards will be enforced by the city engineer during the review and inspection of all new infrastructure:

1. AASHTO Standards, ASTM Standards or DOTD Test Procedures;
2. State of Louisiana, Department of Transportation and Development, *Standard Specifications for Roads and Bridges* (LSSRB), current edition;
3. State of Louisiana, Department of Transportation and Development, *Location and Survey Manual* , current edition;
4. State of Louisiana, Department of Transportation and Development, *Roadway Design Procedures and Details* , current edition;
5. State of Louisiana, Department of Transportation and Development, *Hydraulics Manual* , current edition;
6. State of Louisiana, Department of Transportation and Development, *Manual of Uniform Traffic Control Devices* , current edition;
7. State of Louisiana, Department of Transportation and Development, *Traffic Signal Design Manual* , current edition;
8. National Environmental Policy Act of 1969 (42 U.S.C 4321 et seq.) (NEPA).

B. *Streets.*

1. *General.*
 - a. All streets shall be paved with Portland cement concrete pavement as prescribed herein. Street grades shall be established in such a manner that building slabs will be a minimum of 12 inches above the centerline of the street. Pavement design shall be based on subgrade soils and street functional classification as designated in the comprehensive plan, including all subsequent amendments and additions thereto.

- b. The planning commission may allow alternative paving treatments to include the use of permeable paving materials where the specified material and construction methods are appropriate to the use proposed by the applicant.
 - c. The planning commission may waive the concrete pavement requirement and approve the construction of asphaltic concrete material when keeping in character with existing asphalt streets in the surrounding area. The petitioner’s engineer must design the street based upon the results of the soil boring report. At a minimum, the street design must conform to the Louisiana Department of Transportation and Development Standard Specifications for Roads and Bridges (LSSRB), current edition. The design must be reviewed and approved by the city engineer and/or the public works director.
2. Clearing of right-of way. The right-of-way shall be cleared according to the requirements of the standard road cross-section, prior to any other work except that any trees of aesthetic value as defined in section 5.1.E.3. of this ordinance shall be protected provided that they are located at least ten feet from the proposed edge of the finished roadway, unless their removal is approved by the planning director and the city engineer.
3. Excavation and subgrade preparation.
- a. *Materials testing.* Testing of materials shall be performed by a testing firm(s) licensed in the State of Louisiana to insure conformity with the subdivision street design and construction standards for the city, the cost of such testing borne by the petitioner. A minimum 24-hour notice shall be required prior to inspection work. The comprehensive strength of all roadways and required base preparation shall be established based upon the Louisiana Department of Transportation and Development Standard Specifications for Roads and Bridges (LSSRB), current edition.
 - b. *Soils testing.*
 - i. All soils testing is to be the responsibility of the petitioner. All sampling and testing of soils shall be performed by a testing firm(s) and/or geotechnical engineer(s) licensed in the State of Louisiana to insure conformity with the subdivision street design and construction standards for the city, the cost of such testing borne by the petitioner.
 - ii. Soil samples shall be taken along the centerline of all proposed streets at a maximum interval of 300 feet.
4. Subgrade.
- a. Determination of soil group index (P.C.A.):

Fair	2-4 group indexes
Poor	5-9 group indexes
Very poor	10-20 group indexes

To calculate a soils group index use the following formula: $Group\ Index = 0.2a + 0.005ac + 0.01d$.
Where:

a = That portion of percentage passing No. 200 Sieve greater than 35 percent and not exceeding 75 percent expressed as a positive whole number from 1 to 40.

b = That portion of percentage passing No. 200 Sieve greater than 15 percent and not exceeding 55 percent expressed as a positive whole number from 1 to 40.

c = That portion of the numerical liquid limit greater than 40 and not exceeding 60, expressed as a positive whole number from 1 to 20.

d = That portion of the numerical plasticity index greater than 10 and not exceeding 30 expressed as a positive whole number from 1 to 20.

Example: Calculation of a group index:

Given: L.L. = 30 and P.I. = 13

 Passing No. 200 sieve = 65%

Calculation:

a = 65 - 35 = 30

b = 55 - 15 = 40

c = 0

d = 13 - 10 = 3

Group Index $(0.2 \times 30) + (0.005 \times 30 \times 0) + (0.01 \times 40 \times 3) 7.2 = 7$.

b. Determination of soil classification per AASTHO Standards.

Table 5.3: Soil Classification (AASHTO)											
General Classification	Granular Material (35% or less passing No. 200)							Silt Clay Materials (More than 35% passing No. 200)			
	A-1-a	A-1-b	A-3	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7-5 A-7-6
Sieve analysis % passing:											
No. 10	50 max										
No. 40	30 max	50 max	51 max								
No. 200	15 max	25 max	10 max	35 max	35 max	35 max	35 max	36 min	36 min	36 min	36 min

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Characteristics of fraction passing No. 40:											
Liquid limit				40 max	41 min	40 max	41 min	40 max	41 min	40 max	41 min
Plastic index	6 max		N.P.	10 max	10 max	11 min	11 min	10 max	10 max	11 min	11 min
Group	0	0	0	4 max		8 max	12 max	16 max	20 max		
Usual types of significant constituent materials	Stone fragments, fine gravel and sand		Silty or clayey soils				Silty soils		Clayey soils		
General rating as subgrade	Excellent to good						Fair to poor				

Classification procedure: With required test data available, proceed from left to right on above chart and correct group will be found by process of elimination. The first group from the left into which the test data will fit is the correct classification.

- Plasticity index of A-7-5 subgroup is equal to or less than L.L. minus 30. Plasticity index of A-7-6 subgroup is greater than L.L. minus 30.
- See group index formula and Figure 1 for method of calculation. Group index should be shown in parentheses after group symbol.

Example: Using the data in the example above, the soil classification is A-6(7).

5. Portland cement concrete pavement.
 - a. *Concrete thickness.*

Street type	Pavement thickness
Local street	Six inches (6")
Collector street	Seven inches (7")

Commercial subdivision	Eight inches (8")
Arterial street	Ten inches (10")

- b. *Concrete mix design.* Concrete shall be proportioned to produce a minimum compressive strength of 4,000 psi at 28 days. The minimum cement content shall be 5¾ sacks (94 lbs./sack) of cement per cubic yard with a maximum water-cement ratio [ratio] of six gallons of water per bag. Slump of the concrete shall range from two inches to four inches when using a vibrating screed and from one to two and one-half inches when using a slip form paver. Concrete mix shall conform to requirements for Type B pavement per Section 901 of the LSSRB, except that blast furnace slag shall not be allowed. Fly ash shall be limited to ten percent of the required cement content. The concrete mix formula shall be prepared by the testing laboratory and approved by the city engineer.
- c. *Base course.* The minimum base course for arterial streets shall be eight inches of Class I material in compliance with Section 301 of the LA Standard Specifications for Roads and Bridges (LSSRB), 2006 edition or later edition and amendments thereto. The minimum base course for collector streets shall be six inches of Class I material in compliance with Section 301 of the LSSRB, 2006 or later editions and amendments thereto. The base course for local streets shall be six inches of A-1 through A-4 material compacted to 97 percent standard proctor density.
- d. *Subgrade.* The subgrade shall be brought to line and grade and the top six inches compacted to 95 percent standard proctor density. All subgrade material which will not satisfactorily compact shall be removed and replaced with material that will meet compaction requirements. Where the subgrade is nonuniform it shall be scarified to a depth of six inches for its full width and the material blended and brought to line and grade and compacted as specified above.
- e. *Load transfer devices.* Load transfer devices shall be required for all subdivisions. The type of devices used shall be either dowel bars or cantilever devices as approved by the latest edition of the Louisiana Standard Specifications for Roads and Bridges.
- f. *Testing.* One set of four cylinders shall be made for each 50 cubic yards of concrete placed or portion thereof. Concrete cylinders shall be moist cured in the laboratory after sufficient curing time has elapsed to transport the cylinders. One cylinder shall be broken at seven days and two shall be broken at 28 days. One cylinder shall be kept in reserve. Test results shall be forwarded to the city engineer. One density test shall be taken for each 2,000 square yards of base or subgrade. The density test shall be taken at random locations and a minimum of one test shall be taken on all streets.
- g. *Joints.*
 - i. Maximum joint spacing:
 - 1. Expansion joints—90 feet on center and at intersection as headers.
 - 2. Longitudinal keyed joints with tie bars—Located parallel to the pavement centerline.
 - 3. Dummy joints—15 feet on center between expansion joints.
 - 4. All joints shall be constructed in compliance with the Louisiana Department of Transportation and Development *Standard Specifications for Roads and Bridges* (LSSRB), current edition.

C. *Sidewalks.*

- 1. *Location.* Sidewalks shall be required to be located within the dedicated street right-of-way of all streets and shall be constructed as required by these regulations. Sidewalks shall be installed approximately one

foot from the front property line (one foot from the side property line on corner lots) on all new building sites, and all renovations exceeding 50 percent of the marketable value of the structures on one plot of land.

2. Grade. Sidewalks shall be a minimum of four feet in width, a minimum of four inches in thickness, constructed of Portland cement concrete pavement, and conform to all city, state, and federal construction standards and regulations.
 3. Access provisions for disabled persons. Whenever curb and gutter construction is used on public streets, wheelchair ramps for the handicapped shall be provided at intersections and other major points of pedestrian flow, such as crosswalks. Wheelchair ramps and depressed curbs shall be constructed in accordance with minimum standards required by Title III of the Americans with Disabilities Act, Public Law 101-336.
- D. *Utilities.* Wherever possible, easements for public utilities (water, sewer, and drainage) shall be located within the dedicated street right-of-way and easements for private utilities (gas, electric, telephone, and CATV) shall be located outside the dedicated street right-of-way (see sections 5.1.D. and 5.2.D.). When, for whatever reason, it is necessary that utilities, including drainageways, are required to be located at the rear or side lot lines, a perpetual unobstructed easement shall be provided along the rear or side lot line of each lot to accommodate the utilities and any other proper public purpose. Such easements shall be adequate to provide access for maintenance of the utility within the rear or side yard easement, including equipment and vehicles.
1. Water lines located in the street right-of-way shall be placed on the opposite side of the street from sanitary sewer lines unless a variation is approved by the city engineer.
 2. Street light standards may be located on either side of the street or in the center of the median on boulevards (see section 5.3.J.1.).
 3. All private utility facilities, included but not limited to gas, electric, telephone and cable, shall be located underground. All utility facilities existing and proposed shall be shown on the conceptual sketch plat, the preliminary plat, and the final plan. All deviations from the final plan shall be clearly noted on the as-built plan (see section 3.6.H.4.).
 4. All utilities with above grade equipment should position the respective equipment to occupy the easement near common lot corner of adjacent lots. Utilities making service laterals without above grade equipment should not be closer than five feet from the common lot corner of adjacent lots in order to minimize the likelihood of a conflict when installing or maintaining their facilities.
- E. *Sewerage.* The petitioner shall provide adequate sewer lines to each lot. Sewer connections and subdivision sewer systems shall comply with the regulations of the State of Louisiana Department of Health and Hospitals, and as specified herein.
1. All sanitary sewer systems shall conform to the following requirements:
 - a. All sewer mains installed within such subdivisions shall be at least eight inches in diameter and must be of one of the following materials:
 - i. PVC sewer pipe meeting the requirements of ASTM D3034, with a maximum SDR of 35 and a minimum F/Y stiffness of 45 psi tested in conformance with ASTM D2412.
 - ii. Ductile iron pipe conforming to ASTM A746.
 - iii. Pipe bedding shall be approved by the city engineer.
 - b. Manholes shall be constructed of the following materials:
 - i. Pre-cast concrete conforming to ASTM C478.
 - ii. Manhole castings shall be heavy duty, shall have a 22-inch opening and shall match the manhole.
 - iii. The interior of all manholes shall be coated with a two-part coal tar epoxy acceptable to the city engineer or shall be constructed of concrete containing a crystalline waterproofing admixture (e.g., Xypex) subject to the approval of the city engineer.

- c. Force mains designs shall be submitted to the city engineer for review. Force mains may be PVC or ductile iron. Force mains shall be tested at a pressure of 100 psi for two hours. Leakage shall not exceed ten gpd-in.-dia.-mile. PVC pipe shall be class 160 conforming to ASTM D2241, DR26. Fittings shall be ductile iron mechanical joint meeting the requirements of ANSI A21.11 except as amended by ANSI A21.51. Ductile iron shall be mechanical joint in accordance with ANSI/AWWA C151/A21.51.
 - d. Service pipe shall be six inches in diameter and shall be PVC pipe conforming to section 5.3.E.1.a. (i. and iii.) herein and shall be provided and installed by petitioner to each lot property line.
 - e. Lift stations shall be designed with a minimum of two pumps, each pump capable of providing the maximum flow under which the station is expected to operate. Lift stations shall be submersible type stations with a separate concrete valve box, wooden fencing, site light and water service with backflow preventer. All station piping shall be ductile iron flanged piping in accordance with ANSI/AWWA C115/A21.15, Class 53. The type of station shall be approved by the city engineer. Discharge force mains from new lift stations shall be extended by the petitioner to the wetwell of the lift station of the downstream (receiving) collection system.
 - f. The petitioner shall connect to the city sanitary sewer system at a point designated by the city's engineer with advice from the public works director and shall provide service to each lot. Detailed plans of all sanitary sewer system extensions, additions and connections shall be submitted in three copies to the planning department. The submitted plans shall be reviewed by the city engineer for conformance with the city's sanitary sewer system regulations and specifications stated herein. The city shall provide comments to the petitioner based on the city engineer's initial review and verification of the revisions submitted in response to the city engineer's comments. Additional reviews or recommendations by the city engineer, beyond the initial review of the plan and verification of the recommended revisions to the initial plan, shall be at the expense of the petitioner. The fee shall be based upon the charges submitted by the city engineer for said additional review(s).
2. Manholes shall be constructed at all intersections of sewer mains, at all changes in direction and shall not be more than 400 feet apart. The minimum depth shall be four feet.
 3. Exfiltration tests shall be made on all sections of sewer main laid. Leakage shall not exceed 250 gallons per inch of diameter per mile per 24 hours. Water level in upper manhole shall be a minimum of one foot above top of pipe. Other tests acceptable to the city's engineer may be used.
 4. Design criteria.
 - a. The design population shall be based upon four persons per residential lot or apartment unit.
 - b. Sewer collection lines shall be designed to carry a peak flow equal to three times the average flow of 100 gallons per capita per day, plus inflow and infiltration, with minimum collector size to be eight inches.
 - c. Lift stations shall be designed with a minimum of two pumps and each pump shall be capable of pumping the total peak flow of all influent lines.
 5. Calculation of sewerage requirements shall be in compliance with latest criteria as established by Louisiana Department of Health and Hospitals, but shall not be based on loading less than as shown in the following table:

Place	Loading	Daily Average Flow (Gallons Per Day)	Daily Average BOD (Pounds Per Day)	Design Basis
Homes in subdivisions		400	.68	per dwelling

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Hospitals (no resident personnel)	Note (c)	200	.51	per bed
Institutions (residents)	Note (c)	100	.25	per person
Municipalities		100	.17	per person
Mobile home parks		300	.51	per mobile home space
Motels	Note (b)	100	.12	per unit
Nursing and rest homes	Note (c)	100	.25	per patient
		100	.17	per resident employee
Office buildings		20	.051	per employee
Recreational vehicle dumping stations				Consult OHSEQ
Recreational vehicle parks and camps		125	.21	per trailer or tent space
Retail store		20	.034	per employee
Schools—Elementary	Note (c)	15	.038	per pupil
Schools—High and junior high	Note (c)	20	.051	per pupil
Service stations		1,000	1.7	first bay or pump island
		500	.05	additional bay or pump island
Apartments		250	.425	one bedroom

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		300	.52	two bedroom
		400	.68	three bedroom
Assembly	Note (b)	2	.0034	per seat
Bowling alleys (no food service)	Note (b)	75	.13	per lane
Churches (small)	Note (b)	5	.0085	per sanctuary
Churches (large with kitchen)	Note (c)	10	.012	per sanctuary
Country clubs		50	.085	per member
Dance halls	Note (b)	2	.0034	per person
Drive-in theatres		5	.0085	per car space
Factories (no showers)		20	.051	per employee
Factories (with showers)		35	.06	per employee
Food service operations				
Ordinary restaurant (not 24-hour)		35	.12	per seat
24-hours restaurant		50	.17	per seat
Banquet rooms		5	.017	per seat
Restaurant along freeway		100	.33	per seat
Curb service (drive-in)		50	.17	per car space
Bar, cocktail lounges, taverns				

(very little food service)		25	.084	per seat
(with regular food service)		35	.12	per seat
Fast food restaurants		40	.13	per seat
Hotel/motel food service		45	.15	per room
Shopping centers (no food service or laundries)		0.2	.00034	per sq. ft. floor space
Swimming pool (including employees)		10	.01	per swimmer
Vacation cottages		50	.12	per person
Youth and recreation camps	Note (c)	50	.12	per person

6. Acceptance test.

- a. All sanitary sewers shall be subject to infiltration, air, or exfiltration tests, or a combination thereof in accordance with the requirements of the city engineer. Expense of all tests shall be borne by the petitioner.
- b. When the city engineer elects the use of the infiltration test, the infiltration rate shall not exceed 250 gallons per inch of diameter per mile per 24 hours.

F. *Water supply.* Where an adequate public water facility is accessible the petitioner shall install adequate water facilities (including fire hydrants) in accordance with these regulations and subject to the specifications of the state and city authorities throughout the proposed development.

1. All water systems shall conform to the following requirements:

- a. Water pipe shall be one of the following:
 - i. Ductile iron Class 50, AWWA approved. Test shall be conducted to determine the necessity of using polyethylene wrap. Where test so indicates, polyethylene shall be used.
 - ii. Polyvinyl chloride (PVC), C 900 Class 150 AWWA approved and Class 200 SDR approved for four-inch and smaller.
 - iii. Service pipe shall be polybutylene and shall meet the stress rating of TB-2110 and shall have a pressure rating of 160 psi. Pipe shall be furnished in copper tubing sizes.
 - iv. Fittings for water mains larger than four inches will be ductile iron, AWWA approved. All fittings shall be mechanical joint with approved joint restraint and thrust blocks.
 - v. Valves shall be AWWA approved.
 - vi. Service connection fittings shall be approved by the city's public works director.

2. Fire protection.
 - a. Fire hydrants shall be required for all subdivisions.
 - b. Fire hydrants shall be located no more than 300 feet apart and shall be located at a street corner whenever possible, however hydrants will not be required to be located within 200 feet of another hydrant.
 - c. Fire hydrant locations shall be acceptable to the city fire chief.
 - d. Fire hydrants shall be located within three feet of the curb line of the fire lanes, streets, or private streets when installed along such access ways.
 - e. Fire hydrants shall be 5¼-inch three-way with backflow prevention, shall be AWWA approved and shall match existing hydrant hose threads.
 - f. Threads on fire hydrant outlets shall be American National Fire Hose Connection Screw Threads and shall be equipped with thread adapters when the local fire department thread is different.
 - g. Fire hydrants shall be supplied by not less than an eight-inch diameter main.
 - h. Dead-end mains shall not exceed 600 feet in length for main sizes under 12 inches in diameter.
 - i. The fire protection water supply system, including fire hydrants, shall be installed in service prior to placing combustible building materials for structures or combustible pretreated fabricated building assemblies on the project site or utilizing them in the construction of building structures. If phased construction is planned, coordinated installation of the fire protection water system is permitted.
 - j. Fire hydrants shall be marked in a uniform manner with a blue marker.
3. Water main shall be a minimum of eight inches in diameter, however larger size water mains may be required. Detailed plans of all water supply system extensions, additions and connections shall be submitted in three copies to the planning department. The submitted plans shall be reviewed by the city engineer for conformance with the city's water supply system regulations and specifications stated herein. The city shall provide comments to the petitioner based on the city engineer's initial review of the plan and verification of the revisions submitted in response to the city engineer's comments. Additional reviews or recommendations by the city engineer, beyond the initial review of the plan and verification of the recommended revisions to the initial plan, shall be at the expense of the petitioner. The fee shall be based upon the charges submitted by the city engineer for said additional review(s).
4. Water pipe shall be sterilized and shall receive approval from the Louisiana State Board of Health and Hospitals before connection to city water system.
5. Water main shall be tested for 150 psi for not less than four hours. Leakage shall not exceed ten gallons per inch of diameter per mile per day.

G. *Storm drainage.*

1. Stormwater Management Plan. A subdivision plat shall not be considered for preliminary or final approval until the petitioner has submitted and received approval of the stormwater management plan as defined in Section 5.2 of this ordinance.

2. Submittal Documents.

Submittal documents shall be prepared by or under the direct supervision of a Louisiana Registered Civil Engineer within the purview of the State of Louisiana licensing law provisions. Said documents shall be imprinted with their seal designating them as the professional of record. Submittal documents shall be submitted with each permit application and shall include the following:

- (a) Project Description. Brief summary of existing conditions and proposed stormwater management design.

- (b) Pre-developed Site and Stormwater Drainage Plan. A site assessment detailing the current drainage conditions on the property. This shall include:
- (1) Location and boundaries of all existing property lines, lot names, easements or servitudes, or other land divisions for the development site;
 - (2) Location and boundaries of all adjacent rights-of-way, streets, private roads, drainage rights-of-way, or other features;
 - (3) Existing drainage areas delineated with flow lines indicating direction of flow;
 - (4) All above ground and subsurface infrastructure and invert elevations, including but not limited to existing drain lines, culverts, catch basins, headwalls, manholes, and existing BMPs;
 - (5) Location of all existing roof and yard drains, downspouts, or other features and their connections to BMPs
 - (6) Existing topographic and any significant topographic features at a maximum of 1' elevation intervals. If the site is less than 2% slope, NAVD88 point elevations are required at a minimum of every 25' and at the property line.
 - (7) Soil conditions;
 - (8) All existing buildings, structures, land covers and site features, including but not limited to curb cuts, interior streets, driveways, parking and loading areas, landscaped areas, and lawns.
- (c) Proposed Site & Stormwater Drainage Plan. A detailed representation of the proposed drainage site design. This shall include:
- (1) Location and boundaries of all property lines, lot names, easements or servitudes, or other land divisions for the development site;
 - (2) Location and boundaries of all adjacent rights-of-way, streets, private roads, drainage rights-of-way, or other features;
 - (3) Proposed drainage areas delineated with flow lines indicating direction of flow;
 - (4) All proposed above ground and subsurface infrastructure and invert elevations, including but not limited to drain lines, culverts, catch basins, headwalls, manholes, and BMPs;
 - (5) Location of all proposed roof and yard drains, downspouts, or other features and their connections to BMPs
 - (6) Proposed topographic and any significant topographic features at a maximum of 1' elevation intervals. If the site is less than 2% slope, NAVD88 point elevations are required at a minimum of every 25' and at the property line.
 - (7) All proposed buildings, structures, land covers and site features, including but not limited to curb cuts, interior streets, driveways, parking and loading areas, landscaped areas, and lawns.
 - (8) Sections and details of all proposed BMPs showing depth, dimensions, detention volume, compositional layers, drainage media, overflows, connections into and out of all drainage related features.
- (d) Calculations. Calculations for pre- and post-development runoff rate. Calculations for runoff rates should use the methods called for in the latest version of the Louisiana Department of Design and Development (LA DOTD's) Hydraulics Manual. For rainfall depths, applicants should use

the latest data from the National Oceanographic and Atmospheric Administration (NOAA) or the DOTD hydraulics manual and select whichever has the higher rainfall rate.

(e) Landscape Plan. When plants, trees, or shrubs are utilized in BMP design.

(f) Operations & Maintenance Plan. Site-specific operations and maintenance schedule for each BMP including routine maintenance, frequency of inspections, indications of failure, corrective actions (repair and replacement), and a sample inspection report for the site.

(g) Enforcement of Regulations.

No Certificate of Occupancy may be issued for any development site until certification of stormwater management features has been obtained. Failure to implement the stormwater management plan is cause for the withholding of the Certificate of Occupancy. The applicant shall maintain all stormwater BMPs and associated infrastructure in perpetuity following construction. All landscape and stormwater management BMPs and associated infrastructure shall be maintained in conformance with the approved plan.

(h) Post-Construction Certification.

Prior to the issuance of a Certificate of Occupancy, the following shall occur to ensure compliance with the stormwater regulations:

(a) Submission of digital as-built plans showing the final design specifications for all stormwater management facilities and practices, the field location, size, depth of all measures, controls, and planted vegetation, and devices, as installed.

(b) A professional engineer licensed in Louisiana shall provide an affidavit, under seal, attesting the stormwater management measures have been installed in accordance with all approved plans and specifications, and in compliance with all other applicable standards.

2. General improvement requirements for sub-surface storm drains. In consideration of the acceptance of the improvements by the city and the assumption of the responsibility for maintaining the dedicated streets constructed therein, the owners of the subdivision shall cause to be designed and constructed, at no expense to the city, the following drainage and storm sewer improvements according to the specifications set forth in this ordinance.

a. *Drainage and storm sewer construction criteria.* The design of drainage systems for the interior portions of subdivisions or site or tract development and for the watershed areas surrounding the subdivision or site or tract development shall be in accordance with the current edition of the *Louisiana Department of Transportation and Development Hydraulics Manual*. The design of the interior drainage systems of the subdivision or site or tract development shall be based on a ten-year storm frequency. The selection of runoff coefficients shall be based on the anticipated nature of future development in the area and shall be subject to the approval of the city engineer and public works director.

b. Drainage design for new subdivisions or subdivisions of five acres or greater shall be required to include retention ponds or other innovative methods of retaining stormwater within the confines of the new subdivision. These retention ponds or other innovative method of retaining stormwater within the confines of the new subdivision shall be designed to meet the following criteria:

- i. Where downstream drainage systems are inadequate to accommodate the increase in the rate of runoff from the proposed development, the petitioner may propose to undertake such work or improvements, at no cost to the city, to make the downstream drainage system adequate to handle the anticipated flow resulting from the development of the property. The planning commission may deny any such proposal to improve downstream drainage if the commission determined that the nature or extent of the proposed work or improvements would detrimentally alter the character or condition of any downstream drainageways. The planning commission shall not approve any proposal to improve manmade drainageways until the proposal is first reviewed by the public works director and the planning commission is thereafter advised by the public works director, in writing, that he has no objection to the proposal. Absent such approval by the planning commission, the petitioner shall be required to retain the increase in storm drainage runoff on the site of the development until this water can be released at a storm drainage runoff rate which does not exceed the storm drainage runoff from the site prior to development. However, when the design storm exceeds a 24-hour 25-year storm frequency, the excess drainage runoff above the runoff created by the 24-hour 25-year frequency storm will be allowed to flow out of the new development.
 - c. *Criteria for subdivisions with curb and gutter streets/subsurface drainage.* All new subdivisions in the city, except those outlined in section 5.3.G.4., shall have roll over curb and gutter streets and subsurface drainage. In said subdivisions, the intervals for installation of curb drainage inlets shall be determined in accordance with the requirements of the current edition of the *Louisiana Department of Transportation and Development Hydraulics Manual*. Where these inlets connect to storm sewers, a catch basin shall be installed with the inlet. Storm drain inlets will be placed so that surface water is not carried across intersections or crosswalks. When calculations indicate that curb capacities are exceeded at a point, no further allowance shall be made for flow beyond that point and a basin shall be used to intercept flow at that point. Drainage plans submitted with the drainage report will show surface water drainage patterns for each and every lot and block and all design specifications for land development.
3. *Design standards for subsurface storm drainage.*
- a. Pipe used for subsurface storm drain shall be reinforced concrete pipe, corrugated steel, bituminous coated pipe or and approved plastic pipe, as specified herein and subject to the recommendations and approval of the city engineer.
 - i. Reinforced concrete pipe (RCP) or reinforced concrete arch pipe (RCAP) shall be in accordance with Louisiana Standard Specifications for Roads and Bridges (LSSRB), current edition.
 - ii. Bituminous coated corrugated steel pipe and pipe arch (BCCSP/BCCSPA) in accordance with Louisiana Standard Specifications for Roads and Bridges (LSSRB), current edition.
 - iii. Plastic pipe in accordance with Louisiana Standard Specifications for Roads and Bridges (LSSRB), current edition.
 - b. Exceptions.
 - i. BCCSP or BCCSPA is not allowed in storm drain systems - defined as lateral drain pipes under curb and gutter, and other applications that connect drainage structures and are not open ended;
 - ii. BCCSP/BCSPA is not allowed for use as a cross drain under concrete pavement;
 - iii. Plastic pipe is not allowed in open-ended applications. Plastic pipe used for side drains must be provided with an approved end treatment
4. *Optional open drainage construction and design.*
- i. Subdivision applications in RS-2 and RLL zoning districts have the option to request open drainage construction, which is subject to the approval of the planning commission.
 - ii. Drainage ditches shall be designed, whenever possible, with sloping earthen banks and earthen bottoms. Drainage ditches shall also be designed with shoulders of not less than four feet in

width. When it is determined by the planning commission upon the recommendation of the city engineer or public works director that a concrete-lined channel is required such concrete-lined channel shall have side slopes of a grade that is no steeper than one and one-half to one and shall be lined with reinforced concrete. The bottom shall be six inches thick, sides at least four inches thick, and a five-foot collar on each side shall be at least four inches thick. Construction details for footings, joints, etc., shall be in accordance with standards provided by the city engineer or public works director.

- iii. When a proposed open ditch, whether lined or unlined, must discharge into a major unlined canal, the petitioner shall be required to enclose the ditch, under the access strip of the major canal, in a metal pipe or concrete culvert. The pipe or culvert shall extend at least four feet into the canal beyond the side slope, and shall discharge into a concrete flume that extends a minimum of five feet into the bottom of the canal. Flume shall be constructed immediately after the pipe or conduit is installed.

H. *Permanent markers.*

- 1. Permanent monuments consisting of a metal pipe one-half-inch in diameter and two feet long shall be set at all points where the street lines intersect the exterior boundaries of the subdivision, and at angle points and points of curve in each street. The top of the monument shall be set flush with the finished grade. A land surveyor registered in the State of Louisiana shall do all survey work.
- 2. For all subdivisions of 20 lots or more, a permanent benchmark shall be accessibly placed, the elevation of which shall be based on mean sea level datum as determined by the U.S. Geological Survey and accurately noted on the subdivision plat. Such permanent benchmarks shall be concrete with a minimum dimension of four inches square, three feet long, with a flat top. The top of the monument shall have an indented cross to identify properly the location and shall be set flush with the finished grade.
- 3. All other lot corners shall be marked with an iron pipe, not less than one-half-inch in diameter and two feet long driven so as to be flush with the finished grade.

I. *Street signs.* Street signs of the size, shape, and height as approved by the public works director shall be placed at all intersections by the petitioner.

- 1. Traffic control signs. The petitioner shall install all traffic control signs and devices in a manner to conform with the latest Louisiana and National Standards for such signs and devices. The petitioner shall install all street signs before final plat approval.
- 2. Street name signs. Criteria for the location of street name sign and a typical design is provided by the city engineer. The location of street name signs is to be approved by city engineer. Installation of street name signs shall be covered in the required performance bond.

J. *Street lights and utility poles.*

- 1. Street lights. The city shall approve the location and number of streetlights to be installed in a proposed subdivision. Streetlights are required in all subdivisions developed consistent with the following criteria:
 - a. The proposed streetlight locations shall be designated on the preliminary site plan.
 - b. Streetlights shall be installed at all intersections and within all new major subdivisions.
 - c. Lighting levels should be designed to meet or exceed the average minimum illumination levels as recommended by the Illumination Engineering Society (IES) for the particular roadway type and subdivision type. Lighting designs should be such that glare is minimized and spacing is adequate to avoid dark areas.
 - d. Street light fixtures shall be full cutoff or otherwise designated as dark sky friendly design.
 - e. Street lighting shall be installed on poles of proper mounting height and strength to meet or exceed the transverse wind loading criteria based on the effective projected area of the particular pole and fixture selected. Street light wiring shall be installed underground from source to pole.

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- f. All cost associated with the construction and installation of streetlights in subdivisions shall be paid by the petitioner. Payment of the cost shall be a prerequisite to the approval and final acceptance of the subdivision by the city.
 - g. Upon installation and acceptance of any public streetlight at a location established in accordance with this section, the city shall assume the monthly power and maintenance cost charges set in accordance with the city's street lighting franchise agreement.
2. Poles.
- a. When located on street right-of-way, utility poles shall be located adjacent to the property line, but can be no further than six feet into the street right-of-way from the property line or beyond the property side of open drainage. In no case should poles be placed closer than six feet from the traveled surface of the roadway.
 - b. Pole placement may be adjusted with city approval for protected live oak trees, historical structures, necessary public access or other conflicts.
 - c. Street light pole placement is acceptable within the median of a boulevard, provided adequate space exists between the pole and the traveled surface of the roadway. Generally, the minimum acceptable median width to accommodate street light poles would be eight feet with six inches of curbing.
- K. *Model homes.* The planning commission may permit the construction of model homes in subdivisions prior to final approval of the subdivision upon the following conditions:
- 1. Units are to be held out to the public as "model homes."
 - 2. Only temporary utilities may be connected and occupancy permits are not to be issued until planning commission approval of the final plat.
 - 3. Building permits for the model homes are received after minor subdivision approval as per section 3.6.M. of this ordinance.
 - 4. The number of model homes shall limited to two units.
 - 5. Model homes will only be allowed in single-family detached subdivisions of at least ten acres.
- L. *Dedication of open space.* The petitioner shall dedicate open space and recreational land as set forth in section 5.1.E. of these regulations. The designated land shall be reviewed and approved as part of the preliminary plat.

(Ord. No. 2011-34, Exh. A, 12-8-2011)