

## APPENDIX D



**ORDINANCE NO. 509**  
**AN ORDINANCE TO REPEAL AND REPLACE ORDINANCE NO. 332.**

WHEREAS THE CITY OF SATSUMA DESIRES TO REPEAL AND REPLACE Ordinance No. 332 adopted and approved the 20<sup>th</sup> day of April, 1999. The new ordinance below is designed to update Ordinance 332 with the applicable state and federal regulations.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF SATSUMA, ALABAMA (the "City"), as follows:

ORDINANCE NO. 332 IS HEREBY REPEALED AND REPLACED with the following:

**Article I - General Provisions**

**Section A** This article is enacted to preserve, protect and promote the health, safety and welfare of the citizens of Satsuma, Alabama, through the reduction, control and prevention of the discharge of pollutants to the city municipal separate storm sewer system (MS4). It is the expressed intent of this document to provide for and promote compliance by the city with federal and state laws governing the discharge of pollutants from the MS4 and to provide for and promote compliance with an NPDES permit issued to the city for such discharge. The city does not intend for this article to conflict with any existing federal or state law.

**Section B** Definitions: For the purpose of this ordinance, the following terms shall have the meaning given herein:

**Agricultural** structure shall mean a building or a defined uncovered area which supports activities associated with agricultural product production.

**Best management practices** shall mean a wide range of management procedures, schedules of activities, prohibitions on practices and other management practices which have been demonstrated to effectively control the quality and/or quantity of storm water runoff and which are compatible with the planned land use.

**Development** shall generally mean any of the following actions undertaken by a public or private individual or entity:

- the division of a lot, tract or parcel of land into two or more lots, plots, ites, tracts, parcels or other divisions by plat or deed,
- any land change, including, without limitation, clearing, tree removal, grubbing, stripping, dredging, grading, excavating, transporting and filling of land.

**Develop land** shall mean to change the runoff characteristics of a parcel of land in conjunction with residential, commercial, industrial, or institutional construction or alteration.

**Hazardous substance or material** shall mean any substance or material defined as hazardous by the US Department of Transportation, the US Environmental Protection Agency, the Alabama Public Service Commission, the Alabama Department of Environmental Management or any other federal or state agency, including but not limited to the definitions and illustrations given in the Code of Federal Regulations, Title 40, Section 171.8, as may be amended from time to time.

**Person** shall mean an individual, partnership, association, syndicate, company, firm, trust, corporation, business, government entity, or any entity recognized by law.

**Illicit discharge** shall mean any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges for the municipal separate storm sewer) and discharges resulting from firefighting activities.

**Pollutant** shall mean dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical waste, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended), heat, wrecked or discarded equipment, yard clippings, leaves, rock, sand, cellar dirt, and industrial, domestic, and agricultural waste discharged into water.

**Storm water management** shall mean the collection, conveyance, storage, treatment and disposal of storm water runoff in a manner to minimize accelerated channel erosion, increased flood damage, and/or degradation of water quality and in a manner to enhance and ensure the public health, safety, and general welfare.

**Storm drain or storm sewer** shall mean a drain or sewer for conveying precipitation from a storm event.

**Storm water runoff** shall mean the direct response of a watershed to precipitation and includes the surface and subsurface runoff that enters a ditch, stream, storm drain or other concentrated flow during and following precipitation.

**Ten-year storm** shall mean a storm that is capable of producing rainfall expected to be equaled or exceeded on the average of one in 10 years. It may also be expressed as an exceeded probability with a 10 percent chance of being equaled or exceeded in any given year.

**Twenty-five year storm** shall mean a storm that is capable of producing rainfall expected to be equaled or exceeded on the average of one in 25 years. It may also be

expressed as an exceeded probability with a 4 percent chance of being equaled or exceeded in any given year.

**Two-year storm** shall mean a storm that is capable of producing rainfall expected to be equaled or exceeded on the average of one in 2 years. It may also be expressed as an exceeded probability with a 50 percent change of being equaled or exceeded in any given year.

**Water quality** shall mean those characteristics of storm water runoff that relate to the physical , chemical, biological, or radiological integrity of the water.

**Watershed** shall mean the drainage area contributing storm water runoff to a single point.

## **ARTICLE II - Illicit Discharges**

**Section A** It shall be unlawful for any person, firm, or corporation to allow water or any other liquid to run or flow continuously from a private premises in the City of Satsuma, Alabama, into, on, or upon the streets or into the storm drain system, excepting however, rain, sleet or snow falling on said private premise by an Act of God.

**Section B** It shall be unlawful for any person, firm, or corporation to discharge a pollutant to the City's storm water system that will have a deleterious impact on the environment. Any pollutant, associated with an industrial or commercial activity that is covered by the National Pollutant Discharge Elimination System as dictated by 40 CFR 122.26, can be discharged to the City storm water system only if the discharge is covered by an NPDES permit for storm water and the conditions of the permit are not violated.

**Section C** Where an illicit discharge is suspected by the City of originating from a facility or private property, it shall be the right of the City to designate employees, bearing proper credentials and identification, to enter facility grounds for the purpose of inspection, observation, measurement, sampling and testing in accordance with this ordinance.

**Section D** As part of ADEM NPDES Permit No. ALR040046, the City of Satsuma is required to develop a program to detect and eliminate illicit discharges and improper disposal in the storm sewer. Part III, Section B.3, provides the City of Satsuma with the authority to halt any discharges to a storm sewer system that is suspected by the City of being illicit. This paragraph provides for the inspection of facilities.

**Section E** All costs incurred by the City in associated with the ceasing of a potentially harmful discharge shall be reimbursed by the discharging facility.

### **ARTICLE III - Releases from Hazardous Materials Transportation Vehicles**

**Section A** The release or threatened release of hazardous materials into the environment in violation of this ordinance shall be considered a nuisance. It shall be unlawful for any person to permit, cause, or maintain any such nuisance within the City.

**Section B** All persons, companies, other legal entities and all motor vehicles engaged in transportation operations for commercial purposes within the legal jurisdiction confines of the City of Satsuma shall comply with all federal and state laws and regulations. These regulations shall include but are not limited to regulations enacted by the US Department of Transportation, Federal Highway Administration, the US Environmental Protection Agency, the Alabama Department of Environmental Management and the Alabama Public Service Commission, as fully set out and incorporated herein. Any violation of the above laws or regulations shall be a violation of this ordinance. The City police department is hereby authorized to stop and inspect any vehicles suspected of engaging in improper transportation operations which can potentially lead to a release in order to ensure compliance with this ordinance.

**Section C** It shall be unlawful for any person or other legal entity to transport, convey, store or offer for transportation any hazardous material as defined herein, unless such material is properly packaged, marked, labeled and accompanied by the proper documentation as required by Title 49 of the Code of Federal Regulation.

**Section D** Any person responsible for a release or threatened release of hazardous materials in the environmental which results in an emergency action shall be liable to the City for the City's recoverable expenses resulting from such action.

The staffs of each City department involved in an emergency action to stabilize a release shall keep a detailed record of its recoverable expenses resulting from the emergency action. Promptly after completion of the emergency action, the staff shall certify those expenses with the City Clerk. The recoverable expenses resulting from an emergency response to any spill or release of a hazardous substance, as defined herein, which poses a significant present threat or potential hazard to human life, property or environment, shall be a charge against the person or entity whose conduct or conduct of its employees, agents or contractors, caused or permitted the incident resulting in the emergency response. The City Clerk shall mail an invoice to the person responsible for the emergency action. The invoice shall

be payable within thirty days and if payment is not received within thirty days the City may initiate a civil action for the collection of the claim. This civil action shall be in addition to and not in lieu of any criminal prosecution or penalty.

#### **ARTICLE IV - Control of Runoff from Construction Sites.**

**Section A** No person shall develop any land without having provided for appropriate storm water management measures that control or manage runoff, in compliance with this ordinance. Exceptions include the following:

Any land change on property about which the owner of the property has submitted information to the Authority proving, to the satisfaction of the Authority, that such property does not Discharge to the MS4.

Any emergency activity that is immediately necessary for the protection of life, property, or natural resources. Immediately upon completion of emergency activity the responsible party shall install all control measures and initiate restoration/cleanup activities as required by this article.

Agriculture.

Silviculture.

Such minor Land Disturbing Activities as home gardens, landscaping, home repairs, home maintenance work, minor additions to houses, the construction, maintenance or repair of accessory structures and other related activities which result in minor Erosion.

Minor Land Disturbing Activities, such as minor Grading for driveways, yard areas and sidewalks, or individual connections for sewer services for single or two-family residences.

The construction, repair or rebuilding of railroad tracks.

Minor subsurface exploratory excavations under the direction of soils engineers, engineering geologists, or soil scientists.

The opening of individual burial sites in property which has been approved for such use by all necessary governmental authorities.

The construction of water wells or environmental monitoring wells.

Any and all Land Disturbing Activities conducted by entities under the jurisdiction and supervision of the PSC.

**Section B** (1). In developing plans for residential subdivisions, individual lots in a residential subdivision development shall not be considered to be separate land disturbing activities and shall not require development of a storm water management plan. Instead the residential subdivision development, as a whole, shall be considered to be a single land disturbing activity. Hydrologic parameters that reflect the ultimate subdivision development shall be used in all engineering calculations.

If individual lots or sections in a residential subdivision are being developed by different property owners, all land disturbing activities related to the residential subdivision shall be covered by the approved storm water management plan for the residential subdivision. Individual lot owners or developers shall comply with the plan as approved by the Satsuma Planning Commission.

Residential subdivisions which were approved prior to the effective date of these regulation are exempt from these requirements. Development of new phases of existing subdivisions which were not previously approved shall comply with the provisions of these regulations.

(2). For land disturbing activities involving residential development and commercial development which are less than two acres and which are not part of a larger common plan of development or sale, the person responsible for the land disturbing activity may be required, at the discretion of the Building Inspector, to submit a simplified storm water management plan. This plan shall require approval of the City Building Inspector but not professional certification. The City Building Inspector may also provide the plan to the City Planning Commission for information and review. This plan shall require, unless dictated differently by the City Building Inspector, the following:

- A narrative description of the storm water management facilities to be used;
- A general description of topographic and soil conditions of the development site;
- A general description of adjacent property and a description of existing structures, buildings, and other fixed improvements located on surrounding properties;
- A sketch plan to accompany the narrative which shall contain:
- A site location drawing of the proposed project, indicating the location of the proposed project in relation to roadways, jurisdictional boundaries, streams and rivers;
- The boundary lines of the site on which the work is to be performed;
- All areas within the site which will be included in the land disturbing activities shall be identified and the total disturbed area calculated;
- A topographic map of site;

- Anticipated starting and completion dates of the various stages of land disturbing activities and the expected date the final stabilization will be complete.
- The location of temporary and permanent vegetative and structural storm water management control measures.
- Storm water management plans shall contain certification by the persons responsible for the land disturbing activity that the land disturbing activity will be accomplished pursuant to the plan.
- Storm water management plans shall contain certification by the person responsible for the land disturbing activity that the City Building Inspector has the right to conduct on-site inspections.

Land disturbing activities disturbing more than two acres shall meet the requirements of Sections C-F.

**Section C** A storm water management plan shall be submitted to the City Building Inspector for review and approval.

Should any plan involve any storm water management facilities or land dedicated to public use, the same information shall also be submitted for review and approval to the department having jurisdiction over the land or other appropriate departments or agencies identified by the City Building Inspector for review and approval. This storm water management plan shall serve as the basis for all subsequent construction.

The City Building Inspector shall review the plan within five working days from the receipt of the plan. Within ten working days from the receipt of the storm water management plan, the City Building Inspector shall issue a decision approving, rejecting or conditionally approving the plan with modification. The City Building Inspector shall provide a copy of the plan to the City Planning Commission for information and review.

Storm water management plan requirements are found in Appendix A.

**Section D** A list of fees for plan review and other fees associated with this ordinance can be obtained from the City Building Inspector.

**Section E** Storm water management facilities may include both structural and nonstructural elements. Natural swales and other natural runoff conduits shall be retained where practicable.

Where additional storm water management facilities are required to satisfy the minimum control requirements, the following measures are examples of what may be used:

- Storm water detention structures (dry basins);
- Storm water retention structures (wet ponds);
- Facilities designed to encourage overland flow, slow velocities of flow, and flow through buffer zones; and
- Infiltration practices.

Where detention and retention structures are used, consolidation of these facilities into a limited number of large structures will be preferred over designs which utilize a large number of small structures.

Storm water management plans can be rejected by the City Building Inspector if they incorporate structures and facilities that will demand considerable maintenance, will be difficult to maintain, or utilize numerous small structures if other alternatives are physically possible.

The drainage system and all storm water management structures within the City will be designed to meet or exceed the current technical criteria and standards. This shall be so certified by the Design Engineer in the Storm Water Management Plan.

**Section F** Storm water management plans shall be prepared, certified, and stamped/sealed by a qualified registered Professional Engineer, Land Surveyor or Landscape Architect, using acceptable engineering standards and practices.

#### **Article V - Miscellaneous Provisions**

**Section A** Exceptions: The City Building Inspector may grant an exception from the requirements of this ordinance if there are exceptional circumstances applicable to the site such that strict adherence to the provisions of the ordinance will result in unnecessary hardship and not fulfill the intent of the ordinance.

A written request for an exception shall be required and shall state the specific exception sought and the reasons, with supporting data, for their granting. The request shall include descriptions, drawings, calculations and any other information that is necessary to evaluate the proposed variance.

The City Building Inspector will conduct a review of the request for an exception within a reasonable time.

**Section B** Any person aggrieved by a decision of the City Building Inspector (including any decision with reference to the granting or denial of a variance from the terms of this ordinance) may appeal by filing a written notice of appeal with the City Building Inspector within thirty calendar days of the issuance of the

decision by the City Building Inspector. The City Building Inspector may reverse his/her decision or send this notice to the City Council. A notice of appeal shall state the specific reasons why the decision of the City Building Inspector is alleged to be in error and the City Building Inspector shall prepare and send to the City Council and the Appellant, within 15 days of receipt of the notice of appeal, a written response to said notice of appeal.

All such appeals shall be heard by the City Council at a regularly scheduled meeting, not to exceed thirty days after receipt of the notice of appeal or at such other time as may be mutually agreed upon in writing by the Appellant and the City Council. The City Council will then render a decision within fifteen days after the appeal has been heard.

**Section C** Penalties. Upon determination that a violation of this ordinance has occurred the City shall provide the violator written notice of the violation and the time in which to correct the deficiencies.

Any person violating this ordinance or any part thereof shall be, upon conviction, fined not more than 500 hundred dollars or imprisoned not more than thirty days for each offense. Each separate interval of 24 hours, or every day, that such violations continue, are committed or exist, shall constitute a new and separate offense and shall be punished, as aforesaid, for each separate period of violation.

**Section D** Whenever the provision of this ordinance imposes more restrictive standards than are required in or under any other ordinance, the regulations herein contained shall prevail. Whenever the provisions of any other ordinance require more strict standards than are required herein, the requirement of such shall prevail.

**Section E** If any section, sentence, clause, or phrase of this ordinance is for any reason held to be invalid or unconstitutional by declaration of any court of competent jurisdiction, such declaration shall have no effect on the validity of remaining portions of this ordinance. The City Council hereby declares that it would have adopted this ordinance and each section, sentence, clause, or phrase thereof irrespective of the fact that one or more articles, sections, sentences, clauses, or phrases be declared invalid or unconstitutional.

**Section F** This ordinance may be amended in the manner as prescribed by City procedure for ordinance amendment.

**Section G** Neither the approval of a plan under the provisions of this ordinance nor the compliance with the provisions of this ordinance shall relieve any person from the responsibility for damage to any person or property otherwise

imposed by law nor shall it impose any liability upon the City for damage to any person or property.

**ADOPTED THIS \_\_\_\_ day of \_\_\_\_\_, 2014.**

\_\_\_\_\_  
**Mayor**

**Authenticated and Attested:**

\_\_\_\_\_  
**CITY CLERK**

## APPENDIX A

### PLAN REQUIREMENTS

Storm water management plans shall include as a minimum the following:

1. A vicinity map indicating a north arrow, scale, boundary lines of the site, and other information necessary to locate the development site.
2. The existing and proposed topography (usually 2 feet if not over five percent) of the development site except for individual lot grading plans in single family subdivisions.
3. Physical improvements on the site, including present development and proposed development.
4. Location, dimensions, elevations, and characteristics of all storm water management facilities.
  - a. The responsible Design Engineer shall not present for approval any plat of a subdivision or site plan which does not make adequate provision for storm or flood water runoff channels or basins. The storm water drainage system shall be separate and independent of any sanitary sewer system. A copy of design computations sealed by a registered engineer shall be submitted along with plans. Inlets shall be provided so that surface water is not carried across any intersection, nor for a distance of more than 600 feet in the gutter. When calculations indicate that curb capacities are exceeded at a point, catch basins shall be used to intercept flow at that point.
  - b. Any spring or surface water that may exist either previously to or as a result of the subdivision will be required to carry away such water by pipe or open concrete paved ditch. Such drainage facilities may be located in the road right-of-way where feasible, or in perpetual unobstructed easements of appropriate width, and shall be constructed in accordance with the Alabama Department of Transportation Standard Specifications.
  - c. Where a public storm sewer is accessible, the applicant will not be required to install storm sewer facilities, or, if no outlets are within a reasonable distance, adequate provision shall be made for the disposal of storm waters, subject to the specifications and calculations submitted by the Design Engineer.

If a connection to a public storm sewer will be provided eventually, as a result of phased construction, the developer shall make arrangements for future storm water disposal by a storm sewer system at the time the plat receives final approval.

Provision for such connection shall be incorporated by inclusion in the performance surety required for the subdivision plat.

5. All areas within the site which will be included in the land disturbing activities shall be identified and the total disturbed area calculated.
6. The location of temporary and permanent vegetative and structural storm water management control measures.
7. An anticipated starting and completion date of the various stages of land disturbing activities and the expected date the final stabilization will be completed.
8. A determination that no occupied first floor elevation of any structure is below the 100-year plus one foot flood elevation.
9. At the discretion of the City Building Inspector, for all portions of the drainage system which are expected to carry between 50 and 150 cfs for the 100-year storm, the 100-year plus one foot flood elevation analysis shall be required. To require the 100-year plus one foot flood elevation analysis, the City Building Inspector should determine that one of the following conditions may exist:
  - a. The estimated runoff would create a hazard for adjacent property or residents; Or
  - b. The flood limits would be of such magnitude that adjacent residents should be informed of these limits.
10. For all portions of the drainage system which are expected to carry 150 cfs or more for the 100-year storm, the 100-year plus one foot flood elevation analysis shall be done and flood limits shall be shown on the storm water management plans.
11. Storm water management plans shall include designation of all easements needed for inspection and maintenance of the drainage system and storm water management facilities. As a minimum, easements shall have the following characteristics.
  - a. Provide adequate access to all portions of the drainage system and structures.
  - b. Provide sufficient land area, as approved by the City Building Inspector, for maintenance equipment and personnel to adequately and efficiently maintain the system with a minimum of ten (10) feet along both sides of all drainage ways, streams, channels, etc., and twenty-five (25) feet around the perimeter of all detention and retention facilities, or sufficient land area for equipment access for maintenance of all storm water management facilities. This distance shall be measured from the top of the bank or toe of the facility, whichever is applicable.

- c. Restriction on easements shall include prohibiting all fences and structures which would interfere with access to the easement areas and/or the maintenance function of the drainage system.
- d. Where a subdivision or development of land is traversed by a watercourse, drainage way, channel, or stream, there shall be provided a storm water easement or drainage right-of-way conforming substantially to the lines of such water course, and of such width and construction or both as will be adequate for the purpose. For the smaller streams, the plat shall also provide for channel improvement to enable them to carry all reasonable floods within banks. The floor elevations of houses or buildings shall be high enough to be above the regulatory flood. The floodway easement shall be wide enough to provide for future enlargement of the stream channel as adjacent areas become more highly developed and runoff rates are increased.
- e. Where topography or other conditions are such as to make impractical the inclusion of drainage facilities within road rights-of-way, perpetual unobstructed easements at least twenty (20) feet in width for such drainage facilities shall be provided across property outside the road lines and with satisfactory access to the road. Easements shall be indicated on the record plat. Drainage easements shall be carried from the road to the natural watercourse or to other drainage facilities.

The applicant may be required to dedicate, either in fee or by drainage or conservation easement, land on both sides of existing watercourses to a distance that is adequate to discharge flood waters without cumulatively increasing the water surface elevation more than one foot.

Low-lying lands along watercourses subject to flooding or overflowing during storm periods, whether or not included in areas for dedication, shall be preserved and retained in their natural state as drainage ways, except where improvements are warranted as may be deemed necessary by the Design Engineer.

12. To improve the aesthetic aspects of the drainage system, a landscape plan for all portions of the drainage system shall be part of the storm water management plan. This landscape plan shall address the following:
- a. Tree saving and planting plan;
  - b. Types of vegetation that will be used for stream bank stabilization, erosion control, sediment control, aesthetics and water quality improvement; and
  - c. Any special requirements related to the landscaping of the drainage system and efforts necessary to preserve the natural aspects of the drainage system.

13. To improve the water quality aspects of the drainage system, the storm water management plan shall include best management practices to control the water quality of the runoff during the land disturbing activities and during the life of the development. This includes erosion and sediment control procedures described in the Erosion and Sedimentation Control section of this Appendix.
14. The storm water management plan shall include all engineering calculations needed to design the system and associated structures including pre- and post-development velocities, peak rates or discharge, and inflow and outflow hydrographs of storm water runoff at all existing and proposed points of discharge from the site.
15. Description of site conditions around points of all surface water discharge including vegetation and method of flow conveyance from the land disturbing activity.
16. Construction and design details for structural controls.
17. The expected timing of flood peaks through the downstream drainage system shall be assessed when planning the use of detention facilities.
18. In determining downstream effects from storm water management and the development, hydrologic-hydraulic engineering studies shall extend downstream to a point where the proposed development represents less than ten (10) percent of the total watershed.
19. All storm water management facilities and all major portions of the conveyance system through the proposed development (i.e., channels, culverts) shall be analyzed, using the design and 100-year storms, for design conditions and operating conditions which can reasonably be expected during the life of the facility. The results of the analysis shall be included in the hydrologic-hydraulic study.
20. A culvert, pipe or other drainage facility shall, in each case, be large enough to accommodate potential developed property runoff from its entire upstream drainage area, whether inside or outside the subdivision. The Design Engineer will review the necessary size of the facility, based on the provisions of the construction standards and specifications.
21. If the storm water management plan and/or design report indicates that there may be a drainage or flooding problem at the exit of the proposed development or at any location between the exit point and the 10 percent downstream point, the City Building Inspector may require:
  - a. Water surface profiles plotted for the conditions of pre- and post-development for the 10-year design storm;

- b. Water surface profiles plotted for the conditions of pre- and post-development for the 100-year design storm;
- c. Elevations of all structures potentially damaged by 10- and/or 100-year flows.

These drainage studies, together with such other studies as shall be appropriate, shall serve as a guide to needed improvements. Where it is anticipated that the additional runoff incident to the development will overload an existing downstream drainage facility, approval of the development of said potential condition in such sum as the Design Engineer shall determine. No development shall be approved unless adequate drainage will be provided to the natural drainage watercourse or an existing facility.

22. Any areas subject to periodic flooding caused by poor drainage facilities will not be accepted unless the developer or subdivider makes necessary provisions to eliminate such flooding in conformity with the National Flood Insurance program. Fill may not be used to raise land in areas subject to flood and/or excessive erosion, unless the fill proposed does not restrict the natural flow of water, advance erosion, and unduly increase flood heights.

23. All storm water management plans submitted for approval shall contain certification by the person responsible for the land disturbing activity that the land disturbing activity will be accomplished pursuant to the approved plan and that responsible personnel will be assigned to the project.

- a. A complete drainage plan and contour map showing the pipe sizes, their locations and the areas to be drained, shall be submitted along with the profile grades and typical roadway section for approval.
- b. All existing drainage structures shall also be shown.
- c. All off project drainage, draining onto the subdivision, shall be shown on contour maps and/or construction plans showing the areas in acres that the subdivision will have to accommodate.
- d. On any single drainage structure requiring 20 square feet or more of end area, a special design drawing will be required for approval. All roadway cross drain pipes shall be reinforced concrete and have a minimum size of 18 inches. Only pipe that meets specifications equaling Alabama State Highway Department Specifications will be acceptable.
- e. No unacceptable pipe shall be used.

- f. Where the subdivider has open ditches, a maximum of 3 to 1 front slopes and flat bottom ditch is required; the width of the ditch shall be determined by the required flows and the existing conditions and as determined by the Design Engineer. V-bottom ditches or other special designs may be permitted in special cases if they are concrete slope paved.
  - g. This provision applies to all developers or subdividers.
24. All storm water management plans shall contain certification, by the person responsible for the land disturbing activity, of the right of the City Building Inspector to conduct on-site inspections.
  25. The storm water management plan shall not be considered approved without the inclusion of a signature and date on the plans by the City Building Inspector. The signature on the plans is solely an acknowledgment of satisfactory compliance with the requirements of these regulations. The signature does not constitute a representation or warranty to the applicant or any other person concerning the safety, appropriateness or effectiveness of any provision, or omission from the storm water management plan.
  26. Approved storm water management plans remain valid for five (5) years from the date of an approval. Extensions or renewals of the plan approval may be granted by the City Building Inspector upon written request by the person responsible for the land disturbing activity.
  27. When the project has been completed, a letter shall be submitted by the Design Engineer to the City of Satsuma certifying that all drainage facilities have been installed in accordance with approved plans. Inspection of facilities shall be conducted by the Design Engineer and certified to the City Building Inspector.
  28. All plans and specifications submitted for review and/or approval shall be prepared by, or under the direct supervision of a registered professional engineer, licensed in the State of Alabama, and shall meet the minimum standards and requirements of the City, and other applicable authorities.

Each of the plan, profile and special drawing sheets for a project shall bear a legible stamp of the Professional Engineer in charge. If the name or license number is not clear, the signature and number shall be added. It is imperative that the professional design engineer be qualified in the area of drainage per the State of Alabama registration.

29. The developer and the consulting engineer are encouraged to contact the City for a pre-design conference at the conceptual stage of the project. Such conference would be mutually beneficial to outline the complexity and scope of design, applicability of

criteria and elimination of possible items of conflict during the review process. Subsequent conferences, during the preparation of plans may be arranged by the consulting engineer or the developer to obtain preliminary, informal decision on items in need of clarification.

30. 30. In order to facilitate review of plans, all projects shall be submitted with a letter or transmittal which shall include the name of the project, name and address of the owner or developer, name, address and telephone number of the engineer, and clarification as to the purpose of submittal.

### **PLAN HYDROLOGIC CRITERIA**

The hydrologic criteria to be used for the storm water management plans shall be as follows:

1. 25-year design storm for all cross-drain culverts and drainage designs.
2. 10-year design storm for all interior culverts and drainage designs.
3. 2- and 10-year design storms for all detention and retention basins using procedures approved by the City Building Inspector.
4. All drainage designs shall be checked using the 100-year storm for analysis of local flooding, and possible flood hazards to adjacent structures and/or property.
5. All hydrologic analysis will be based on land use conditions.
6. For the design of storage facilities, a secondary outlet device or emergency spillway shall be provided to discharge the excess runoff in such a way that no danger of loss of lift or facility failure is created. The size of the outlet device or emergency spillway shall be designed to pass the 100-year storm as a minimum requirement.

### **PLAN WATER QUALITY CRITERIA**

Following are the criteria related to using storm water management facilities for water quality purposes.

#### Ponds, Lakes and Reservoirs

1. When the land disturbing activity consists of the construction of a pond, lake or reservoir which is singly built and not part of a permitted land disturbing activity, the following procedures will apply:

- a. A storm water management plan will not be required if the pond, lake or reservoir has received prior State approval. Best management practices should be used to minimize the impact of erosion and sediment.
  - b. A storm water management plan will be required for the construction of all ponds, lakes or reservoirs not meeting the conditions in (a) above that otherwise meet the size requirements for storm water management plan approval.
2. When ponds are used for water quality protection, the ponds shall be designed as both quantity and quality control structures. Sediment storage volume shall be calculated considering the clean out and maintenance schedules specified by the designer during the land disturbing activity. Sediment storage volumes may be predicted by the Universal Soil Loss Equation or methods acceptable to the City Engineer.
3. Storm water runoff and drainage to a single outlet from land disturbing activities which disturb ten (10) acres or more shall be controlled during the land disturbing activity by the sediment basin where sufficient space and other factors allow these controls to be used until the final inspection. The sediment basin shall be designed and constructed to accommodate the anticipated sediment load from the land disturbing activity and meet a removal efficiency of 80 percent suspended solids or 0.5 ML/L peak settleable solids concentration, whichever is less. The outfall device or system design shall take into account the total drainage area flowing through the disturbed area draining to the basin.
4. Other practices may be acceptable to the City Building Inspector if they achieve an equivalent removal efficiency of 80 percent for suspended solids or 0.5 ML/L peak settleable solids concentration, whichever is less. The efficiency shall be calculated for disturbed conditions for the 10-year, 24-hour design storm event.
5. Permanent water quality ponds having a permanent pool shall be designed to store and release the first 1/2-inch of runoff from the site over a 24-hour period. The storage volume shall be designed to accommodate, at least, 1/2-inch of runoff from the entire site.
6. Permanent water quality ponds, not having a permanent pool, shall be designed to release the first inch of runoff from the site over a 24-hour period.
7. The use of measures other than ponds to achieve water quality improvement are recommended on sites containing less than ten (10) disturbed areas.

#### Infiltration Practices

1. Permanent infiltration practices, when used, shall be designed to accept, at a minimum, the first inch of runoff from all impervious areas.

2. Areas draining to infiltration practices must be established and vegetative filters established prior to runoff entering the system. Infiltration practices shall not be used if a suspended solids filter system does not accompany the practice. If vegetation is the intended filter, there shall be a least a 20-foot width of vegetative filter prior to storm water runoff entering the infiltration practice.
3. The bottom of the infiltration practice shall be at least 2.0 feet above the seasonal high water table, whether perched or regional, determined by direct piezometer measurements which can be demonstrated to be representative of the maximum height of the water table on an annual basis during years of normal precipitation, or by the depth in the soil at which mottling first occurs.
4. The infiltration practice shall be designed to completely drain water within 72 hours.
5. Soils must have adequate permeability to allow water to infiltrate. Infiltration practices are limited to soils having an infiltration rate of at least 0.30 inches per hour. Initial consideration will be based on a review of the appropriate soil survey, and the survey may serve as a basis for rejection. On-site soil borings and textural classifications must be accomplished to verify the actual site and seasonal high water table conditions when infiltration is to be utilized.
6. Infiltration practices greater than three feet deep shall be located at least 10 feet from subsurface walls.
7. Infiltration practices designed to handle runoff from impervious parking areas shall be a minimum of 150 feet from any public or private water supply well.
8. The design of infiltration practice shall incorporate an overflow system with measures to provide a non-erosive velocity of flow along its length and at the outfall.
9. The slope of the bottom of the infiltration practice shall not exceed five percent. Also, the practice shall not be installed in fill material, as piping along the fill/natural ground interface may cause slope failure.
10. An infiltration practice shall not be installed on or atop a slope whose natural angle of incline exceeds 20 percent.
11. Clean outs will be provided, at a minimum, every 100 feet along the infiltration practice to allow for access and maintenance.

## **TRANSPORTATION CONSIDERATIONS**

1. Culverts under arterial roadways shall normally accommodate a minimum of 25-year frequency design storm. Conditions may dictate that 100-year design storms must be accommodated.

Culverts under all other roadways shall normally accommodate a minimum of a 25-year storm.

Design storm criteria will be used by the design engineer based on the site specific conditions that warrant life and property protection.

All types of culverts within the rights-of-way of public roads must be approved and shall conform to Alabama Department of Transportation Standards.

2. Bridges shall accommodate a minimum of a 50-year frequency design storm. Conditions may dictate that of a 100-year frequency design storm.
3. Open channels and ditches shall be designed so as not to create a traffic hazard or create hazardous erosion.

The minimum flow line slope for paved ditches shall be 0.3% and shall be a maximum of 1% for unpaved ditches.

The recommended maximum flow velocities shall be in accordance with the ranges recommended by the latest edition of the Alabama Department of Transportation Hydraulics Manual.

Clean out accesses shall be provided at least every 300 feet for continuous pipes of 24 inches in diameter or less and at least every 400 feet for larger continuous pipes, if required. Clean out accesses are also required at each angle point and at each change in grade.

## **EROSION AND SEDIMENTATION CONTROL**

The following provisions impose requirements on persons engaged in land disturbing activities which require planning and implementation of effective sedimentation controls for subdivision development and all other land disturbing projects.

1. Plan Requirement. An erosion and sediment control plan shall be required in all areas of Satsuma corporate limits and planning jurisdiction where appropriate. The approval of such plan shall be required and approved by the City Building Inspections department prior to the commencement of any land disturbing activity.

2. Plan Submission and Review. Whenever there is an area to be disturbed a copy of the plan shall be filed with the City Building Inspections department a minimum of 30 days prior to beginning any land disturbing activity. A copy of the plans shall also be on file at the job site.

If the City determines, either upon review of such plan or on inspection of the job site, that a significant risk of off-site sedimentation or erosion exists, a revised plan will be prepared. Pending the preparation of the revised plan, the work shall be suspended or continued under conditions outlined by the City Building Inspections department.

3. Plan Content. Erosion and sediment control plans shall contain architectural and engineering drawings, maps, assumptions, calculations, and narrative statements as needed to describe accurately the proposed development of the site and the measures planned to meet the Basic Control Objectives. Plan content may vary to meet the needs of the specific site conditions.

4. Protection of Property. Persons engaged in land-disturbing activities shall take all reasonable measures to protect all public and private property, including roadways, from damage by such activities.

5. Identify Critical Areas. On-site areas which are subject to severe erosion, and off-site areas which are especially vulnerable to damage from erosion and/or sedimentation, are to be identified and receive special attention.

6. Limit Exposed Areas. All land-disturbing activities should be planned and conducted to minimize the size of the area to be exposed at any one time.

7. Limit Time of Exposure. All land-disturbing activities should be planned and conducted to limit exposure to the shortest time.

8. Control Surface Water. Surface water runoff originating updrift of exposed areas should be controlled to reduce erosion and sediment loss during the period of exposure.

9. Control Sedimentation. All land-disturbing activities should be planned and conducted so as to minimize off-site sediment damage.

10. Manage Storm Water Runoff. When the increase in the peak rates and velocity of storm water runoff resulting from a land-disturbing activity is sufficient to cause damaging accelerated erosion of the receiving ditch or channel stream, plans are to include measures to control both the velocity and rate of increase so as to minimize accelerated erosion and increased sediment deposition in the ditch or stream channel.

## **STANDARDS**

1. Mandatory Standards. No land-disturbing activity subject to these provisions and guidelines shall be undertaken except in accordance with the following requirements:

No land-disturbing activity shall be permitted in proximity to a lake, natural watercourse, or adjacent property where applicable unless a buffer zone is provided along the boundary of sufficient width to confine visible siltation and/or prevent erosion, provided that the land-disturbing activity is not in connection with the construction of facilities to be located on, over, or under a lake, natural watercourse, or adjacent property.

The angle for graded slopes and fills shall be no greater than the angle which can be retained by vegetative cover or other adequate erosion control devices or structures. In any event, slopes left exposed will, within 30 working days of completion of final grading, be planted or otherwise provided with ground cover, devices or structures sufficient to restrain erosion.

Whenever land-disturbing activity is undertaken on a tract comprising more than one acre, if more than one contiguous acre is uncovered, a ground cover sufficient to restrain erosion must be planted or otherwise provided within 30 working days on that portion of the tract upon which further active construction is not being undertaken, provided that this activity shall not apply to cleared land forming the basin of a reservoir later to be inundated.

2. Design and Performance Standards. Erosion and sediment control measures, structures and devices shall be so planned, designed, and constructed as to provide control from the calculated peak rates of runoff from a ten-year frequency storm. Runoff rates may be calculated using the procedures in the USDA Soil Conservation Practices," or other acceptable calculation procedures. Runoff computations shall be based on rainfall data published by the National Weather Service for the area.

3. Other Requirements. Provision shall be made for the permanent protection of off-site stream banks and channels from the erosive effects of increased velocity and volume of storm water runoff resulting from certain land-disturbing activities.

A combination of storage and controlled release of storm water runoff shall be required for all highway construction; commercial, industrial, educational, institutional developments of one acre or more; and for all residential developments unless exempted by the City.

Detention, storage and controlled release will not be required in those instances where the person planning to conduct the activity can demonstrate that the storm water release will not cause an increase in accelerated erosion or sedimentation in the receiving ditch, stream channel, overload downstream drainage ways, or other drainage facility, taking into consideration any anticipated development of the watershed in question.

4. Borrow and Waste Areas. When the person conducting the land-disturbing activity is also the person conducting the borrow or waste disposal activity, areas from which borrow is obtained shall be considered as part of the land-disturbing activity where the borrow material is being used or from which the waste material originated. When the

person conducting the land-disturbing activity is not the person obtaining the borrow and/or disposing of the waste, these areas shall be considered a separate land-disturbing activity.

5. Access and Haul Roads. Temporary access and haul roads, other than public roads, constructed or used in connection with any land-disturbing activity shall be considered a part of such activity.

6. Operations in Lakes or Natural Watercourses. Land-disturbing activity in connection with construction, in, on, over, or under a lake or natural watercourse shall be planned and conducted in such a manner as to minimize the extent and duration of disturbance of the stream channel. The relocation of a stream, where relocation is an essential part of the proposed activity, shall be planned and executed so as to minimize changes in the stream flow characteristics, except when justification for significant alteration to flow characteristic is provided.

7. Responsibility for Maintenance. The person engaged in or conducting the land-disturbing activity shall be responsible for maintaining all temporary and permanent erosion and sediment control measures and facilities during the development of a site. The responsibility for maintaining all permanent erosion and sediment control measures and facilities, after site development is completed, shall lie with the landowner, except for public drainage facilities.

8. Guidelines for Erosion and Sediment Control Practices. Persons engaged in planning, designing, installing and maintaining erosion and sediment control measures may use generally accepted references on the subject following standard engineering and/or agricultural practices. All plans will be subject to review by the Building Inspector.

9. Additional Measures. Whenever the Building Inspector determines that significant erosion or sedimentation is occurring as a result of a land-disturbing activity, despite application and maintenance of protective practices, the person conducting the land-disturbing activity, or the person responsible for maintenance will be required to take additional protective action.

## **DETENTION FACILITIES**

1. Detention facilities. Detention requirements are directly related to permitted land use where it exists. The permitted densities and minimum lot areas are important factors in the anticipated runoff. Projects of small acreage may be required to provide detention if conditions in the receiving system are inadequate, or harmful effects can be anticipated if detention is not implemented.

2. Method of Evaluation. Differential runoff evaluation consists of determination of rates of runoff before and after development, determination of required volume of detention and verification of adequacy of discharge and control structures. Design should be based on a minimum of a 25-year storm, or a 24-hour event. This shall be based on sound engineering criteria, and computations shall be submitted to the City for review.

**Method of Detention-** The following conditions and limitations should be observed in the selection and use of method of detention.

3. General Location. Detention facilities shall be located within the parcel limits of the project under consideration.

No detention or ponding will be permitted within public road rights-of-way.

Location of detention facilities immediately upstream or downstream of the project, will be considered by special request if proper documentation is submitted with reference to practicality, feasibility and proof of ownership or right-of-use of the area proposed.

4. Common Ground Projects. It is preferred that detention facilities be located in common ground. Projects developed under these procedures shall establish (in the recorded plat) maintenance and access easements for the detention facilities and include provisions for maintenance in the Trust Indentures.

The entire reservoir area of the open channel shall be seeded, fertilized and mulched, sodded, paved, or lined prior to final plat approval by the City of Satsuma.

The hydraulic elevations resulting from channel detention shall not adversely affect adjoining properties.

5. Permanent Lakes. Permanent lakes with fluctuating volume controls may be used as detention areas provided that the limits of maximum ponding elevations are no closer than thirty (30) feet horizontally from any building and less than two (2) feet below the lowest sill elevation of any building.

Maximum side slopes for the fluctuating area of permanent lakes shall be one (1) foot vertical to three (3) feet horizontal (3:1) unless proper provisions are included for safety, stability and ease of maintenance.

Maximum fluctuation from permanent pool elevation to maximum ponding elevation shall be three (3) feet, with a greater depth subject to approval.

Special consideration is suggested to safety and accessibility for small children in design of permanent lakes in residential areas. Fencing may be required.

Viability of the permanent impoundment pool no greater than one-tenth the size of the tributary drainage area. It is suggested that the maximum depth of twenty-five percent (25%) of the permanent pool area be no greater than six (6) feet. Allowances for silting under denuded soil conditions (during construction) for a period no less than one year is also recommended.

The entire fluctuating area of the permanent reservoir shall be seeded, fertilized and mulched, sodded or paved prior to release of surety if required by the City. Any area susceptible to or designed as overflow by higher design intensity rainfall, as indicated previously, shall be sodded or paved.

6. Parking Lots. Detention is permitted in parking lots to maximum depth of eight (8) inches. In no case should the maximum limits of ponding be designed closer than ten (10) feet from a building unless water proofing of the building and pedestrian accessibility is properly documented.

The minimum freeboard from the maximum ponding elevation to the lowest sill elevation shall be one (1) foot.

7. Other Methods. Other methods of detention (such as seepage pits, French drains, etc.) are discouraged. If other methods are proposed, proper documentation of soils data, percolation, geological features, etc., will be needed for review and consideration.

8. Verification of Adequacy. Analysis of all elements of design is always performed by the registered professional engineer. The following outline is provided to ascertain that certain critical elements of design are in workable compliance with the aims of design:

- a. Volume of retention for the total project
- b. Tributary (Q) peak runoff to basin
- c. Balanced maximum outflow rate from the low-flow structure
- d. Ratios of inflow to outflow
- e. Sizing of the overflow facilities
- f. Stability of dikes
- g. Safety features
- h. Maintenance features

For projects up to 200 acres, routing calculations shall be submitted in legible tabulated form. Proof of adequacy of volume of retention and sizing computations for low-flow-structures shall also be submitted. Features of stability and safety may also need to be documented if the scope of the project requires special attention in this area of design.

Projects over 200 acres in area shall provide documented verification of adequacy according to scope and complexity of design.

9. Control Structures. Detention facilities shall be provided with obvious and effective control structures. Plan view and sections of the structure with adequate detail shall be included in plans.

Sizing the low-flow pipe shall be by inlet control or hydraulic gradient requirements.

Low-flow pipes shall not be smaller than eight (8) inches in diameter to minimize maintenance and operating problems, except in parking lot and roof retention where minimum size of opening shall be designed specifically for each condition.

The overflow opening or spillway shall be designed to accept the total peak runoff of the improved tributary area.

Proper engineering judgment shall be exercised in analysis of secondary routing of discharge of greater intensity than the basic design storm in order to avoid economic losses or damage downstream. Review with twenty-five (25) and fifty (50) year frequency or greater is recommended.

10. Discharge Systems. Sizing of the system below the control structure shall be for the total improved peak runoff tributary to the structure with no allowance for detention.

When existing downstream pipe sizing, outside the developers control jurisdiction, is inadequate, and evaluation for under sizing of pipes may be undertaken by the City upon receipt of written request from the engineer specifying the run or runs desired to be undersized.

Requests for under sizing shall be accompanied by the plans and profiles of the entire undersized system downstream if less than five hundred (500) feet in length or a minimum of five hundred (500) feet.

When hydraulic gradients of the proposed undersize system affect the performance or capacity of structures maintained by the City, no under sizing will be allowed.

11. Easements. Two types of easements shall be provided in plans for detention facilities.

12. Maintenance Easement. All detention reservoirs with the exception of parking lot and roof detention shall be enclosed by a maintenance easement. The limits of the easement shall extend ten (10) feet beyond the top elevation of the reservoir. When a detention reservoir is adjacent to a public right-of-way, the limits of the easement shall

extend twenty-five (25) feet beyond the elevation of the reservoir on the public right-of-way side.

13. Drainage Easement. A minimum fifteen (15)-foot wide drainage easement shall be provided within the reservoir area connecting the tributary pipes and the discharge system along the best possible routing of a piping system for possible future elimination of detention.

14. Maintenance. Detention facilities are to be built in conjunction with the storm sewer installation and/or grading. Since these facilities are intended to control increased runoff; they must be partially or fully operational soon after the clearing of the vegetation. Silt and debris connected with early construction shall be removed periodically from the detention area and control structure in order to maintain close to full storage capacity.

The responsibility for maintenance of the detention facilities in subdivision projects shall remain with the developer until such time the maintenance responsibility is vested in the Trustees of the subdivision. These maintenance requirements do not imply that any drainage structures or systems are or will become the maintenance responsibility of the City of Satsuma. A letter from the owner/developer indicating responsibility for maintenance of all drainage structures or systems shall be submitted and will become part of the official record that will run with the land.

#### **SPECIAL CONSIDERATIONS**

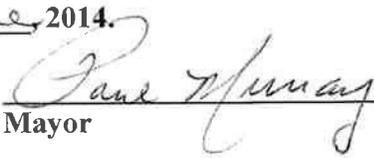
1. Concrete box culverts used as culverts shall be designed and constructed according to the latest edition of the Standards and Specifications for Road and Bridge Construction, Alabama Department of Transportation.

2. Head walls and Riprap. Culvert head walls shall be required on pipe culverts and shall be reinforced concrete.

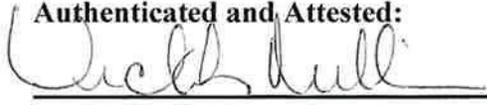
Special types of head walls may be required by the City when deemed necessary for erosion control.

Riprap may be required at the upstream and downstream ends of culverts and shall be placed at these locations based on the velocities at these locations.

ADOPTED THIS 3<sup>rd</sup> day of June, 2014.

  
\_\_\_\_\_  
Mayor

Authenticated and Attested:

  
\_\_\_\_\_  
CITY CLERK