ARTICLE 9

PERFORMANCE GUIDELINES

9.1 GENERAL

9.1.1 Purpose:

The sections enumerated in this article are guidelines, and are intended to be benchmark indicators of what standards could be acceptable. They are further intended to allow alternate designs which would produce results similar to these performance standards and similar protection to the public. The objective of these performance standards is not to suggest single methodological standards of acceptance exclusive of all others. Rather they establish what would otherwise be allowed in the absence of an acceptable alternative.

9.1.2 Constraints:

The alternative design solutions are constrained by the Design Requirements of Article 5, the Access Requirements and Street and Right-of-Way Requirements and the Street Construction Standards of Article 6, and the Grading, Detention, Drainage Requirements of Article 8, as well as the Purpose and Intent of these Regulations.

9.1.3 Documentation Required:

In the event that the applicant suggests an alternative, studies and reports conducted by professionals currently licensed in the State of Georgia will be required to be submitted to and approved by the City. These studies and reports must clearly relate to the desired results and purposes expressed or implied in the applicable performance standard. Once the City has approved an alternative, it shall become a required standard applicable to the specific approved permit only.

9.2 LOTS

9.2.1 Lots should be designed generally such that they are no more than four (4) times as deep as they are wide at the building setback line, unless excepted by the City.

a. The City may require notation that a House Location Plan (HLP) is required to be approved prior to issuance of a building permit on certain lots when particular care in

locating the house or other improvements will be necessary. Such lots include, but are not limited to:

(1) a lot which presents particular or unusual difficulties for a builder to meet minimum required building setbacks;

(2) a lot upon which is located an easement of unusual configuration;

(3) a lot containing floodplain but upon which no fill or other encroachment into the floodplain is anticipated at the time the Final Plat is filed;

(4) a lot upon which is located all or a part of a storm water detention facility;

(5) a lot upon which is located a buffer which was required by the Zoning Ordinance as a condition of zoning approval;

(6) all duplex lots; and

(7) all lots within, or partially within, the Chattahoochee River Corridor, or containing a River Corridor Tributary Buffer Zone.

b. The City may require notation that a Residential Drainage Plan (RDP) is required to be approved prior to issuance of a building permit on certain lots where additional (site specific) engineering will be necessary to properly grade the lot or locate the building or other improvements. Such lots include, but are not limited to:

(1) a lot containing floodplain where fill or other encroachment into the floodplain is planned or reasonably expected;

(2) a lot containing severe topographic features indicating the building site; and

(3) a lot containing a drainage easement with a pipe discharge or other facilities, or flow characteristics which may adversely affect the location of a building or other site improvements.

c. The City may require notation that a Residential Drainage Study (RDS) is required to be approved prior to issuance of a building permit on certain lots where particular attention to site grading will be necessary, but formal engineering is not needed. Such an RDS is conducted in the field where the effect of the site grading must be accomplished with adequate care so as not to create a drainage problem on neighboring property.

9.2.2 Side lot lines generally should be at right angles (90 degrees) to straight street lines or radial to curved street lines as much as practical. Side lot lines should be radial to the radius points of all cul-de-sacs. Variations of more than ten (10) degrees shall require approval of the City, but shall be approved when appropriate to the reasonable lotting pattern of the subdivision, efficient use of the land relative to topographic conditions, or provision of improved building sites over those which would result without variation of the side lot lines.

9.2.3 Corner lots shall be sufficiently larger so that they have the same width between minimum side setback lines as an interior lot, but in no case shall more than seventy-five (75) feet between side setback lines on a corner lot be required.

9.3 BLOCKS

9.3.1 The length, widths, and shapes of blocks shall be determined with regard to:

a. Provision of adequate building sits suitable to the special needs of the type of use contemplated.

b. Application zoning requirements as to lot size and dimensions.

c. Needs for convenient access, circulation, control, and safety of street traffic.

d. Limitations and opportunities of topography.

9.3.2 In blocks over one thousand (1,000) feet long, the City may, when existing or proposed pedestrian circulation patterns or public gathering places so justify, require pedestrian ways or pedestrian access easements, as appropriate, through the block.

9.4 ACCESS

A maximum number of two hundred (200) residential dwelling units shall be allowed to be constructed with only one (1) street outlet on an existing public street. If a second access to an existing public road is not available or, in the opinion of the City, could induce non-residential traffic through the development, a single entrance may be allowed if designed with a traffic signal and/or sufficient right-of-way and improvements to provide a protected left-turn lane, subject to the approval of the City Engineer.

9.5 ROADWAY DESIGN

9.5.1 Street Grades and Design Speeds:

a. Minimum grade for all local and minor collector streets shall be one and one-half (1.5) percent. Minimum grades for all major collector and arterial streets shall conform to Georgia DOT practice.

b. Minimum grade of less than one and one-half (1.5) percent on a local street may be approved by the City, based on adequate engineering designs, where at least one and one-half (1.5) percent cannot reasonably be achieved due to topographical limitations imposed by the land. In such cases, a record drawing and such computations as necessary shall be provided after construction to establish that the street will drain in accordance with these Regulations. Street sections where unacceptable pooling, excessive spread at catch basins or other hazardous conditions occur shall be reconstructed or otherwise improved to eliminate such conditions.

c. Minimum vehicle design speeds and maximum grades allowable in the City of Buford by street classification shall be as shown in Table 9-A.

d. Maximum grade on any cul-de-sac turnaround shall be six (6) percent.

TABLE 9-A

MINIMUM DESIGN SPEEDS AND MAXIMUM GRADES

STREET CATEGORY	MAXIMUM GRADE	DESIGN SPEED
Principal Arterial	6%	60 MPH
Major Arterial	8%	50 MPH
Minor Arterial	10%	40 MPH
Major Collector	10%	40 MPH
Minor Collector	10%	30 MPH
Local	15% *	20 MPH

* Grades between 12% and 14% shall not exceed a length of one hundred and fifty (150) feet and shall require an "as graded" survey prior to the installation of the curb or utilities. The distance shall be measured as the tangent length between points of curvature.

9.5.2 Vertical Street Alignment:

a. All changes in street profile grades having an algebraic difference greater than one (1) percent shall be connected by a parabolic curve having a minimum length (L) equal to the product of the algebraic difference between the grades in percent (A) and the design constant (K) assigned to the street according to its category (i.e., L = KA).

b. Constant (K) values are shown in the Table 9-B for both desirable and minimum acceptable ("hardship") conditions. In all cases, the "desirable" value shall be used, unless it cannot be achieved due to topographic conditions beyond the developer's control. In such hardship situations, the City may approve a lesser value to the extent required by the hardship situation, but in no event less than the value shown in the table as "minimum".

TABLE 9-B

CONSTANT (K) VALUES FOR VERTICAL CURVES

STREET CATEGORY	CREST CURVES MINIMUM	CREST CURVES DESIRABLE	SAG CURVES MINIMUM	SAG CURVES DESIRABLE
Principal Arterial	200	320	125	155
Major Arterial	100	170	80	110
Minor Arterial	55	80	55	70
Major Collector	55	80	55	70
Minor Collector	30	30	35	35
Local	10	10	20	20

9.5.3 Horizontal Street Alignment:

a. All new streets shall adhere to the following standards governing horizontal curvature and super-elevation:

TABLE 9-C

HORIZONTAL CURVES

STREET CATEGORY	MINIMUM RADIUS (FT)	MAXIMUM SUPER-ELEVATION
Principal Arterial	1333	0.06
Major Arterial	833	0.06
Minor Arterial	560	0.04
Major Collector	560	0.04
Minor Collector	300	0.04 *
Local	120	0.00

* No super-elevation will be allowed on Minor Collectors internal to residential subdivisions.

b. Super-elevation for horizontal curves shall be calculated utilizing the following formula:

R = minimum radius of curve

v = vehicle design speed, (MPH)
e = rate of super-elevation (decimal of a foot rise per foot of roadway width)
f = side friction factor, as follows:

$$R = \frac{v^2}{15 (e + f)}$$

Vehicle Design Speed (v)	30	40	50	60
Side Friction Factor (f)	.16	.15	.14	.12

c. Widening section along existing streets shall be designed reflecting existing curvature and super-elevation, if any, unless the existing street has been included in a specific design by the County or Georgia DOT which calls for different standards, in which case the project will be coordinated with the overall design.

d. Super-Elevation Runoff:

Roadway edge curves shall be provided for tangent runout (bringing edge from a normal crown to centerline elevation) and super-elevation runoff (from the end of tangent runout to the point of design super-elevation) in accordance with design standards of the Georgia DOT or other professional engineering standards.

e. Tangents and Compound Curves:

Between reverse horizontal curves, there shall be not less than the minimum centerline tangents shown in Table 9-D unless otherwise specified by the Georgia DOT Compound radii curves are prohibited. At least the “desirable” length shall be provided unless hardship conditions of topography or property configuration will not allow lengths greater than those shown as “minimum”. For compound circular curves, the ratio of the flatter radius to the sharper radius shall not exceed one and one-half (1.5) to one (1).

TABLE 9-D

TANGENTS

STREET CATEGORY	MINIMUM TANGENT LENGTH	DESIRABLE TANGENT LENGTH
Principal Arterial	150	180 Feet
Major Arterial	125	150 Feet
Minor Arterial	100	120 Feet
Major Collector	100	120 Feet
Minor Collector	75	90 Feet
Local	50	60 Feet

NOTE: Minimum tangents are based on the distance traveled in 1.7 seconds at the design speed for each category of street. Desirable length is based on distance traveled in 2.0.

9.5.4 Horizontal and Vertical Clearances:

a. Horizontal Clearances:

(1) A shoulder of no less than eleven (11) feet from the back of curb or edge of pavement, appropriately graded and having gentle slopes of not more than one-half (½) inch per foot and rounded cross-sectional design shall be maintained along all streets. Beyond the shoulder but within the right-of-way, slopes shall not exceed one (1) foot of rise for each two (2) feet of horizontal distance on a cut slope, and one foot of fall for each three (3) feet of horizontal distance on a fill slope.

(2) Along all public streets, a clear zone shall be provided for a minimum distance of six (6) feet from back of curb or edge of pavement wherein nothing may be located above ground except traffic/street signs and yielding mail boxes. The clear zone shall be clear of all unyielding objects such as trees, or unyielding signs, structures around mail boxes, utility poles, light poles, and any other fixed objects that might severely damage an out-of-control vehicle.

(3) At selected locations, such as the outside of a sharp curve, a wider clear zone with greater horizontal

clearances provided to any roadside obstruction may be required.

b. Vertical Clearances:

Vertical clearance at underpasses shall be at least fourteen and one-half (14.5) feet over the entire roadway width.

9.6 STREET INTERSECTIONS

9.6.1 Angle of Intersection:

Intersections shall generally be at right angles and shall not be at an angle of less than eighty five (85) degrees unless approved by the City, nor less than eighty (80) degrees unless the intersection is signalized in which case the angle of the intersection may be reduced subject to the review and approval of the City.

9.6.2 Maximum Grade

Street intersection should be designed with a flat grade wherever possible, but in no case should the grade exceed two (2) percent in normal situations (or four (4) percent in topographical hardship situations on local streets).

9.6.3 Intersection Approaches: Horizontal Alignment

a. New local streets which approach an intersection with a street in a category higher than itself on a horizontal curve having a centerline radius less than one hundred and forty (140) feet shall provide a tangent section of roadway at least thirty (30) feet long. Minor collectors approaching an intersection with a major thoroughfare on a horizontal curve having a centerline radius of less than five hundred and fifty (550) feet shall also provide the thirty (30) foot tangent section. The tangent length shall be measured along the centerline of the street, from the right-of-way line of the intersecting street, extended to the point of tangency with the centerline of the curve section.

b. New major thoroughfares shall provide tangent sections at intersections with streets in equal or higher categories as needed too provide adequate stopping distances at their design speeds.

9.6.4 Intersection Approaches: Vertical Alignment:

a. For intersections with local or minor collector streets, a leveling of the street at a grade not exceeding two (2) percent shall be provided but no level approach distance is required for streets approaching at less than seven (7) percent, and a minimum twenty-five (25) foot level approach distance shall be provided for streets approaching at a grade of seven (7) percent or more. (See Standard Drawings.)

b. As a street approaches an intersection with a major thoroughfare, there shall be a suitable leveling of the street at a grade not exceeding two (2) percent and for a distance not less than the following minimums:

TABLE 9-E

APPROACH DISTANCES AT MAJOR INTERSECTIONS

APPROACHING STREET CATEGORY	MINIMUM APPROACH DISTANCE *
Principal Arterial	100 Feet
Major Arterial	100 Feet
Minor Arterial	100 Feet
Major Collector	75 Feet
Minor Collector	75 Feet
Local	50 Feet

* Distance of the approach is measured from edge of pavement of the intersecting street to the point of curvature in the approaching street.

9.6.5 Intersection Radii:

Intersection radii for roadways measured at back of curb and for the right-of-way lines shall be as follows. For intersecting streets of different classification, the large radii shall be provided. In all cases, adequate right-of-way shall be provided to maintain a minimum of eleven (11) feet from back-of-curb. Larger radii may be

required for streets intersecting at angles less than ninety (90) degrees.

TABLE 9-F

INTERSECTION RADII

STREET CATEGORY	ROADWAY RADII	R-O-W RADII *
Arterial	40 Feet	20 Feet
Major Collector	40 Feet	20 Feet
Minor Collector – Residential	25 Feet	9 Feet
Minor Collector – Non-Residential	40 Feet	20 Feet
Local – Residential	20 Feet	9 Feet
Local – Commercial or Office	25 Feet	11 Feet
Local – Industrial	40 Feet	25 Feet

* Intersecting right-of-way lines may be joined by an arc having the minimum radius shown, or by a miter which cuts across the right-of-way lines connecting the points where the required radius would have otherwise been tangent.

9.6.6 Islands:

Islands in street intersections shall conform to the design requirements of the Standard Drawings. In no case shall anything in an island extend more than three (3) feet above the street grade within the right-of-way, except traffic regulatory devices and other infrastructure erected or approved by the City of Buford. No island shall be approved which contains less than one hundred (100) square feet.

9.6.7 Intersection Corner Sight Distance:

a. Intersections shall be designed with adequate corner sight distance for each street which approaches a street in an equal or higher street category (except an intersection of two local streets). Where necessary, backslopes shall be

flattened and horizontal or vertical curves lengthened to provide the minimum required sight distance.

b. The minimum corner sight distance from the approaching street shall be equal to or exceed ten (10) times the regulated speed of the intersecting street, as measured from the center of the approaching street in both directions along the right-of-way line of the intersecting street. As an alternative, the minimum corner sight distance requirement may be calculated using AASHTO "Policy on Geometric Design of Highways and Streets", Chapter 9 (at-grade intersection), latest edition. The sight distance shall provide clear visibility of an object four (4) feet above the intersecting street viewed from the centerline of the approaching street at the right-of-way of the intersecting street, at a height of three and one-half (3.5) feet above the ground.

9.6.8 Obstructing Visibility at Intersections:

On any corner lot, within an area formed by the lot lines on the street sides of such lot and a line (miter) joining points on such lots lines located at a distance of twenty (20) feet from the point of their intersection, the following shall apply:

a. There shall be no fence or wall or hedge higher than three (3) feet.

b. There shall be no obstruction to vision, other than a post or column or tree (except standards erected by the City of Buford) not exceeding one (1) foot in greatest cross-sectional dimension, between a height of three (3) feet and a height of fifteen (15) feet above the established grade of either of the intersecting streets.

9.6.9 Turning Lanes at Intersections:

Left turning lanes shall be provided on all new internal project streets approaching an intersection with a major thoroughfare, and may be required in other locations to meet traffic demand and safe operations. Right turning lanes may be required to meet traffic demands or safety concerns. When provided, turning lanes shall meet the following criteria:

a. Storage Length – A minimum of one hundred fifty (150) feet of storage length for turning lanes on any arterial roadway shall be used. A minimum of one hundred (100) feet of storage length for turning lanes on all collectors shall be used.

b. Taper Length – The minimum taper length shall be fifty (50) feet.

c. Left turning lanes from arterial roads shall be subject to longer storage lengths and tapers and as determined on a case by case basis.

9.7 DRIVEWAY INTERSECTIONS

9.7.1 Angle and Improvements:

Driveways shall generally intersect streets at right angles. The portion of a driveway located within a public right-of-way shall be paved, if any. Driveways providing access to parking lots, which contain six (6) or more spaces, shall be paved in accordance with the parking lot requirements of the Zoning Ordinance.

9.7.2 Driveway Design Standards:

a. Driveways serving single-family detached or duplex residences may be no less than ten (10) feet wide at the right-of-way line and shall provide a radius to the back of curb or edge of pavement of the roadway of no less than five (5) feet. All other driveway curb cuts on public streets shall conform to the standards shown on the driveway details contained in the Standard Drawings, by land use type as follows:

(1) Driveway Detail 1 (32’ Width, 25’ Radius) for:

(a) Service Stations;
(b) Commercial Sites (over 80,000 square feet);
(c) Office/Institutional Complexes (over 100,000 square feet;
(d) Apartment/Condo Complexes (over 200 units); and,
(e) Mobile Home Complexes (over 200 lots).

(2) Driveway Detail 2 (28’ Width, 25’ Radius) for:

(a) Commercial Sites (80,000 square feet or less);
(b) Office/Institutional Complexes (100,000 square feet or less);
(c) Apartment/Condo Complexes (200 units or fewer); and,
(d) Mobile Home Complexes (200 units or fewer).

(3) Driveway Detail 3 (32’ Width, 40’ Radius) for:

(a) Industrial Sites

(4) Driveway Detail 4 (Optional Design with Island) for:

(a) Private Commercial/Office Street Entrances;
(b) Private Entrances to Apartment/Condo Complexes (over 200 units); and,
(c) Private Entrances to Mobile Home Complexes (over 200 lots).

b. All driveways and driveway curb cuts on State highways shall conform to Georgia DOT standards unless City requirements are more restrictive.

9.7.3 Auxiliary Lanes:

Along any arterial or collector street, a deceleration lane, acceleration lane, larger turning radius, traffic islands, or other devices or designs may be required to avoid specific traffic hazards created by the proposed driveway section unless extraordinary circumstances prevent such actions as determined by the Planning Director.

9.7.4 Corner Sight Distance:

All driveways approaching a minor collector or major thoroughfare shall provide adequate corner sight distance. The minimum corner sight distance from the driveway shall be equal to or exceed ten (10) times the regulated speed of the intersecting street, as measured from the center of the driveway in both directions along the right-of-way line of the intersecting street. As an alternative, the minimum corner sight distance requirement may be calculated using AASHTO “Policy on Geometric Design of Highways and Streets”, Chapter 9 (at grade intersections), latest edition. The sight distance shall provide clear visibility of an object four (4) feet above the intersecting street viewed from the centerline of the driveway at the right-of-way line of the intersecting street, at a height of three and one-half (3.5) feet above the ground.

9.7.5 Separation and Spacing:

All driveways except those serving residential units on individual lots shall be recommended to meet the following criteria:

a. Minimum separation from a street intersection: one hundred (100) feet from centerline of driveway to nearest right-of-way line of the intersecting street, extended. For any driveway on a major thoroughfare having a centerline between one hundred (100) feet and two hundred (200) feet from the intersecting street right-of-way line, access restrictions may be imposed to avoid traffic hazards. Greater separation may be required for safe operation of a free-right lane, acceleration or deceleration lane, etc.

b. Minimum separation between driveways along the same side of a major thoroughfare: one hundred (100) feet between centerline as measured along the roadway edge or back of curb.

c. Whenever possible, proposed driveways along one side of a street shall coincide with existing or proposed driveways on the opposite side of such street.

d. Maximum number of driveways serving a single project: one (1) for each four hundred (400) feet of property frontage, or fraction thereof per street, along a major thoroughfare. This is not meant to be a spacing standard only at expression of the total number of driveways that permitted serving a single project. Provided however, that Buford Highway/Highway 23 shall not be subject to the above guideline but shall be subject to the Buford Highway Masterplan duly adopted by the City of Buford and incorporated by reference herein.

9.8 STORMWATER DETENTION GUIDELINES

9.8.1 General:

a. Stormwater detention facilities shall be designed so that their peak release rates, when combined with those of all detention bypass areas in the same basin, produce peak flow rates and flow velocities at the site's boundary line no greater than those which occurred at the same location for pre-developed conditions.

b. The positive effects of stormwater management via on-site detention facilities diminish rapidly as the distance downstream from the point of discharge increases, and the smaller the facility's contribution is, as a percentage of the total runoff contributing to downstream flow, the shorter the distance downstream that the benefits are realized. Because of these limitations, on-site detention is effective at

controlling flooding only when flow from the facility is a significant percentage of the total flow at the point of interest, and only if the point of interest is “immediately” downstream. The concepts of “immediately downstream” and “significant percentage” of total flow are inseparable. The portion of a receiving watercourse (one which receives and conveys runoff from a site) which lies downstream from the site to the point where the area of the site is ten (10) percent of the total drainage area, shall generally be considered to constitute that portion of the watercourse which is “immediately” downstream. However, the total flow in the receiving watercourse may become very large, relative to the flow contributed by the project site, within a much shorter distance. For this reason, the “substantial percentage” test must also always be applied. For purposes of these Regulations, the flow from a site represents a “significant percentage” of the total flow in a watercourse only when the ratio of the peak flow rate from the site to the peak flow rate in the watercourse (including the contribution from the project site) is greater than five (5) percent.

c. Peak flow rate control shall normally be provided only for the 2-year, 5-year, 10-year, and 25-year frequency storm events. However, under certain conditions, the 100-year event must also be detained to the pre-developed rate. Such control of the 100-year event shall be provided when failure to do so would result in flooding of other habitable dwellings, property damage, or public access and/or utility interruption.

d. For any stormwater analysis, the composite “C” (Rational Method) or CN (SCS Method) used for analysis of pre-development conditions shall not exceed 0.25 or 60, respectively, unless prior approval has been obtained from the City. A pre-design conference between the design engineer and appropriate City personnel, which may in certain straightforward cases, be conducted via the telephone if required.

e. Rational Method runoff coefficients used for analysis of pre- and post-development conditions shall be consistent with those shown in Table 9-G.

TABLE 9-G

RATIONAL METHOD RUNOFF COEFFICIENTS

LAND USE	TYPE OF TERRAIN STEEP (Over 7&)	ROLLING (2% - 7%)	FLAT (Under 2%)
Wooded:			
Heavily	.21	.18	.15
Moderately	.25	.21	.18
Lightly	.30	.25	.21
Lawns/Grassed Areas	.35	.30	.26
Bare Soil (Uncompacted)	.60	.60	.50
Impervious	.98	.95	.95
Residential:			
25,500 S. F. Lots	.40	.36	.32
15,000 S. F. Lots	.50	.45	.40
12,000 S. F. Lots	.50	.45	.40
Townhomes (45% Impervious)	.65	.60	.55
Apartments (75% Impervious)	.82	.79	.74
Pasture:			
Good Condition	.25	.21	.18
Average Condition	.45	.40	.36
Poor Condition	.55	.50	.45
Farmland (Non-Growing Season)	.50	.46	.41
Lakes & Detention Basins	1.00	1.00	1.00
Commercial & Industrial	(Calculate on case-by-case basis.)		

9.8.2 Dam Design and Construction Criteria:

a. Detention facilities, which take the form of normally dry basins, ponds, or lakes usually, are created by damming a drainage way or watercourse. Such dams can take a variety of different forms, the most common being earthen embankments and reinforced concrete walls. Each type of dam has different characteristics, and the selection of the most appropriate type for a particular site should be made by a professional engineer and based on the physical features of the dam site, the purpose of the dam, the type of impoundment, safety, and maintenance requirements.

b. For purposes of these Regulations, dams will be addressed separately for each of the three (3) most frequently encountered types of detention facilities: normally dry

basins, ponds, and lakes. A normally dry basin is one designed to impound stormwater runoff for only a brief period of time following a storm event. The vast majority of the time, the basin will completely dry except for any normal stream flows which pass through unimpeded. Lakes and ponds, on the other hand, are designed to impound a body of water at least several feet in depth on a more-or-less permanent basis. Lakes and ponds vary from one another only in terms of magnitude. The magnitude of a lake is determined primarily from the height of its dam, the size of its contributing drainage area, and the volume of water it is capable of impounding. For purposes of these Regulations, a pond is any lake having a dam height of less than twenty (20) feet, a drainage area of less than one hundred (100) acres, and which is incapable of impounding more than ten (10) acre-feet of water.

c. All dam design is to be certified by a professional engineer currently registered in the State of Georgia.

d. Dams for normally dry detention basins shall conform to the following:

(1) Dams for normally dry detention basins may be constructed of earth, reinforced concrete, mortared rubble, or other suitable materials.

(2) The design of any concrete or rubble wall over five (5) feet in height shall be certified by a Structural engineer currently registered as a professional engineer in the State of Georgia, and the structural design shall be based on soil tests certified by a geotechnical engineer currently registered as a professional engineer in the State of Georgia.

(3) Any non-earthen structure shall be designed to prevent piping failure through its subgrade and abutments.

(4) The construction of walls over five (5) feet in height shall be monitored and approved by a qualified material testing company.

(5) Earthen dams for normally dry detention basins shall have a top width of no less than eight (8) feet.

(6) For earthen dams for normally dry detention basins, there shall be at least one and one-half (1½) feet of

vertical separation between the 100-year ponding elevation in the basin and the low point on the top of the dam. One (1) foot of this distance is to provide a margin of safety against overtopping of the dam and the other six (6) inches is to allow for settlement. No separation is required for a non-earthen dam, if it has been designed to overtop safely.

(7) More stringent design and construction criteria shall be sued for dams for normally dry detention basins whenever the probable consequences of dam failure are severe.

e. Dams for ponds shall conform to the following:

(1) Any engineer responsible for the design of a dam for a pond is expected to be knowledgeable of the criteria contained within the Georgia Safe Dams Act, Georgia Department of Natural Resources “Rules for Dam Safety” publication, and the U.S.D.A. Soil Conservation Service’s Technical Release No. 60 “Earth Dams and Reservoirs”. The provisions of each are to be applied wherever applicable. Applicability shall be determined based upon site-specific constraints and downstream conditions. Consultation with appropriate City personnel both prior to and throughout the design process is encouraged.

f. Dams for lakes shall conform to the following:

Any engineer responsible for the design of a dam for a lake is expected to the thoroughly familiar with the criteria contained within the Georgia Safe Dams Act, Georgia Department of Natural Resources “Rules for Dam Safety” publication, and the U.S.D.A. Soil Conservation Service’s Technical Release No. 60 “Earth Dams and Reservoirs”. All design is to be in accordance with the applicable requirements contained in each of the above referenced publications.

9.8.3 Detention Facility Outlet Devices:

a. Because of the variables that may be associated with the choice of an outlet device for any given conditions, the design consultant is responsible for the selection of the device, subject to the review and approval of the City.

b. The City will include in its consideration the ease of maintenance, longevity of the system, freedom from congestion, practicality, and aesthetics in its review of the outlet device. The consultant should be guided by the Cityal preference of vertical weir designs since they have proven to generally meet most of the considerations expressed herein.

c. No orifice shall be smaller than three (3) inches in diameter. A trash rack shall protect an orifice smaller than fifteen (15) inches in diameter. A trash rack protecting an orifice shall have a surface area of at least ten (10) square feet. No opening in the trash rack shall have an area more than one-half (½) the size of the area of the orifice being protected. Two-stage trash racks, or screens having progressively smaller openings placed in series, are suggested. To facilitate outlet operation, curved or inclined trash racks designed to allow debris to rise with the water level are preferred. In all cases, trash racks shall be either hinged or removable to facilitate maintenance operations.

d. If the primary detention facility outlet is a conduit through a dam, and there is not an orifice, weir-box, or other flow-control device affixed to the upstream end, then the conduit shall be analyzed for both inlet and outlet control conditions. If an orifice or weir-box is affixed, then the conduit shall be analyzed to determine if any flows will occur for which outlet control conditions in the conduit, rather than the hydraulic characteristics of the flow-control structure, will determine the total flows occurring. In any case where the conduit through the dam is less than fifteen (15) inches in diameter, the trash rack provisions of “c” above shall be followed.

e. Unless the 100-year maximum flow velocity in a conduit through a dam forming a pond or a lake is less than ten (10) feet per second, and the hydraulic grade line for the 100-year condition is at or below the crown of the conduit for at least ninety (90) percent of its length, the conduit must be equal or superior to Class V reinforced concrete pipe in its structural characteristics.

9.8.4 Emergency Overflow Requirements:

a. For every type of detention facility, a planned safe flow path must be provided for conveyance of flows of water in excess of those for which the detention facility was designed. In many instances, this function can be provided through installation of an emergency spillway. Emergency spillways

are usually excavated open channels, either vegetated or paved with reinforced concrete.

b. Every earthen dam shall be provided with an open-channel emergency spillway, unless all of the following apply:

(1) The principal spillway is a closed conduit having a cross-sectional area that can pass one hundred twenty-five (125) percent of the 100-year storm routed peak discharge.

(2) The principal spillway is a closed conduit having a cross-sectional area of at least one (1) square foot per each three (3) acres of drainage area, of a maximum of twenty (20) square feet of surface area, whichever is less.

(3) The principal spillway capacity is at least equal to the capacity required for an open-channel emergency spillway.

(4) The low point of the dam crest is not in a fill section except for roadway embankments.

(5) A trash rack or other debris protection is provided on the outlet control.

c. Any portion of an emergency spillway excavated into a dam embankment or other fill section must be paved. Pavement material shall be either reinforced concrete or asphalt, as dictated by the design life of the dam and the potential consequences of its failure. Any portion of any emergency spillway excavated into natural ground shall be vegetated in accordance with the practices described in the “Manual for Erosion and Sediment Control in Georgia”.

d. In determining the necessary dimensions of an open-channel spillway for a normally dry basin, a pond, or a lake, the methodology contained in the “Earth Emergency Spillway Design Data” section of the “Manual for Erosion and Sediment Control in Georgia” should be used.

e. Emergency spillway capacity for earthen dams shall be as follows:

(1) For normally dry detention basins, ponds, and lakes having a dam height of less than nine (9) feet, and which are incapable of impounding more than twenty

(20) acre-feet of water, and for which the probable consequences of dam failure are not severe, an emergency spillway should be provided. Its capacity should be at least equal to the routed 100-year peak flow out of the detention facility assuming the principal spillway is blocked.

(2) For normally dry detention basins, ponds, and lakes, having a dam height of nine (9) feet or more and which are capable of impounding twenty (20) acre – feet or more of water, an emergency spillway should be provided. Its capacity should be at least equal to the greater of either the routed 100-year peak flow rate out of the facility assuming the principal spillway is blocked, or the routed one-fourth (¼) PMF hydrograph out of the facility. In cases when State or Federal regulations may require greater spillway capacity, those more stringent regulations shall govern.

f. Emergency overflow for non-earthen dams may take the form of planned structure overtopping. In such cases, however, care must be taken to prevent flows from eroding supporting soils along the toe of or immediately downstream from the dam so as to cause it to be undermined. The profile of the tope of the dam shall be so designed as to prevent flows along the ends of the structure, which might result in abutment erosion.

9.8.5 Parking Lot Detention Facilities:

a. Parking lot detention facilities shall generally be of one (1) of the two (2) following types:

(1) Depressed areas of pavement at drop inlet locations; and,

(2) Ponding areas along sections of raised curbing. The curbing in these areas is usually higher than a standard curbed section.

b. The Rational Method shall be utilized for all parking lot detention facility design.

c. Parking lot detention areas shall be located so as to restrict ponding to areas other than parking spaces ear buildings and to not encroach upon entrance drives.

d. The maximum depth of detention ponding in a parking lot, except at a flow control structure, shall be six (6) inches for a 10-year storm, and nine (9) inches for a 100-year storm. The maximum depth of ponding at a flow control structure shall be twelve (12) inches for a 100-yer storm.

e. In truck parking areas, the maximum depth of ponding shall be twelve (12) inches for the 10-year storm.

f. Detention ponding areas are to be drained within thirty (30) minutes after the peak inflow occurs.

g. Parking lot detention areas shall have a maximum surface slope of one (1) percent, and a maximum slope of five (5) percent.

9.8.6 Underground and Rooftop Detention Facilities:

The design of underground or rooftop detention facilities shall be in accordance with current engineering standard practice, and shall conform to the general spirit and intent of this Article. In the case of rooftop detention, permissible structural loads and weatherproofing shall be governed by the Building Code as adopted by the City of Buford.

9.8.7 Sediment Basins:

a. Stormwater management and sediment trapping functions should be separated whenever possible. Every erosion control design should seek first, to prevent erosion from occurring; secondly, to trap sediments as close to their sources as possible; and thirdly, provide a second-tier or backup line of defense against sediments leaving the project site. This backup defense will usually consist of check dams and/or sediment basins.

b. Whenever a sediment basin and a detention facility are both required on the same watercourse, the sediment basin should be located immediately upstream of the detention facility.

c. In unusual cases where a normally dry detention basin is planned to be used to trap sediment as well as provide stormwater control, the basin may be undercut to accommodate the sediment so that the required detention characteristics, particularly volume, will be maintained.

d. The design of sediment basins shall be in accordance with Appendix C of the "Manual for Erosion and Sediment Control in Georgia".

9.8.8 Ponds and Lakes Not Used for Detention:

In such cases where a pond or lake is provided as part of a development, but is not planned to function as a stormwater detention facility, the same general and specific criteria contained in these Regulations shall apply, but may be modified in instances where a specific requirement is clearly detention oriented rather than safety-based.

9.9 CULVERTS AND PIPE COLLECTION SYSTEM GUIDELINES

9.9.1 Culverts:

a. Single-barrel or single-cell culvert structures are less prone to clogging and require less maintenance than multi-barrel or multi-cell installation and should therefore be used whenever feasible.

b. The maximum velocity in a culvert for the 100-year flow shall be fifteen (15) fps (feet per second). Velocities over ten (10) fps shall be considered a special design with particular attention required to pipe or structure invert protection and to fill slope, streambed, and stream bank stability.

c. The minimum allowable slope shall be that which produces a 2-year flow velocity of two and one-half (2.5) fps.

9.9.2 Piped Collection Systems:

a. The maximum velocity in a piped system for the design flow shall be fifteen (15) fps. Velocities over ten (10) fps shall be considered a special design with particular attention required to pipe invert protection and the ability of one receiving waterway or detention facility to accept the flow without damage.

b. The minimum allowable slope shall be that which produces a 2-year flow velocity of two and one-half (2.5) fps.

c. The maximum allowable slope for a storm drainage pipe shall be twenty-five (25) percent. Greater slopes may be approved if installation is in accordance with manufacturer's recommendations. In cases where the slope is in excess of ten (10) percent, anchor collars may be required.

d. A minimum pipe cover of one (1) foot shall be required.

9.9.3 Outlet Location – Culverts and Piped Stems:

a. Outlet structures (such as headwalls) shall not be located closer to the project site's property line with an adjoining property than a flow distance equal to six (6) pipe diameters. For non-circular conduits, this distance shall be six (6) times the rise dimension of the conduit.

b. The invert elevations of a culvert or pipe outlet shall be no more than two (2) feet above the elevation of the bottom or the receiving watercourse at the outlet.

9.9.4 Energy Dissipation:

The maximum developed condition flow velocity at the project site's downstream property line with an adjoining tract shall not exceed the maximum pre-developed condition velocity. Calculations may be required to support this velocity standard on a case-by-case basis.

9.9.5 Discharge of Concentrated Flows:

a. The discharge of concentrated flows of stormwater into public roadways shall be avoided. In no case shall such concentrated flows, including flows from swales, ditches, draws, driveways, or piped systems, exceed the allowable peak flow rates in Table 9-H below.

b. In residential subdivisions, the peak flow rate associated with a 2-year storm shall not exceed one (1.0) cubic feet per second (cfs) along any property line between lots within fifty (50) feet of the building setback line for either lot, unless contained within a piped drainage system or maintained in a natural watercourse. This maximum flow rate may be increased to one and one-half (1.5) cfs in individual cases where there can be determined to be more than the normal separation between the dwellings on the affected lots.

TABLE 9-H

MAXIMUM FLOWS INTO STREETS

STREET CLASSIFICATION	ALLOWABLE PEAK FLOW RATE FOR A 2-YEAR STORM
Local	2.0 cfs
Minor Collector	1.0 cfs
Other	0.5 cfs

9.10. POST-DEVELOPMENT STORMWATER MANAGEMENT FOR NEW DEVELOPMENT AND REDEVELOPMENT

AN ORDINANCE TO AMEND THE CODE OF ORDINANCES FOR THE CITY OF BUFORD TO REPLACE THE CURRENT ORDINANCE FOR POST-DEVELOPMENT STORMWATER MANAGEMENT FOR NEW DEVELOPMENT AND REDEVELOPMENT IN ORDER TO REVISE SECTION REFERENCES, STORMWATER MANUAL REFERENCES, AND REQUIREMENTS FOR CONSTRUCTION INSPECTION REPORTS. THE ORDINANCE CONTINUES TO ESTABLISH A SYSTEM FOR POST-DEVELOPMENT STORMWATER MANAGEMENT FOR NEW DEVELOPMENT AND REDEVELOPMENT IN ORDER TO PROVIDE FOR THE PUBLIC HEALTH, SAFETY, AND WELFARE AND FOR OTHER PURPOSES.

BE IT ORDAINED BY THE CITY COMMISSION FOR THE CITY OF BUFORD, GEORGIA, PURSUANT TO THE AUTHORITY OF THE SAME, DO HEREBY RESOLVE AND ENACT INTO LAW THIS ORDINANCE FOR POST DEVELOPMENT STORMWATER MANAGEMENT FOR NEW DEVELOPMENT AND REDEVELOPMENT.

Introduction
It is hereby determined that:

Land development projects and other land use conversions, and their associated changes to land cover, permanently alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes, which in turn increase flooding, stream channel erosion, and sediment transport and deposition;

Land development projects and other land use conversions also contribute to increased nonpoint source pollution and degradation of receiving waters;

The impacts of post-development stormwater runoff quantity and quality can adversely affect public safety, public and private property, drinking water supplies, recreation, fish and other aquatic life, property values and other uses of lands and waters;

These adverse impacts can be controlled and minimized through the regulation of stormwater runoff quantity and quality from new development and redevelopment, by the use of both structural facilities as well as nonstructural measures, such as the conservation of open space and greenspace areas. The preservation and protection of natural area and greenspace for stormwater management benefits is encouraged through the use of incentives or "credits." The Georgia Greenspace Program provides a mechanism for the preservation and coordination of those greenspace areas that provide stormwater management quality and quantity benefits;

Cities in the State of Georgia are required to comply with a number of both State and Federal laws, regulations and permits which require a city to address the impacts of post-development stormwater runoff quality and nonpoint source pollution;

Therefore, the City of Buford has established this set of stormwater management policies to provide reasonable guidance for the regulation of post-development stormwater runoff for the purpose of protecting local water resources from degradation. It has determined that it is in the public interest to regulate post-development stormwater runoff discharges in order to control and minimize increases in stormwater runoff rates and volumes, post-construction soil erosion and sedimentation, stream channel erosion, and nonpoint source pollution associated with post-development stormwater runoff.

9.10.1. General Provisions

9.10.1.1. Purpose and Intent

The purpose of this ordinance is to protect, maintain and enhance the public health, safety, environment and general welfare by establishing minimum requirements and procedures to control the adverse effects of increased post-development stormwater runoff and nonpoint source pollution associated with new development and redevelopment. It has been determined that proper management of post-development stormwater runoff will minimize damage to public and private property and infrastructure, safeguard the public health, safety, environment and general welfare of the public, and protect water and aquatic resources. This ordinance seeks to meet that purpose through the following objectives:

(1) Establish decision-making processes surrounding land development activities that protect the integrity of the watershed and preserve the health of water resources;

(2) Require that new development and redevelopment maintain the pre-development hydrologic response in their post-development state as nearly as practicable in order to reduce flooding, streambank and channel erosion, nonpoint source pollution and increases in stream temperature, and maintain the integrity of stream channels and aquatic habitats;

(3) Establish minimum post-development stormwater management standards and design criteria for the regulation and control of stormwater runoff quantity and quality;

(4) Establish design and application criteria for the construction and use of structural stormwater control facilities that can be used to meet the minimum post-development stormwater management standards;

(5) Encourage the use of nonstructural stormwater management and stormwater better site design practices, such as the preservation of greenspace and other conservation areas, to the maximum extent practicable. Coordinate site design plans, which include greenspace, with the City's greenspace protection plan;

(6) Establish provisions for the long-term responsibility for and maintenance of structural stormwater control facilities and nonstructural stormwater management practices to ensure that they continue to function as designed, are maintained, and pose no threat to public safety; and,

(7) Establish administrative procedures for the submission, review, approval and disapproval of stormwater management plans, and for the inspection of approved active projects, and long-term follow up.

9.10.1.2. Applicability

(1) This ordinance shall be applicable to all land development, including, but not limited to, site clearing applications, site plan applications, subdivision applications, and grading applications, unless exempt pursuant to Subsection 2 below. These standards apply to any new development or redevelopment site that meets one or more of the following criteria:

a. New development that involves the creation of five thousand (5,000) square feet or more of impervious cover, regardless of site size;

b. Redevelopment that includes the creation, addition or replacement of five thousand (5,000) square feet or more of impervious cover, regardless of site size;

c. Any new development or redevelopment, regardless of site size, that is defined by the City Manager to be a hotspot land use; or,

d. Land development activities that are smaller than the minimum applicability criteria set forth in items A and B above if such activities are part of a larger common plan of development, even though multiple, separate and distinct land development activities may take place at different times on different schedules.

(2) The following activities are exempt from this ordinance:

a. Individual single-family or duplex residential lots that are not part of a subdivision comprised of three or more lots;

b. Additions or modifications to existing single-family or duplex residential structures;

c. Agricultural or silvicultural land management activities within areas zoned for these activities; and,

d. Repairs to any stormwater management facility or practice deemed necessary by the City Manager.

(3) The following activities may be granted waiver of the stormwater management requirements of these regulations for individual developments provided that a written request is submitted by the applicant containing descriptions, drawings, and other information that is necessary to evaluate the proposed development:

a. Individual single-family or duplex residential lost that are not part of a subdivision comprised of three or more lots;

b. Additions or modifications to existing single-family or duplex residential structures;

c. Agricultural or silvicultural land management activities within areas zoned for these activities; and,

d. Repairs to any stormwater management facility or practice deemed necessary by the City Manager.

9.10.1.3. Designation of Ordinance Administrator

The City Manager or the City Manager's designee is hereby appointed to administer and implement the provisions of this ordinance.

9.10.1.4. Compatibility with Other Regulations

This ordinance is not intended to modify or repeal any other ordinance, rule, regulation or other provision of law. The requirements of this ordinance are in addition to the requirements of any other ordinance, rule, regulation or other provision of law, and where any provision of this ordinance imposes restrictions different from those imposed by any other ordinance, rule, regulation or other provision of law, whichever provision is more restrictive or imposes higher protective standards for human health or the environment shall control.

9.10.1.5. Severability

If the provisions of any section, subsection, paragraph, subdivision or clause of this ordinance shall be adjudged invalid by a court of competent jurisdiction, such judgment shall not affect or invalidate the remainder of any section, subsection, paragraph, subdivision or clause of this ordinance.

9.10.1.6. Stormwater Design Manual

The City will utilize the policy, criteria and information including technical specifications and standards in the latest edition of the Gwinnett County Stormwater Design Manual and any relevant local addenda, for the proper implementation of the requirements of this ordinance. The manual may be updated and expanded periodically, based on improvements in science, engineering, monitoring and local maintenance experience.

9.10.2. Definitions

"Applicant" means a person submitting a post-development stormwater management application and plan for approval.
"Channel" means a natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water.
"**City**" means the City of Buford, Georgia.
"**Conservation Easement**" means an agreement between a land owner and the City of Buford or other government agency or land trust that permanently protects open space or greenspace on the owner's land by limiting the amount and type

of development that can take place, but continues to leave the remainder of the fee interest in private ownership.

“Detention" means the temporary storage of stormwater runoff in a stormwater management facility for the purpose of controlling the peak discharge.

“Detention Facility” means a detention basin or structure designed for the detention of stormwater runoff and gradual release of stored water at controlled rates.

“Developer” means a person who undertakes land development activities.

“Development” means a land development or land development project.

“Drainage Easement” means an easement appurtenant or attached to a tract or parcel of land allowing the owner of adjacent tracts or other persons to discharge stormwater runoff onto the tract or parcel of land subject to the drainage easement.

“Erosion and Sedimentation Control Plan” means a plan that is designed to minimize the accelerated erosion and sediment runoff at a site during land disturbance activities.

“Extended Detention” means the detention of stormwater runoff for an extended period, typically twenty-four (24) hours or greater.

“Extreme Flood Protection” means measures taken to prevent adverse impacts from large low-frequency storm events with a return frequency of one hundred (100) years or more.

“Flooding” means a volume of surface water that is too great to be confined within the banks or walls of a conveyance or stream channel and that overflows onto adjacent lands.

“Greenspace” or “**Open Space**” means permanently protected areas of the site that are preserved in a natural state.

“Hotspot” means an area where the use of the land has the potential to generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater.

“Hydrologic Soil Group (HSG)” means a Natural Resource Conservation Service classification system in which soils are categorized into four runoff potential groups. The groups range from group A soils, with high permeability and little runoff produced, to group D soils, which have low permeability rates and produce much more runoff.

“Impervious Cover” means a surface composed of any material that significantly impedes or prevents the natural infiltration of water into soil. Impervious surfaces include, but are not limited to, rooftops, buildings, streets and roads, and any concrete or asphalt surface.

“Industrial Stormwater Permit” means a National Pollutant Discharge Elimination System (NPDES) permit issued to an industry or group of industries that regulates the pollutant levels associated with industrial stormwater discharges or specifies on-site pollution control strategies.

“Infiltration” means the process of percolating stormwater runoff into the subsoil.

“Jurisdictional Wetland" means an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation.

“Land Development” means any land change, including, but not limited to, clearing, digging, grubbing, stripping, removal of vegetation, dredging, grading, excavating, transporting and filling of land, construction, paving, and any other installation of impervious cover.

“Land Development Activities” means those actions or activities that comprise, facilitate or result in land development.

“Land Development Project” means a discrete land development undertaking.

“Inspection and Maintenance Agreement" means a written agreement providing for the long-term inspection and maintenance of stormwater management facilities and practices on a site or with respect to a land development project, which when properly recorded in the deed records constitutes a restriction on the title to a site or other land involved in a land development project.

“New Development” means a land development activity on a previously undeveloped site.

“Nonpoint Source Pollution” means a form of water pollution that does not originate from a discrete point such as a sewage treatment plant or industrial discharge, but involves the transport of pollutants such as sediment, fertilizers, pesticides, heavy metals, oil, grease, bacteria, organic materials and other contaminants from land to surface water and groundwater via mechanisms such as precipitation, stormwater runoff, and leaching. Nonpoint source pollution is a by-product of land use practices such as agricultural, silvicultural, mining, construction, subsurface disposal and urban runoff sources.

“Nonstructural Stormwater Management Practice” or **“Nonstructural Practice”** means any natural or planted vegetation or other nonstructural component of the stormwater management plan that provides for or enhances stormwater quantity and/or quality control or other stormwater management benefits, and includes, but is not limited to, riparian buffers, open and greenspace areas, overland flow filtration areas, natural depressions, and vegetated channels.

“Off-Site Facility” means a stormwater management facility located outside the boundaries of the site.

“On-Site Facility” means a stormwater management facility located within the boundaries of the site.

“Overbank Flood Protection” means measures taken to prevent an increase in the frequency and magnitude of out-of-bank flooding (i.e. flow events that exceed the capacity of the channel and enter the floodplain), and that are intended to protect downstream properties from flooding for the two (2) year through twenty-five (25)-year frequency storm events.

“Owner” means the legal or beneficial owner of a site, including but not limited to, a mortgagee or vendee in possession, receiver, executor, trustee, lessee or other person, firm or corporation in control of the site.

“Permit” means the permit issued by the City to the applicant which is required for undertaking any land development activity.

“Person” means, except to the extent exempted from this ordinance, any individual, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility,

cooperative, city, county or other political subdivision of the State, any interstate body or any other legal entity.

"Post-development" refers to the time period, or the conditions that may reasonably be expected or anticipated to exist, after completion of the land development activity on a site as the context may require.

"Pre-development" refers to the time period, or the conditions that exist, on a site prior to the commencement of a land development project and at the time that plans for the land development of a site are approved by the plan approving authority. Where phased development or plan approval occurs (preliminary grading, roads and utilities, etc.), the existing conditions at the time prior to the first item being approved or permitted shall establish pre-development conditions.

"Project" means a land development project.

"Redevelopment" means a land development project on a previously developed site, but excludes ordinary maintenance activities, remodeling of existing buildings, resurfacing of paved areas, and exterior changes or improvements which do not materially increase or concentrate stormwater runoff, or cause additional nonpoint source pollution.

"Regional Stormwater Management Facility" or **"Regional Facility"** means stormwater management facilities designed to control stormwater runoff from multiple properties, where the owners or developers of the individual properties may assist in the financing of the facility, and the requirement for on-site controls is either eliminated or reduced.

"Runoff" means stormwater runoff.

"Site" means the parcel of land being developed, or the portion thereof on which the land development project is located.

"**Stormwater Better Site Design"** means nonstructural site design approaches and techniques that can reduce a site's impact on the watershed and can provide for nonstructural stormwater management. Stormwater better site design includes conserving and protecting natural areas and greenspace, reducing impervious cover and using natural features for stormwater management.

"Stormwater Management" means the collection, conveyance, storage, treatment and disposal of stormwater runoff in a manner intended to prevent increased flood damage, streambank channel erosion, habitat degradation and water quality degradation, and to enhance and promote the public health, safety and general welfare.

"Stormwater Management Facility" means any infrastructure that controls or conveys stormwater runoff.

"Stormwater Management Measure" means any stormwater management facility or nonstructural stormwater practice.

"Stormwater Management Plan" means a document describing how existing runoff characteristics will be affected by a land development project and containing measures for complying with the provisions of this ordinance.

"Stormwater Management System" means the entire set of structural and nonstructural stormwater management facilities and practices that are used to capture, convey and control the quantity and quality of the stormwater runoff from a site.

"Stormwater Retrofit" means a stormwater management practice designed for a currently developed site that previously had either no stormwater management

practice in place or a practice inadequate to meet the stormwater management requirements of the site.
"Stormwater Runoff" means the flow of surface water resulting from precipitation.
"Structural Stormwater Control" means a structural stormwater management facility or device that controls stormwater runoff and changes the characteristics of that runoff including, but not limited to, the quantity and quality, the period of release or the velocity of flow of such runoff.
"Subdivision" when used as a verb means any division or redivision of a lot, tract or parcel, regardless of its existing or future use, into two or more lots, tracts or parcels. The term "subdivision" shall mean the act or process of dividing property. When used as a noun, where appropriate to context, the term "subdivision" also may be used in reference to the aggregate of all lots in common ownership at the time of division. The following properties, however, shall not, for the purpose of this ordinance, be deemed subdivisions: A). The combination or recombination of portions of previously platted lots of record, where the total number of lots is not increased and the resultant lots of record are in compliance with the Zoning Ordinance, B) Division of land into parcels having five (5) or more acres where no new street or roadway is involved, C) Division of land into two (2) or fewer lots, provided: 1) each lot abuts an existing public street, 2) no alteration of existing utility installations is involved, and 3) the Planning Commission is notified of such division through a plat and executes a formal release of the property for recording and development purposes.

9.10.3. Permit Procedures and Requirements

9.10.3.1. Permit Application Requirements

No owner or developer shall perform any land development activities without first meeting the requirements of this ordinance prior to commencing the proposed activity.

Unless specifically exempted by this ordinance, any owner or developer proposing a land development activity shall submit to the City a permit application on a form acceptable to the City for that purpose.

Unless otherwise exempted by this ordinance, the following items shall accompany a permit application in order to be considered:

(1) Stormwater management plan in accordance with Section 9.10.3(b);

(2) Inspection and maintenance agreement in accordance with Section 9.10.3(c), if applicable;

(3) Performance maintenance bond in accordance with Section 9.10.3(d), if applicable; and,

(4) Permit application and application review fees in accordance with Section 9.10.3(e) and Section 9.10.3(f).

9.10.3.2. Stormwater Management Plan Requirements

The stormwater management plan shall detail how post-development stormwater runoff will be controlled or managed and how the proposed project will meet the requirements of this ordinance, including the performance criteria set forth in Section 9.10.4 below.

This plan shall be in accordance with the criteria established in this section and must be submitted with the stamp and signature of a Professional Engineer (PE) licensed in the state of Georgia, who must verify that the design of all stormwater management facilities and practices meet the submittal requirements outlined in the submittal checklist(s) found in the stormwater design manual.

The stormwater management plan must ensure that the requirements and criteria in this ordinance are being complied with and that opportunities are being taken to minimize adverse post-development stormwater runoff impacts from the development. The plan shall consist of maps, narrative, and supporting design calculations (hydrologic and hydraulic) for the proposed stormwater management system. The plan shall include all of the information required in the Stormwater Management Site Plan checklist found in the stormwater design manual. This includes:

A. Common address and legal description of site

B. Vicinity Map

C. Existing Conditions Hydrologic Analysis

The existing condition hydrologic analysis for stormwater runoff rates, volumes, and velocities, which shall include: a topographic map of existing site conditions with the drainage basin boundaries indicated; acreage, soil types and land cover of areas for each subbasin affected by the project; all perennial and intermittent streams and other surface water features; all existing stormwater conveyances and structural control facilities; direction of flow and exits from the site; analysis of runoff provided by off-site areas upstream of the project site; and methodologies, assumptions, site parameters and supporting design calculations used in analyzing the existing conditions site hydrology. For redevelopment sites, predevelopment conditions shall be modeled using the established guidelines for the portion of the site undergoing land development activities.

D. Post-Development Hydrologic Analysis

The post-development hydrologic analysis for stormwater runoff rates, volumes, and velocities, which shall include: a topographic map of developed site conditions with the post-development drainage basin boundaries indicated; total area of post-development impervious surfaces

and other land cover areas for each subbasin affected by the project; calculations for determining the runoff volumes that need to be addressed for each subbasin for the development project to meet the post-development stormwater management performance criteria in Section 9.10.4; location and boundaries of proposed natural feature protection and conservation areas; documentation and calculations for any applicable site design credits that are being utilized; methodologies, assumptions, site parameters and supporting design calculations used in analyzing the existing conditions site hydrology. If the land development activity on a redevelopment site constitutes more than 50 percent of the site area for the entire site, then the performance criteria in Section 9.10.4 must be met for the stormwater runoff from the entire site.

E. Stormwater Management System

The description, scaled drawings and design calculations for the proposed post-development stormwater management system, which shall include: A map and/or drawing or sketch of the stormwater management facilities, including the location of nonstructural site design features and the placement of existing and proposed structural stormwater controls, including design water surface elevations, storage volumes available from zero to maximum head, location of inlet and outlets, location of bypass and discharge systems, and all orifice/restrictor sizes; a narrative describing how the selected structural stormwater controls will be appropriate and effective; cross-section and profile drawings and design details for each of the structural stormwater controls in the system, including supporting calculations to show that the facility is designed according to the applicable design criteria; a hydrologic and hydraulic analysis of the stormwater management system for all applicable design storms (including stage-storage or outlet rating curves, and inflow and outflow hydrographs); documentation and supporting calculations to show that the stormwater management system adequately meets the post-development stormwater management performance criteria in Section 9.10.4; drawings, design calculations, elevations and hydraulic grade lines for all existing and proposed stormwater conveyance elements including stormwater drains, pipes, culverts, catch basins, channels, swales and areas of overland flow; and where applicable, a narrative describing how the stormwater management system corresponds with any watershed protection plans and/or local greenspace protection plan.

F. Post-Development Downstream Analysis

A downstream peak flow analysis that includes the assumptions, results and supporting calculations to show safe passage of post-development design flows downstream. The analysis of downstream conditions in the report shall address each and every point or area along the project site's boundaries at which runoff will exit the property. The analysis shall focus on the portion of the drainage channel or watercourse immediately downstream from the project. This area shall extend downstream from the project to a point in the drainage basin where the project area is ten (10)

percent of the total basin area. In calculating runoff volumes and discharge rates, consideration may need to be given to any planned future upstream land use changes. The analysis shall be in accordance with the stormwater design manual.

G. Construction-Phase Erosion and Sedimentation Control Plan

An erosion and sedimentation control plan in accordance with the Buford Erosion and Sedimentation Control Ordinance and NPDES Permit for Construction Activities. The plan shall also include information on the sequence/phasing of construction and temporary stabilization measures and temporary structures that will be converted into permanent stormwater controls.

H. Landscaping and Open Space Plan

A detailed landscaping and vegetation plan describing the woody and herbaceous vegetation that will be used within and adjacent to stormwater management facilities and practices. The landscaping plan must also include: the arrangement of planted areas, natural and greenspace areas and other landscaped features on the site plan; information necessary to construct the landscaping elements shown on the plan drawings; descriptions and standards for the methods, materials and vegetation that are to be used in the construction; density of plantings; descriptions of the stabilization and management techniques used to establish vegetation; and a description of who will be responsible for ongoing maintenance of vegetation for the stormwater management facility and what practices will be employed to ensure that adequate vegetative cover is preserved.

I. Operations and Maintenance Plan

Detailed description of ongoing operations and maintenance procedures for stormwater management facilities and practices to ensure their continued function as designed and constructed or preserved. These plans will identify the parts or components of a stormwater management facility or practice that need to be regularly or periodically inspected and maintained, and the equipment and skills or training necessary. The plan shall include an inspection and maintenance schedule, maintenance tasks, and responsible parties for maintenance, funding, access and safety issues. Provisions for the periodic review and evaluation of the effectiveness of the maintenance program and the need for revisions or additional maintenance procedures shall be included in the plan.

J. Maintenance Access Easements

The applicant must ensure access from public right-of-way to stormwater management facilities and practices requiring regular maintenance at the site for the purpose of inspection and repair by securing all the maintenance access easements needed on a permanent basis. Such access shall be sufficient for all necessary equipment for maintenance activities. Upon final inspection and approval, a plat or document indicating that such easements exist shall be recorded and shall remain in effect even with the transfer of title of the property.

K. Inspection and Maintenance Agreements

Unless an on-site stormwater management facility or practice is dedicated to and accepted by the City as provided in Section 9.10.3(c) below, the applicant must execute an easement and an inspection and maintenance agreement binding on all subsequent owners of land served by an on-site stormwater management facility or practice in accordance Section 9.10.3(c).

L. Evidence of Acquisition of Applicable Local and Non-local Permits

The applicant shall certify and provide documentation to the City that all other applicable environmental permits have been acquired for the site prior to approval of the stormwater management plan.

M. Estimate of Plan Annual Maintenance Costs

For projects requiring a Stormwater Management Inspection and Maintenance Agreement, the applicant must provide an estimate of the annual maintenance cost of the Stormwater Management System defined in the Stormwater Management Plan. Sufficient detail must be provided to allow the City to have reasonable confidence that the estimate is a realistic statement of probable costs.

9.10.3.3. Stormwater Management Inspection and Maintenance Agreements

Prior to the issuance of any permit for a land development activity requiring a stormwater management system hereunder and for which the City requires ongoing maintenance, the applicant or owner of the site must, unless an on-site stormwater management facility or practice is dedicated to and accepted by the City, execute an inspection and maintenance agreement, and/or a conservation easement, if applicable, that shall be binding on all subsequent owners of the site. For purposes of this ordinance, all projects, except exempt projects and single family developments, are required to execute an inspection and maintenance agreement.

The inspection and maintenance agreement, if applicable, must be approved by the City prior to plan approval, and recorded in the deed records upon final plat approval.

The inspection and maintenance agreement shall identify by name or official title the person(s) responsible for carrying out the inspection and maintenance. Responsibility for the operation and maintenance of the stormwater management facility or practice, unless assumed by a governmental agency, shall remain with the property owner and shall pass to any successor owner. If portions of the land are sold or otherwise transferred, legally binding arrangements shall be made to pass the inspection and maintenance responsibility to the appropriate successors in title. These arrangements shall designate for each portion of the site, the person to be permanently responsible for its inspection and maintenance.

As part of the inspection and maintenance agreement, a schedule shall be developed for when and how often routine inspection and maintenance will occur to ensure proper function of the stormwater management facility or practice. The agreement shall also include plans for annual inspections to ensure proper performance of the facility between scheduled maintenance and shall also include remedies for the default thereof.

In addition to enforcing the terms of the inspection and maintenance agreement, the City may also enforce all of the provisions for ongoing inspection and maintenance in Section 9.10.6 of this ordinance.

For single family developments the City will accept dedication of any existing or future stormwater management facility for maintenance, provided such facility meets all the requirements of this ordinance and includes adequate and perpetual access and sufficient area, by easement or otherwise, for inspection and regular maintenance.

9.10.3.4. Performance Maintenance Bond

After the acceptance of a Final Plat for a development and prior to the issuance of the first Certificate of Occupancy for a development, the owner shall provide the City a performance maintenance bond to assure the faithful performance of all maintenance defined by the approved Stormwater Management Plan. The term of the bond shall be five years from the date the bond is accepted by the City. The amount of the bond shall be not less than the Estimate of Plan Annual Maintenance Costs provided as a part of the Stormwater Management Plan application.

The bond is to be payable to the City, be with surety by a company entered and licensed to do business in the State of Georgia and be acceptable to the City Manager.

The City may accept, in lieu of a performance maintenance bond as set forth in this Section, a letter of credit issued from a bank located within the metropolitan Atlanta area and licensed to do business in the State of Georgia. The term and amount of the letter credit shall be the same as a performance maintenance bond. The letter of credit shall be payable to the City.

9.10.3.5. Application Procedure

(1) Applications for land development permits shall be filed with the City.

(2) Permit applications shall include the items set forth in Section 9.10.3(a) above. Provide three copies of the stormwater management plan and the inspection maintenance agreement, if applicable.

(3) The City shall inform the applicant whether the application, stormwater management plan and inspection and maintenance agreement, if applicable, are approved or disapproved.

(4) If the permit application, stormwater management plan or inspection and maintenance agreement are disapproved, the City will notify the applicant of such fact in writing. The applicant may then revise any item not meeting the requirements hereof and resubmit the same, in which event subparagraph 3 above and this subparagraph shall apply to such resubmittal.

(5) Upon a finding by the City that the permit application, stormwater management plan and inspection and maintenance agreement, if applicable, meet the requirements of this ordinance, the City may issue a permit for the land development project, provided all other legal requirements for the issuance of such permit have been met.

(6) Notwithstanding the issuance of the permit, in conducting the land development project, the applicant or other responsible person shall be subject to the following requirements:

a. The applicant shall comply with all applicable requirements of the approved plan and this ordinance and shall certify that all land clearing, construction, land development and drainage will be done according to the approved plan;

b. The land development project shall be conducted only within the area specified in the approved plan;

c. The City shall be allowed to conduct periodic inspections of the project;

d. No changes may be made to an approved plan without review and written approval by the City; and,

e. Upon completion of the project, the applicant or other responsible person shall submit the engineer's report and certificate and as-built plans required by Section 9.10.5(b).

9.10.3.7. Application Review Fees

The fee for review of any stormwater management application shall be based on the fee structure established by the City and shall be paid at the time the application or any resubmittal of the application, in part or in whole, is submitted to the City.

9.10.3.8 Modifications for Off-Site Facilities

The stormwater management plan for each land development project shall provide for stormwater management measures located on the site of the project, unless provisions are made to manage stormwater by an off-site or regional

facility. The off-site or regional facility must be located on property legally dedicated for the purpose, must be designed and adequately sized to provide a level of stormwater quantity and quality control that is equal to or greater than that which would be afforded by on-site practices and there must be a legally-obligated entity responsible for long-term operation and maintenance of the off-site or regional stormwater facility. In addition, on-site measures shall be implemented, where necessary, to protect upstream and downstream properties and drainage channels from the site to the off-site facility.

A stormwater management plan must be submitted to the City that shows the adequacy of the off-site or regional facility.

To be eligible for a modification, the applicant must demonstrate to the satisfaction of the City that the use of an off-site or regional facility will not result in the following impacts to upstream or downstream areas:

(1) Increased threat of flood damage to public health, life, and property;

(2) Deterioration of existing culverts, bridges, dams, and other structures;

(3) Accelerated streambank or streambed erosion or siltation;

(4) Degradation of in-stream biological functions or habitat; or

(5) Water quality impairment in violation of State water quality standards, and/or violation of any state or federal regulations.

9.10. 4. Post-Development Stormwater Management Performance Criteria

The following performance criteria shall be applicable to all stormwater management plans, unless otherwise provided for in this ordinance:

9.10.4.1. Water Quality

All stormwater runoff generated from a site shall be adequately treated before discharge. It will be presumed that a stormwater management system complies with this requirement if:

(1) It is sized to treat the prescribed water quality treatment volume from the site, as defined in the Gwinnett County Stormwater Design Manual;

(2) Appropriate structural stormwater controls or nonstructural practices are selected, designed, constructed or preserved, and maintained according to the specific criteria in the Gwinnett County Stormwater Design Manual; and,

(3) Runoff from hotspot land uses and activities identified by the City are adequately treated and addressed through the use of appropriate structural stormwater controls, nonstructural practices and pollution prevention practices.

9.10.4.2. Stream Channel Protection

Protection of stream channels from bank and bed erosion and degradation shall be provided by using all of the following three approaches:

(1) Preservation, restoration and/or reforestation (with native vegetation) of the applicable stream buffer;

(2) 24-hour extended detention storage of the 1-year, 24-hour return frequency storm event;

(3) Erosion prevention measures such as energy dissipation and velocity control.

9.10.4.3. Overbank Flooding Protection

Downstream overbank flood and property protection shall be provided by controlling (attenuating) the post-development peak discharge rate to the pre-development rate for the 25-year, 24-hour return frequency storm event. If control of the 1-year, 24-hour storm under Section 9.10.4(b) is exempted, then peak discharge rate attenuation of the 2-year through the 25-year return frequency storm event must be provided. This requirement shall not apply for sites where the post-development downstream analysis, acceptable to the City, shows that uncontrolled post-development conditions will not increase downstream peak flows, or that meeting the requirement will cause greater peak flow downstream impacts than the uncontrolled post-development conditions.

9.10.4.4. Extreme Flooding Protection

Extreme flood and public safety protection shall be provided by controlling and safely conveying the 100-year, 24 hour return frequency storm event such that flooding is not exacerbated. This requirement shall not apply for sites where the post-development downstream analysis, acceptable to the City, shows that uncontrolled post-development conditions will not increase downstream peak flows, or that meeting the requirement will cause greater peak flow downstream impacts than the uncontrolled post-development conditions.

9.10.4.5. Structural Stormwater Controls

All structural stormwater management facilities shall be selected and designed using the appropriate criteria from the Gwinnett County Stormwater Design Manual. All structural stormwater controls must be designed appropriately to meet their intended function. For other structural stormwater controls not included in the Gwinnett County Stormwater Design Manual, or for which

pollutant removal rates have not been provided, the effectiveness and pollutant removal of the structural control must be documented through prior studies, literature reviews, or other means and receive approval from City before being included in the design of a stormwater management system. In addition, if hydrologic or topographic conditions, or land use activities warrant greater control than that provided by the minimum control requirements, the City may impose additional requirements deemed necessary to protect upstream and downstream properties and aquatic resources from damage due to increased volume, frequency, and rate of stormwater runoff or increased nonpoint source pollution loads created on the site in question.

Applicants shall consult the Gwinnett County Stormwater Design Manual for guidance on the factors that determine site design feasibility when selecting and locating a structural stormwater control.

9.10.4.6. Stormwater Credits for Nonstructural Measures

The use of one or more site design measures by the applicant may allow for a reduction in the water quality treatment volume required under Section 9.10.4(a). The applicant may, if approved by the City, take credit for the use of stormwater better site design practices and reduce the water quality volume requirement. For each potential credit, there is a minimum set of criteria and requirements that identify the conditions or circumstances under which the credit may be applied. The site design practices that qualify for this credit and the criteria and procedures for applying and calculating the credits are included in the Gwinnett County Stormwater Design Manual.

9.10.4.7. Drainage System Guidelines

Stormwater conveyance facilities, which may include but are not limited to culverts, stormwater drainage pipes, catch basins, drop inlets, junction boxes, headwalls, flared end sections, gutters, swales, channels, ditches, and energy dissipaters, shall be provided when necessary for the protection of public right-of-way and private properties adjoining project sites and/or public rights-of-way. Stormwater conveyance facilities that are designed to carry runoff from more that one parcel, existing or proposed, shall meet the following requirements:

(1) Methods to calculate stormwater flows shall be in accordance with the stormwater design manual;

(2) All culverts, pipe systems and open channel flow systems shall be sized in accordance with the stormwater management plan using the methods included in the stormwater design manual; and,

(3) Design and construction of stormwater conveyance facilities shall be in accordance with the criteria and specifications found in the stormwater design manual.

9.10.4.8. Dam Design Guidelines

Any land disturbing activity that involves a site that proposes a dam shall comply with the Georgia Safe Dams Act and Rules for Dam Safety as applicable.

9.10.5. Construction Inspections of Post-Development Stormwater Management System

9.10.5.1. Inspections to Ensure Plan Compliance During Construction

Periodic inspections of the stormwater management system construction shall be conducted and certified by a Georgia licensed professional engineer retained and paid by the applicant. Construction inspections shall utilize the approved stormwater management plan for establishing compliance.

All inspections shall be documented with written reports, made available to the City when requested, that contain the following information:

(1) The name and professional engineer's license number of the individual certifying the inspection;

(2) The date and location of the inspection;

(3) Whether construction is in compliance with the approved stormwater management plan;

(4) Variations from the approved construction specifications; and,

(5) Any other variations or violations of the conditions of the approved stormwater management plan.

If any violations are found, the applicant shall be notified in writing of the nature of the violation and the required corrective actions. In addition to the inspections conducted by the applicant's engineer, the City may conduct periodic inspections to determine compliance with the approved stormwater management plan.

9.10.5.2. Final Inspection and As Built Plans

Upon completion of a project, and before a certificate of occupancy shall be granted, the applicant is responsible for certifying that the completed project is in accordance with the approved stormwater management plan. All applicants are required to submit actual "as built" plans for any stormwater management facilities or practices after each phase of construction is completed. The plan must show the final design specifications for all stormwater management facilities

and practices and must be certified by a Professional Engineer. A final inspection by the City is required before the release of any performance securities can occur.

9.10. 6. Ongoing Inspection and Maintenance of Stormwater Facilities and Practices

9.10.6.1. Long-Term Maintenance Inspection of Stormwater Facilities and Practices

Stormwater management facilities and practices included in a stormwater management plan which are subject to an inspection and maintenance agreement must undergo ongoing inspections to document maintenance and repair needs and ensure compliance with the requirements of the agreement, the plan and this ordinance.

A stormwater management facility or practice shall be inspected on a periodic basis by the responsible person in accordance with the approved inspection and maintenance agreement. In the event that the stormwater management facility has not been maintained and/or becomes a danger to public safety or public health, the City shall notify the person responsible for carrying out the maintenance plan by registered or certified mail to the person specified in the inspection and maintenance agreement. The notice shall specify the measures needed to comply with the agreement and the plan and shall specify the time within which such measures shall be completed. If the responsible person fails or refuses to meet the requirements of the inspection and maintenance agreement, the City, may correct the violation as provided in Subsection 9.10.6(d) hereof.

Inspection programs by the City may be established on any reasonable basis, including but not limited to: routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in stormwater management facilities; and evaluating the condition of stormwater management facilities and practices.

9.10.6.2. Right-of-Entry for Inspection

The terms of the inspection and maintenance agreement shall provide for the City to enter the property at reasonable times and in a reasonable manner for the purpose of inspection. This includes the right to enter a property when it has a reasonable basis to believe that a violation of this ordinance is occurring or has occurred and to enter when necessary for abatement of a public nuisance or correction of a violation of this ordinance.

9.10.6.3. Records of Maintenance Activities

Parties responsible for the operation and maintenance of a stormwater management facility shall provide records of all maintenance and repairs to the City.

9.10.6.4. Failure to Maintain

If a responsible person fails or refuses to meet the requirements of the inspection and maintenance agreement, the City, after thirty (30) days written notice (except, that in the event the violation constitutes an immediate danger to public health or public safety, twenty four (24) hours notice shall be sufficient), may correct a violation of the design standards or maintenance requirements by performing the necessary work to place the facility or practice in proper working condition. The City may obtain reimbursement under a performance maintenance bond or letter of credit where such instruments are available or may assess the owner(s) of the facility for the cost of repair work that shall be a lien on the property, and may be placed on the ad valorum tax bill for such property and collected in the ordinary manner for such taxes.

9.10.7. Violations, Enforcement and Penalties

Any action or inaction which violates the provisions of this ordinance or the requirements of an approved stormwater management plan or permit, may be subject to the enforcement actions outlined in this Section. Any such action or inaction which is continuous with respect to time is deemed to be a public nuisance and may be abated by injunctive or other equitable relief. The imposition of any of the penalties described below shall not prevent such equitable relief. The imposition of any of the penalties described below shall not prevent such equitable relief.

9.10.7.1. Notice of Violation

If the City determines that an applicant or other responsible person has failed to comply with the terms and conditions of a permit, an approved stormwater management plan or the provisions of this ordinance, it shall issue a written notice of violation to such applicant or other responsible person. Where a person is engaged in activity covered by this ordinance without having first secured a permit therefore, the notice of violation shall be served on the owner or the responsible person in charge of the activity being conducted on the site.

The notice of violation shall contain:

(1) The name and address of the owner or the applicant or the responsible person;

(2) The address or other description of the site upon which the violation is occurring;

(3) A statement specifying the nature of the violation;

(4) A statement requiring the person to whom the notice of violation is directed to develop and implement a plan of the remedial measures necessary to bring the action or inaction into compliance with the permit, the stormwater management plan or this ordinance and the date for the completion of such remedial action;

(5) A statement of the penalty or penalties that may be assessed against the person to whom the notice of violation is directed; and,

(6) A statement that the determination of violation may be appealed to the City by filing a written notice of appeal within thirty (30) days after the notice of violation, except, that in the event the violation constitutes an immediate danger to public health or public safety, twenty four (24) hours notice shall be sufficient.

9.10.7.2 Penalties

In the event the remedial measures described in the notice of violation have not been completed by the date set forth for such completion in the notice of violation, any one or more of the following actions or penalties may be taken or assessed against the person to whom the notice of violation was directed. Before taking any of the following actions or imposing any of the following penalties, the City shall first notify the applicant or other responsible person in writing of its intended action, and shall provide a reasonable opportunity, of not less than ten (10) days, except, that in the event the violation constitutes an immediate danger to public health or public safety, twenty four (24) hours notice shall be sufficient, to cure such violation. In the event the applicant or other responsible person fails to cure such violation after such notice and cure period, the City may take any one or more of the following actions or impose any one or more of the following penalties.

(1) **Stop Work Order** -The City may issue a stop work order that shall be served on the applicant or other responsible person. The stop work order shall remain in effect until the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violation or violations described therein, provided the stop work order may be withdrawn or modified to enable the applicant or other responsible person to take the necessary remedial measures to cure such violation or violations.

(2) **Withhold Certificate of Occupancy -** The City may refuse to issue a certificate of occupancy for the building or other improvements

constructed or being constructed on the site until the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violations described therein.

(3) **Suspension, Revocation or Modification of Permit -** The City may suspend, revoke or modify the permit authorizing the land development project. A suspended, revoked or modified permit may be reinstated after the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violations described therein, provided such permit may be reinstated upon such conditions as the City may deem necessary to enable the applicant or other responsible person to take the necessary remedial measures to cure such violations.

(4) **Civil Penalties -** In the event the applicant or other responsible person fails to develop and implement the remedial measures required in the notice of violation or otherwise fails to cure the violations described therein within ten (10) days, or such greater period as the City shall deem appropriate, except, that in the event the violation constitutes an immediate danger to public health or public safety, twenty four (24) hours notice shall be sufficient, after the City has taken one or more of the actions described above, the City may impose a penalty not to exceed $1,000 (depending on the severity of the violation) for each day the violation remains unremedied after receipt of the notice of violation.

(5) **Criminal Penalties -** For intentional and flagrant violations of this ordinance, the City may issue a citation to the applicant or other responsible person, requiring such person to appear in City court to answer charges for such violation. Upon conviction, such person shall be punished by a fine not to exceed $1,000 or imprisonment for sixty (60) days or both. Each act of violation and each day upon which any violation shall occur shall constitute a separate offense.

9.10.8. Effective Date

This ordinance shall take effect immediately upon its adoption by the City Commission.