

CITY OF CARTERSVILLE

DEVELOPMENT REGULATIONS

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CITY OF CARTERSVILLE
PLANNING & DEVELOPMENT

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ARTICLE I. IN GENERAL

Sec. 7.5-1. Title.

These regulations shall be known as "The City of Cartersville Development Regulations," and may be referred to generally as "the development regulations," or as used herein, "these regulations."
(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-2. Purpose.

These regulations are intended to serve the following purposes:

- (a) To protect and promote the public health, safety, and general welfare.
 - (b) To provide a system for the subdividing of land and the accurate recording of land titles.
 - (c) To encourage economically sound and orderly land development in accordance with the policies and objectives of the comprehensive plan of the city.
 - (d) To assure the provision of required streets, utilities, and other facilities and services to new land developments in the city.
 - (e) To assure the adequate provision of safe and convenient traffic access and circulation, both vehicular and pedestrian, in new land developments in the city.
 - (f) To assure the provision of needed public open spaces and building sites in new land developments in the city through the dedication or reservation of land for recreational, educational, and other public purposes.
 - (g) To assure protection of streams, waterways, and wetlands within the city.
 - (h) To assure equitable review and approval of all subdivision and site plans by providing uniform procedures and standards for the developer.
- (Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-3. Intent.

The intent and purpose of these regulations is to provide for the harmonious development of the city and to insure a coordinated layout with adequate provisions for traffic, recreation, drainage, sewers and other technical elements of land development. This control is necessary to assure the maximum return on the local and government investments and at the same time to assure the homeowner protection and the developer full consideration of his interests and responsibilities.
(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-4. Use of words and interpretation.

- (1) For the purpose of these regulations, the following shall apply to the use of all words:
 - (a) When appropriate to the context, words used in the singular shall include the plural, and the plural the singular; words used in the present tense shall include the future tense, and vice versa.
 - (b) Words in the masculine gender shall include the feminine.
 - (c) The word "shall" is mandatory and not discretionary.
 - (d) The word "may" is permissive.
 - (e) Use of the word "and" is inclusive and requires that all of the component phrases so connected must be present or fulfilled for sufficiency.
 - (f) Use of the word "or" is not exclusive, and requires that at least one (1) of the component phrases so connected must be present or fulfilled for sufficiency. The word "or" may allow more than one (1) component phrase to be present or fulfilled, as is implied by the common term "and/or."
- (2) The following shall control the interpretation of words and phrases as used in these regulations:
 - (a) Words and phrases defined in these regulations shall be interpreted as defined herein.

(b) Words or phrases not defined herein shall be interpreted as defined in other ordinances and codes of the city. Words or phrases not defined in the above mentioned documents shall have their customary dictionary definitions where not inconsistent with the context.
(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-5. Administration.

These regulations shall be administered, interpreted, and enforced by the directors of the departments responsible for said regulations as established by the mayor and city council.
(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-6. Platting authority.

From and after the effective date of this chapter, the city manager or his/her designated representative(s) shall be the official subdivision platting authority, and no plat of a land subdivision as defined in these specifications shall be entitled to be recorded in the office of the Clerk of the Superior Court of Bartow County unless it has the approval of the zoning administrator or his/her designated representative inscribed thereon. Whoever files or records or procures the filing or recording of a plat of a subdivision by any employee of the clerk of the superior court, with intent to deceive or to evade these standards and regulations, without the approval of the city for such plat as required by this chapter, shall be guilty of a misdemeanor and may suffer such penalties as may be imposed pursuant to this chapter.
(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-7. Use of plat.

The transfer, sale, agreement to sell, or negotiation to sell land by reference to, exhibition of, or other use of a plat of a subdivision as defined in these specifications that has not been approved by the city and recorded in the office of the Clerk of the Superior Court of Bartow County is prohibited, and the description by metes and bounds in the instrument of transfer or other document shall not exempt the transaction from such penalties.
(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-8. Erection of buildings.

No building permit shall be issued and no building shall be erected on any lot in an incorporated area of the city in which building permits are required by the city, unless the street giving access thereto has been inspected and approved in accordance with this chapter.
(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-9. Regulations to be published.

It shall be the duty and responsibility of the director of the department of community development or his/her designee to maintain an accurate and up-to-date compilation of these regulations and all amendments and pertinent attachments thereto, and to publish said compilation and make it available to the public at a cost as established by the mayor and city council.
(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-10. Variances and appeals.

(1) Whenever a tract of land to be developed is of such unusual size, topography or shape or is surrounded by such development or has unusual conditions affecting said development that the strict application of the requirements contained in this chapter would result in substantial hardship or injustice, the city board of zoning appeals may vary or modify such requirements so that the subdivider may develop his land in a reasonable manner, whereby, at the same time, the public welfare and interests of the city are protected and the general intent and spirit of this chapter preserved.

(2) Variance requests of the requirements of these regulations or appeals regarding the interpretation of these regulations by the director of the city department who enforces the regulations of a specific article of these regulations shall be submitted in accordance with the appeal procedures set forth in the city zoning ordinance along with such fees as established therein.

(3) The fee assessed pursuant to this section is as referenced on the fee schedule in the City of Cartersville Code, section 17-90(a).

(Ord. No. 32-98, § 1, 8-27-98; Ord. No. 45-05, § 4, 7-7-05)

Sec. 7.5-11. Appeals of decisions by the board of zoning appeals.

Recourse from the decisions made by the board of zoning appeals shall be to a court of competent jurisdiction.

(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-12. Jurisdiction, violations, and penalties.

These regulations shall govern all developments of land within the incorporated areas of the City of Cartersville, Georgia, as now or hereafter established, and shall govern all undeveloped units of existing subdivision.

Any person, firm, corporation or any agent, servant, employee, officer or contractor for any person, firm or corporation who shall violate any provision, requirement, term or condition of this chapter shall be guilty of a misdemeanor and each day of such violation shall constitute a separate offense.

Any violation of any provision, requirement, term or condition of this chapter shall constitute a nuisance and any person aggrieved thereby may abate the same or the same may be abated as a public nuisance. Continuous violation thereof may be restrained in a court of equity having jurisdiction thereof.

(a) *Stop work orders.* The director of each city department addressed in these regulations or his/her designated representative is hereby authorized and directed to issue "stop work" orders in writing on any project when the person or persons responsible therefore shall fail or refuse to comply with any ordinance or regulation, including these standards, pertaining to any matter contained in these standards. Such "stop work" orders may be lifted at such time as the city is satisfied that a good faith determination to comply is being made. A written order is not required from the city where an emergency exists.

(b) *Penalties.* Any person who violates any provision of these standards and any rules and regulations adopted pursuant thereto, or any permit, condition or limitation established pursuant to these standards, rules or regulations, or who negligently or intentionally fails or refuses to comply with any order of the city shall be liable for a civil penalty not to exceed one thousand dollars (\$1,000.00) per day. Each day during which the violation or failure or refusal to comply continues shall be a separate violation.

(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-13. Effective date.

(1) These regulations shall be in full force and effect on August 28, 1998, following the adoption by the mayor and city council of the city, and shall apply to any land disturbance permit for which an application is received after the effective date of these regulations.

(2) Any subdivision or other project for which a valid and complete application for a land disturbance permit shall have been received or a preliminary plat has been submitted for approval prior to the effective date of these regulations shall be considered nonconforming and, at the developer's option, may proceed to completion and building permits may be issued under the subdivision regulations of the city in place prior to the effective date of these regulations.

(3) Nothing in these regulations shall be construed to affect the validity of any building permit lawfully issued prior to the effective date of these regulations.

(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-14. Amendments.

(1) These regulations may be amended from time-to-time by the mayor and city council provided that public due process is provided. Such amendments shall be effective as of their date of adoption unless otherwise stated in the adopting ordinance.

(2) No amendment to these regulations shall be construed to affect the validity of any building permit lawfully issued prior to the adoption of said amendment.

(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-15. Severability.

It is the intent of the mayor and city council of the city in adopting this regulation that all portions hereof, are constitutional. However, no provision of the regulation contained herein, shall become inoperative or fail by reason of the unconstitutionality or invalidity of any section, subsection, sentence, clause, phrase, or provision of this chapter.

(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-16. Conflicting regulations.

Whenever the provisions of this chapter and those of some other ordinance or statute apply to the same subject matter, that ordinance, or statute requiring the highest, or strictest standard shall govern.

(Ord. No. 32-98, § 1, 8-27-98)

Secs. 7.5-17--7.5-30. Reserved.

ARTICLE II. PLAN REVIEW AND GENERAL REQUIREMENTS

Sec. 7.5-31. Plan review procedure.

(1) *Types of developments.* Plan review procedures are dependent on the type of the proposed development. There are three (3) types of developments as follows:

- (a) Subdivision developments (residential, commercial, and industrial) involving the subdividing of a tract or parcel of land into two (2) lots or building sites;
- (b) Subdivision developments (residential, commercial, and industrial) involving the subdividing of a tract or parcel of land into three (3) or more lots or building sites; and
- (c) Non-subdivision commercial/industrial developments.

(2) *Stages of subdivision development plans review.* Plan design, submittal, and review are divided into four (4) stages which correspond to the following four (4) types of plans:

(a) *Preliminary plat:* Conceptual street and lot layout of subdivision with topography of not more than two-foot intervals. A plat review fee as indicated in City of Cartersville Code, section 17-78 shall be required at the time of submittal. No less than fifteen (15) working days prior to the next regular meeting of the planning commission, a letter addressed to the planning commission requesting review and approval of a preliminary plat shall be given to the community development department along with seven (7) copies of the plat to be distributed as follows: Water department (two (2) plat copies); public works (two (2) plat copies); electric (one (1) plat copy); gas (one (1) plat copy); community development (one (1) plat copy). Upon approval of the plat by individual departments, seven (7) copies of the approved plat stamped by each department shall be submitted to the department of community development to be distributed to the City of Cartersville Planning Department for approval. Approval of a preliminary plat shall expire and be null and void after a period of twenty-four (24) months from the date of approval unless an extension of time is approved by the planning commission. (A preliminary plat shall not be required of subdivisions on an existing street involving only two (2) lots or building sites.

Information to be provided. Preliminary subdivision plats shall contain the following information:

- 1. Subdivision name.
- 2. Name, address and twenty-four-hour phone number of developer.
- 3. Date including most recent revision date.
- 4. Graphic scale (not to exceed one (1) inch = one hundred (100) feet)
- 5. Location index map (approximate scale one (1) inch = six thousand (6,000) feet).
- 6. North arrow.
- 7. Land lot, district and section.
- 8. Maximum sheet size twenty-four (24) inches × thirty-six (36) inches unless otherwise approved.
- 9. Exact boundary lines of the entire tract indicated by a heavy line giving lengths and bearings.
- 10. Present zoning and zoning of abutting land.
- 11. Proposed street and lot layout.
- 12. Proposed street names.
- 13. Lot lines with approximate dimensions.
- 14. Location of bold lines for phased developments.
- 15. Lots numbered consecutively disregarding phasing.
- 16. General notes on the plat stating total project acreage, total number of lots and lot density, minimum size of lots, minimum lot width and frontage, and required setbacks for present zoning.
- 17. Existing streets, utilities, and easements on and adjacent to the tract.
- 18. Provisions for water supply, sewerage, and drainage.
- 19. Location of 100-year floodplain or statement that no part of the property lies within the 100-year floodplain.
- 20. Minimum building front yard setback line shown graphically on the plat.
- 21. Surveyors and/or engineer's stamp.
- 22. Signature statement for planning commission. Statement shall read as follows:
- 23. Any and all other information as may be required by the city.
- 24. Names of owners of record of adjoining properties.

Preliminary Plat
Approval Certificate

All requirements of the City of Cartersville Development Regulations relative to the preparation and submission of a Preliminary Plat having been fulfilled, approval of this plat is hereby granted subject to further provisions of said Regulations. This certificate is effective for 24 months from the date of signing unless a Final Plat is recorded.

TABLE INSET:

_____	_____
Planning Commission Chairman	Date

(b) *Construction Plans* - detailed design plans of proposed subdivision infrastructure improvements. Eleven (11) sets of the construction plans shall be submitted to the Department of Community Development to be distributed as follows: Water Department (3 sets); Electric (1 set); Gas (1 set); Public Works (1 set); Community Development (1 set); Developer (4 sets). Upon approval of the plans, a stamped approved copy shall be given to each department and the developer sets up a pre-construction conference with the contractor(s) and the city departments mentioned herein. If any construction activity involves a state right-of-way, the developer must first contact Public Works and obtain Georgia D.O.T. approval before construction plans can be approved by the city.

a. Information to be Provided.

Construction Plans shall contain the following information:

Road Design

1. Acceleration /deceleration lanes at entrance
2. Typical road section for all roads
3. Dimensions of turn radii.
4. Plan and profile of existing city or county road at proposed entrance with the City of Cartersville’s minimum horizontal and vertical stopping sight distance requirements satisfied. The speed limit for the existing city or county road shall be shown.
5. If additional right-of-way is required to bring the City Road up to minimum standards, as shown on the current City Street Classification Map, the future right-of-way shall be shown on the plan. Set backs shall be measured from the future right-of-way.
6. Proposed street profiles for all new streets.
7. Proposed street grades.
8. Proposed length of vertical curves.
9. Vertical stopping sight distance at all proposed internal subdivision intersections.
10. Street Horizontal curve radii.
11. All radii, curb setbacks and taper details.
12. Typical construction detains (curb and gutter, paving, etc.)
13. Street signs.

Storm Drainage

1. Topographic layout of development at two (2) foot contour intervals based on mean sea level datum with storm drain layout.
2. Location, size, ad length of existing drainage structures with drainage area.
3. Description by registered engineer of downstream property showing the method of runoff control will not adversely affect the property downstream.
4. Location, size, length, and type of all proposed drainage structures.
5. Drainage area to each inlet point of the drainage system.
6. Ditch profiles.
7. Ditch cross-sections every (50) feet with velocity of runoff (no more than 5.0 fps without lining the ditch.)

8. Hydrology study by a state approved professional for detention ponds, if required.
9. The 100-year floodplain limits and elevation or note absence.
10. Profile of storm drainage pipes.
11. All cross-drain pipes shown on the street profiles.
12. Water travel distance between catch basins.
13. Drainage at intersections indicated by flow arrows on plan sheet.
14. All drainage structure outlets to be erosion proofed.
15. Method of sizing all storm drainage structures.
16. Easements for drainage system – minimum of ten (10) feet for piped runoff, minimum of twenty (20) feet for open ditches.
17. Dam breach zone shown if an existing or proposed permanent pond/lake is a part of the proposed subdivision.
18. Cul-de-sac grading detail for steep downhill cul-de-sacs.

Water Layout

1. Site plan with water layout only.
2. Pipe locations and sizes
3. Location and size of gate valves, air release valves.
4. Thrust blocks at all bends and tees.
5. Location of all existing and proposed fire hydrants.
6. Existing water main locations, sizes, and types of materials surrounding the project.
7. Detail of tap to water main.
8. Proposed meter sizes and locations.
9. Nearest existing line valves on main, in order to isolate tap.
10. Pressure flow-test results.
11. If proposed water line crosses private property, a twenty foot (20) easement is required.

Sewer Layout

1. EPD Sanitary Sewer Submittal Form filled out by registered engineer.
2. Site plan showing sewer layout.
3. Sewer layout should have manhole numbers, line designations, flow arrows, street names, and topography.
4. Sewer layout showing proposed storm drain crossings.
5. Detail tie-in of proposed lines with existing lines as to elevation and invert direction of manholes.
6. Profile of proposed sewer lines with:
7. Manhole numbers and locations.
8. Outside drop-manhole designated.
9. Percent grade, length, size of lines.
10. Lateral locations.
11. Materials to be used.
12. Location in profile of streams and storm drains.
13. Easements to be twenty (20) foot permanent and sixty (60) foot for temporary construction.
14. Easements for future sewers if required.
15. Bedding details.

Additional Requirements

1. Preliminary plat submitted with construction plans.
2. Sidewalks.
3. Show location of all wells within one hundred (100) feet of property or certify that there are no wells, if lots are served by septic tank.
4. Names of all utility companies.
5. Erosion control plan.
6. Tree protection plan.
7. Show location of any landfills or debris or garbage disposal sites on the property.
8. If there are any walls associated with the development of the site, safety measures such as fences and/or safety railings will be required.

9. Additional Notes Below:

- Notes:
1. It is the developer's responsibility to address any wetland issues to the satisfaction of the U.S. Army Corps of Engineers.
 2. It is the developer's responsibility to abide by all the rules and regulations pertaining to the State of Georgia's National Pollutant Discharge Elimination System (NPDES) permit requirements.
 3. It is the developer's responsibility to address any endangered species issues to the satisfaction of the U.S. Fish and Wildlife Service.

(c) *Erosion and sediment control plans:* A plan for the control of soil erosion and sedimentation resulting from a land-disturbing activity involving the disturbance of 1.0 acres or greater. Said plans are a part of the requirements for a land disturbance permit as addressed in article VII of these regulations. An approved copy of this plan must be provided to all departments as part of the construction plan review process.

(d) *Final plat:* Plan of a subdivision which conforms to the approved preliminary plat and the specifications required herein for recording at the clerk of superior court. Prior to the submittal of the final plat for review, the following shall apply: 1.) All street and city-owned utility (including city gas, electric, water, sewer, and fiber) construction must be completed, inspected and approved; 2.) All property corner pins must be installed; 3.) As-built drawings must be submitted; and 4.) Bonding requirements, if applicable, satisfied. Seven (7) copies of the final plat and as-built drawings shall be submitted to the department of community development to be distributed as follows: Water department (two (2) sets of each); public works (one (1) set of each); community development (one (1) set of each); gas department (one (1) set of each); electric department (one (1) set of each); and fiber department (one (1) set of each). Once the signatures of approval from the designated city departments have been obtained on the final plat, the developer shall submit the plat to the Clerk of Superior Court of Bartow County for recording. Upon recording of the final plat, the developer shall provide four (4) hard copies of the plat to the community development department. An electronic version of the final plat shall be provided in AutoCAD format to the city engineer.

Information to be provided. The final plat shall contain the following information:

1. Sheet size no larger than eighteen (18) inches × twenty-four (24) inches.
2. Exact boundary lines of the tract by bearings and distances determined by a field survey.
3. Field survey error of closure not to exceed one (1) to ten thousand (10,000).
4. Equipment used in field survey.
5. Calculated error of closure of plat.
6. Present zoning and zoning of abutting land.
7. Exact locations, R/W widths, and names of all streets that immediately adjoin the subdivision.
8. Appropriate data for all streets, lot lines, and centerlines as required by the city and according to the requirements of the State of Georgia for professional surveyors and engineers.
9. General notes on the plat stating total project acreage, total number of lots and lot density, minimum size of lots, minimum lot width and frontage, and required setbacks for present zoning.
10. Lots shall be numbered consecutively; divisions shall be made by units or phases.
11. Each lots' area in square feet or acres.
12. Deed book and page number of protective covenants if any.
13. Accurate location, material, and description of all monuments and markers.
14. Location of sidewalks.
15. Location of all easements.
16. Required buffers and recreational areas (if any).
17. Land lot lines accurately tied to the lines of the subdivision by distance and angles when such lines traverse or are reasonably close to the subdivision.
18. All surveys and plats must be prepared by a state certified engineer and /or surveyor.
19. Location of 100-year floodplain or statement that no part of the property lies within the 100-year floodplain.
20. The following certificate statements shall be shown on the plat:

Owner's Certificate:

The owner of the land shown on this plat and whose name is subscribed hereto, in person or through a duly authorized agent, certifies that this plat was made from an actual survey, that all state, city and county taxes or other assessments now due on this land have been paid, that all streets, water systems drains and drainage easements, and public places are dedicated to the use of the public forever.

TABLE INSET:

_____	_____
Owner	Date

Surveyor's Certificate:

It is hereby certified that this plat is true and correct and was prepared from an actual survey of the property by me or under my supervision, that all monuments shown hereon actually exist or are marked "future and their location, size, type and material are correctly shown, and that all requirements of the development and zoning regulations have been fully complied with.

TABLE INSET:

_____	_____
Surveyor	Date

City of Cartersville Certificate:

In accordance to the City of Cartersville Development Regulations and the City's Zoning Ordinance, all requirements of approval have been fulfilled; this plat was given final approval by the following City personnel on behalf of the City of Cartersville:

TABLE INSET:

_____	_____
Zoning Administrator	Date
_____	_____
Water Superintendent	Date
_____	_____
Gas Superintendent	Date
_____	_____
Electric Superintendent	Date
_____	_____
Fiber Superintendent	Date
_____	_____
City Engineer	Date

21. Any and all other information as required by the city.

(3) *Commercial/industrial site development plans which do not involve the subdividing of land.* Only construction plans are designed and submitted for review for this type of development. Five (5) sets of plans shall be submitted to the department of community development to be distributed as follows: water department (one (1) set); public works (one (1) set); gas (one (1) set); electric (one (1) set); and community development (one (1) set). Upon approval of the plans by individual departments, each department retains a copy of the approved stamped plans.

(4) *Plan approval.*

(a) No preliminary or final plat, or land disturbance permit, shall be approved without the written approval of the respective department head, or his/her designated representative, of the fire department, public works department, utility departments, or community development department.

(b) Approval of construction plans shall expire eighteen (18) months from the date of approval without the issuance of a building permit from the city.

(c) If a discrepancy occurs between the approved plans and the city's development standards, unless a variance or exception has been obtained, the development standards shall be the superseding document.

(Ord. No. 32-98, § 1, 8-27-98; Ord. No. 41-99, § 13, 9-16-99; Ord. No. 68-04, §§ 1--4, 9-2-04; Ord. No. 43-05, § 1, 7-7-05)

Sec. 7.5-32. Permits.

(1) *Subdivisions:* The department of community development issues the following permit for the construction of a subdivision:

A. *Land disturbance permit.* After the approval of the construction plans, this permit is issued for the implementation of erosion and sediment control measures as shown on the approved construction plans for all projects as required under article VII of this chapter.

B. *Reserved.*

(2) *Commercial/industrial sites not involving the subdividing of land:* The department of community development issues the following two (2) permits for the construction of sites:

A. *Land disturbance permit.* After the approval of the construction plans, this permit is issued for the implementation of erosion and sediment control measures as shown on the approved construction plans for all projects as required under article VII of this chapter.

B. *Building permit.* This permit is issued for the construction of proposed buildings. The building permit is issued after the site construction plans are approved, the building architectural plans are approved, and the land disturbance permit is issued (if applicable). Appropriate permit fees shall apply.

(3) *Driveway permit.* A review will be required of all new driveway cuts on a public right-of-way for the purpose of ensuring the requirements of these regulations are complied with and to determine if additional right-of-way improvements will need to be made by the property owner in order that the public right-of-way will accommodate the proposed vehicular use of said new driveway. When a building permit or land disturbance permit is required, the driveway permit will be incorporated into said permits and no additional fees will be required. When no other permits are required, as stated herein, and a new driveway cut is made, a permit fee of fifty dollars (\$50.00) will be required.

(4) *Pavement cut permit.* A permit will be required prior to any work being done involving the cutting of any existing public right-of-way pavement. Said permit will be issued by the city public works department. (No permit fee is required.)

(5) *Displaying permits.* Permits must be openly displayed on the site at all times.

(Ord. No. 32-98, § 1, 8-27-98; Ord. No. 59-00, 12-21-00; Ord. No. 60-00, 12-21-00; Ord. No. 68-04, § 5, 9-2-04)

Sec. 7.5-33. Construction.

(1) *Preconstruction conference.* The developer is required to schedule a meeting with the department of community development and all public and/or private utilities for the purpose of discussing the construction and inspection of the proposed development. A preconstruction conference is required before the issuance of any permits unless waived by all affected city departments.

(2) *Approved plans.* An approved set of construction plans stamped by the city must be kept onsite at all times by the contractor.

(3) *Notification.* The city shall be notified by the developer or his/her contractor before construction begins, and at the various stages in construction required by the city. The city shall be given a two (2) business day advance notice before construction begins. The appropriate department as outlined in section 7.5-34 of these regulations will be directly notified for an inspection request.

(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-34. Inspection.

(1) *Subdivisions.*

(a) *Public works department.* This department is responsible for the inspection of roads, storm drainage, and grading construction.

(b) *Water department.* This department is responsible for the inspection of water and sanitary sewer construction.

(c) *Community development department.* The building official in this department is responsible for the inspection of erosion control construction.

(d) *Other departments.* And any other appropriate city department whose inspections are necessary to insure compliance with the ordinances of the city.

(2) *Commercial/industrial sites not involving the subdividing of land.*

(a) *Public works department.* This department is responsible for the inspection of entrances, storm drainage, and grading construction.

(b) *Water department.* This department is responsible for the inspection of water, sanitary sewer, and firelines for sprinkler system construction to the double check detector meter and vault. Construction of sanitary sewers onsite within sewer easements or offsite within the public rights-of-way are inspected by this department. Sanitary sewer services outside easements will be inspected by the building department. Water line construction up to and including water meters will be inspected by this department. Water line construction downstream of the meters (with the exception of the fire sprinkler system) will be inspected by the building department.

(c) *Community development department.* This department is responsible for the inspection of erosion control, parking layout and landscaping.

(d) *Other departments.* And any other appropriate city department whose inspections are necessary to insure compliance with the ordinances of the city.

(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-35. As-builts.

As-builts shall be required before the final plat is recorded for subdivisions or before a certificate of occupancy issued for commercial/industrial sites. All as-built drawings must be on standard twenty-four (24) inches × thirty-six (36) inches sheets with a maximum scale of one (1) inch = fifty (50) feet. Electronic files must also be submitted in AutoCAD format with water, sewer and storm system all on separate layers.

(a) The water system as-builts shall show locations of fire hydrants, line valves, tees, water main sizes, and types of materials.

(b) The sanitary sewer system as-builts shall show locations of manholes, lines, services, line sizes, types of materials, manhole inverts, and line grades.

(c) Street and storm sewer as-builts shall show street layout, profiles, grades, storm sewers and sizes, storm drainage structures, and detention ponds.

(d) Commercial site layout as-builts in addition to water, sanitary sewer, and storm sewer, as-builts shall include, but not limited to, the following final locations of building(s), entrance(s), parking, and grading on computer disk in AutoCAD format (if feasible).

(e) Sprinkler system as-builts with head count.

(Ord. No. 32-98, § 1, 8-27-98; Ord. No. 68-04, § 6, 9-2-04)

Sec. 7.5-36. Maintenance bond, letters of credit, and performance bond.

(a) The developer, after completion of construction to the standards of these regulations, must obtain written approval of said construction by the city before recording the final plat or final approval by the city.

(b) The maintenance bond or letter of credit covers the cost of maintaining the project for a period of eighteen (18) months from the date the city issues approval of the final plat or project.

(c) The city shall determine the amount of the bond or letter of credit based upon the type of project and the total cost which shall be a minimum of twenty-five (25) percent of the total costs of the project. Maintenance bonds or letters of credit are only required for projects whose total project costs exceeds twenty thousand dollars

(\$20,000.00). The appropriate legal representative shall approve the bond or letter of credit as to form. The bond or letter of credit shall be payable to the City of Cartersville.

(d) In cases where work on city right-of-way is required (i.e. Accel/decel lanes at development entrances), the city shall require a performance bond or letter of credit to cover the cost of estimated construction within the right-of-way. The performance bond or letter of credit amount shall be determined by the city engineer. The bond term will be one (1) year from the issuance of the land disturbance permit. If the construction covered by the bond fails to be completed within this time frame, the city will access the bond and complete the work.

(e) For all bridges to be constructed which are to be dedicated to the city, the developer shall provide a separate maintenance bond or letter of credit on the bridge structure for a period consistent with specifications listed above in sections (b) and (c).

(Ord. No. 32-98, § 1, 8-27-98; Ord. No. 04-02, § 3, 1-3-02; Ord. No. 68-04, § 7, 9-2-04; Ord. No. 46-06, § 1, 7-6-06)

Sec. 7.5-37. Twelve-month maintenance period.

(a) The developer shall maintain the improvements in his/her development for a period of twelve (12) months from the date the city issues approval of the final plat or project. At the end of the twelve-month maintenance period, the city shall perform an inspection of the development and all improvements. The developer shall be notified by the city of the inspection results in writing within fifteen (15) days from the date of said inspection. The maintenance bond or letter of credit shall be released upon the issuance of a letter stating approval of the development by the city. (The final plat shall note said maintenance period and note the date that street dedication to the city shall occur.)

(b) If repairs are needed at the end of the twelve-month maintenance period in order for the improvements to meet city specifications, the developer shall be required to make such repairs within sixty (60) days, after written notification by the city. If the repairs are not completed within said time, and the developer fails to show a legitimate hardship, as determined by the city, which inhibits the completion of the repairs, the maintenance bond or letter of credit shall be called in to pay for the repairs. Should the amount of the maintenance bond or letter of credit be inadequate to pay for the repairs, the developer shall pay the remaining amount. The following procedures shall apply in this situation:

(1) The city shall notify the developer in writing of such action.

(2) Upon completion of necessary maintenance repairs, the developer shall request in writing to the city for inspection of the maintenance repairs. The city shall make said inspection and in turn notify the developer of the inspection results.

(c) If the work is free from defects, and the improvements are in compliance with city specifications, the city shall provide written approval to the developer of said compliance and the maintenance bond or letter of credit shall be released.

(Ord. No. 32-98, § 1, 8-27-98; Ord. No. 04-02, § 4, 1-3-02; Ord. No. 46-06, § 2, 7-6-06)

Sec. 7.5-38. Deed of dedication and maintenance agreement and easement.

Upon issuance of the maintenance bond or letter of credit as provided above, the developer shall execute a deed of dedication as provided by the city. All streets and rights-of-way shown upon the final plat, together with all other public improvements and easements shall be dedicated to the City of Cartersville either in fee simple or by perpetual easement, as appropriate. The deed of dedication shall be recorded by the city in the office of the Clerk of Superior Court of Bartow County, Georgia. The developer shall pay all recording costs associated therewith. The developer shall also furnish to the city an opinion by an attorney acceptable to the city that title records have been examined and that marketable fee simple title was vested in the developer at time of recording of the deed of dedication, if requested by the city. The city reserves the right to refuse said dedication for reasons related to construction, maintenance or title issues.

The deed of dedication shall obligate the developer, his/her successor and assigns to maintain the streets and improvements for a period of twelve (12) months from the date of written acceptance by the city and to correct or repair the same as required in section 7.5-37 of this article. Said acceptance being the date of the deed of dedication is executed by the city. Furthermore, the developer his/her successors and assigns, shall agree to hold

the city harmless and indemnify the city from liabilities arising from defects in design, installation and/or maintenance during the twelve-month period.

In the event that any utility infrastructure is located in another city's, Bartow County, or the State of Georgia's right-of-way a maintenance agreement on the form provided by the city shall be required in lieu of a deed of dedication.

(Ord. No. 32-98, § 1, 8-27-98; Ord. No. 68-04, § 8, 9-2-04; Ord. No. 46-06, § 3, 7-6-06)

Sec. 7.5-39. Insurance requirement.

(a) Prior to the issuance of any permit which includes the construction or installation of infrastructure to be dedicated to the city within right-of-ways, easement, or other property either owned by, to be dedicated, conveyed, or used by the city, said contractor, property owner, or entity working on said property for himself/itself and for all subcontractors must provide the city a liability insurance certificate of one million dollars (\$1,000,000.00) in general liability insurance listing the city as a co-insured or indicating that coverage under said policy is provided for the city.

(b) Said certificate shall be presented to the director of community development prior to the issuance of any construction related permits, and must be approved by him prior to the issuance of any construction related permits.

(Ord. No. 04-02, § 5, 1-3-02)

Sec. 7.5-40. Model home permits.

The city at its discretion may approve up to two (2) model home permits per residential subdivision development with the following stipulations:

- (1) The streets of the development should be sufficiently complete having graded aggregate base (GAB) in place to avoid the tracking of mud onto adjacent streets;
- (2) A working fire hydrant must be within two hundred fifty (250) linear feet of the model home site;
- (3) Final connection to all utilities must be postponed until final platting is complete and recorded.

(Ord. No. 68-04, § 9, 9-2-04)

Sec. 7.5-41. - Electronic submission of building plans.

In the event of new construction or additions of over thirty (30) percent of the entire square footage, the following must be submitted and approved by the fire department prior to the granting of a certificate of occupancy by the City of Cartersville.

- 1) A hard copy and electronic version of the final site plan and building/construction floor plan which shall be provided in AutoCAD format (DWG, DXF) or FirezoneCAD format (CZD).
- 2) The plans at a minimum shall include:
 - a) Building/construction floor plan consisting of the following:
 1. All interior and exterior walls with openings for each level of the building both above and below grade;
 2. Room labels;
 3. Building measurements and dimensions;
 4. Roof access;
 5. Electrical panels and shutoffs;
 6. All life safety items (including but not limited to fire extinguishers, emergency lights, exit signs, fire protection systems, and alarm information); and
 7. Other information as required by the City of Cartersville Fire Department.
 - b) Site plans shall comply with all other requirements of the City of Cartersville, and additionally, shall include:
 1. Fire hydrants;

2. Post indicator valves;
 3. Storage tanks;
 4. Water and gas shutoffs;
 5. Types and purpose of building; and
 6. Other information as required by the City of Cartersville Fire Department.
- 3) All plans must be submitted to the Cartersville Fire Department either in person, by U.S. Mail or email as indicated during the plan review process.
- 4) The effective date shall be October 1, 2008 and shall be applicable for all certificate of occupancy's issued after said date.
- (Ord. No. 30-08, § 1, 9-18-08)

Secs. 7.5-42--7.5-60. Reserved.

ARTICLE III. GENERAL DESIGN REGULATIONS

Sec. 7.5-61. Generally.

- (1) *Enforcement.* The Public Works Department and/or the Community Development Department of the City of Cartersville shall be responsible for the enforcement, issuance of permits, and all other requirements contained in this article.
- (2) *Use of this document:*
 - A. This document is subject to periodic revision to meet changing requirements for materials, state and federal regulations, etc. At the beginning of a project the user should verify that he/she has the latest edition.
 - B. This document is intended to convey the general design and construction requirements for a typical project. It also lists the specific City of Cartersville requirements relating to plan review, inspection, testing and acceptance of facilities. It is not intended as a substitute for site-specific engineering and construction techniques.

Sec. 7.5-62. Definitions.

When used in this chapter, the following words and phrases shall have the meanings given in this section. Terms not herein defined shall have their customary dictionary definitions where not inconsistent with the context. The term "shall" is mandatory. When not inconsistent with the context, words in the singular number include the plural and those used in the plural number include the singular. Words used in the present tense include the future.

As-Built Drawing: A survey or other drawing based on a field survey which shows existing features or components and horizontal or vertical information (grades or location of improvements). All as-built information submitted to the City of Cartersville in the form of electronic files must be in AutoCAD format and be drawn using State Plane Coordinates.

Block: A piece or parcel of land entirely surrounded by public highways or streets other than alleys. In cases where the plotting is incomplete or disconnected, the subdivider may determine the outline of the block.

Building Line: Refer to the Zoning Ordinance for the City of Cartersville.

City means the City of Cartersville, Georgia, United States of America.

Clearing: The removal of trees or other vegetation, but not including grubbing activities.

Comprehensive Plan: The most recently adopted Comprehensive Plan as adopted for the City of Cartersville, Georgia.

Construction Plans: A set of engineering drawings of the proposed streets, drainage, and utilities as set forth in Article II in the "Subdivision Construction Plan Checklist".

Contractor: A person, firm, or corporation with whom the owner of a property has employed or contracted to perform construction activity associated with the development. For purpose of this ordinance the term contractor shall include all subcontractors who are under separate contract or agreement with the contractor for performance of a part of the work at the site.

Cul-De-Sac Street: A street having one end open to traffic and being permanently terminated within the development by a vehicular turnaround. For the purpose of designation, a cul-de-sac street shall be interpreted to begin at the intersection of two or more streets nearest to the vehicular turnaround.

Developer: Any person, individual, firm, partnership, association, corporation, estate, trust, or any other group or combination acting as a unit who directs the undertaking or proposes to undertake development activities whether the development involves the subdivision of the land for sale to individual users, the construction of buildings or other improvements on a single land ownership, or both.

Drainage Way: An area designated for the conveyance of storm water runoff through real property, including both natural and man-made areas.

Easement: Recorded authorization for a specified purpose by a property owner for the use of any designated part of the real property by another entity.

Erosion Control Regulations: Refer to Article VII “Soil Erosion & Sediment Control” of these regulations.

Final Plat: A plat of a tract of land which meets the requirements of the City of Cartersville for permanent recording in the office of the Clerk of Superior Court of Bartow County.

Flood Plain Ordinance: Refer to Article VI “Floodplain Management / Flood Damage Prevention” of these regulations.

Frontage: Refer to “Lot Frontage” in the Zoning Ordinance for the City of Cartersville.

Georgia DOT: The Department of Transportation of the State of Georgia.

Grading: The movement, removal or addition of earth on a site by the use of mechanical equipment.

Grubbing: The removal of stumps or roots from a property.

Health Department: The Bartow County Health Department.

Heavy Industrial Development: Any development that will contain a loading dock or will be subject to frequent truck traffic.

Lot: A lot of record, or any combination of lots of record, held in a single ownership by one person, or in common ownership by more than one, which has both lot area and lot dimensions equal to or greater than the lot width and lot area requirements established by the City Zoning Ordinance for the zoning district in which such tract of land is located and for the use proposed for the tract of land.

Lot Width: The horizontal distance between the side lines of a lot measured at right angles to its depth along a straight line parallel to the front lot line at the minimum required building setback line.

Mean Sea Level: The average height of the sea for all stages of the tide. It is used as a reference for establishing various elevations within the floodplain. For purposes of these Regulations, the term is synonymous with the National Geodetic Vertical Datum (NGVD). All topographic information submitted to the City of Cartersville as part of a proposed development must be reduced to Mean Sea Level, data based on assumed elevations is not acceptable.

Preliminary Plat: An overall layout of the proposed development usually shown on one sheet which meets the minimum standards of the City of Cartersville.

Project: A principal building or structure, or group of buildings or structures, planned and designed as an interdependent unit together with all accessory uses or structures, utilities, drainage, access, and circulation facilities, whether built in whole or in phases. Examples include but are not limited to: a principal building on a lot, a residential subdivision, a multi-family development, a shopping center, or an office park.

Responsible Party: In the context of enforcement procedures, a person who is alleged to have committed, caused, continued or created a violation of the terms, requirements, regulations, or provisions of these Regulations whether as a direct act, through lack of action, through neglect, or at the direction of or on behalf of others. A responsible party may be the owner of a premises where a violation has occurred; an occupant whether through ownership, lease or other tenancy; a contractor, builder or developer; an agent of or person otherwise acting on behalf of the aforementioned parties; or other person acting in violation of these regulations.

Street Classification Map: A comprehensive plan of arterial, major collector, minor collector, and local streets and roads for all or a portion of the City as adopted by the Mayor and City Council on June 7, 2007, as amended.

Site Work: Development activity to prepare a property for construction of buildings or finished structures, including clearing, grubbing, grading, and installation of soil sedimentation and erosion control facilities.

Street Classification: Will be defined according to the City of Cartersville Street Classification Map but are described in general as follows:

- A. Arterial: Refer to “Street, Arterial” in the Zoning Ordinance for the City of Cartersville.
- B. Major Collector: Refer to “Street, Major Collector” in the Zoning Ordinance for the City of Cartersville.
- C. Minor Collectors: Refer to “Street, Minor Collector” in the Zoning Ordinance for the City of Cartersville.
- D. Local: Refer to “Street, Local” in the Zoning Ordinance for the City of Cartersville.

Soil Erosion and Sediment Control Regulations: See the definition of Erosion and Sediment Control Regulations above.

Subdivider: Any person, corporation or duly authorized agent, planner, designer, land surveyor, (landscape) architect or engineer, who undertakes the subdivision of land as defined herein.

Subdivision: Any division of a tract or parcel of land into two (2) or more lots, building sites, or other parts for the purpose of immediate or future sale, legacy, or building development. The term includes re-subdivision and any division of land involving a new street, existing street, or a change in existing streets, and, as appropriate to the context, relates to the process of subdividing or to the land or area subdivided. The term does not include the combination or recombination of portions of previously plated lots, where the total number of lots is not increased and the resultant lots meet the standards of the city, or the division of land into parcels of five (5) acres or more, where no new streets or new utility services are involved.

Variance: A variance is a change in the general design of a development but which shall in no way make null the Development Regulations or the City of Cartersville Zoning Ordinance.

Water and Sewer System: City of Cartersville Water Department provides water and sewer in portions of the City. Portions of the City are provided with water and sewer by Bartow County.

Zoning Ordinance: The Ordinance adopted by the Mayor and Council and known as the City of Cartersville Zoning Ordinance.

Sec. 7.5-63. Subdivisions

- (1) *Minimum Lot Requirements:*
 - A. Minimum right-of-way: Each lot shall front upon a dedicated public street having a right-of-way of not less than 60 feet.
 - B. Arrangements: Side lots lines should be at right angles (90 degrees) to straight street lines or radial to curved street lines. Side lot lines should be radial to the center points in all cul-de-sacs. Side lot lines may deviate up to 5 degrees if necessary to combine property corners.
 - C. Building Lines: Building lines shall conform to the City Zoning Ordinance.
 - D. Double Frontage Lots: Access shall be restricted to the interior street(s) for all residential subdivisions.
 - E. Minimum Lot Frontage: The minimum width of frontage of any lot shall be as required by the City Zoning Ordinance for the specific zoning district in which the lot is located. The lot width at any point from the road right-of-way to the building line shall not be less than the minimum required frontage width.
- (2) *Monuments:* All corners shall be marked with an iron pin, one-half inch in diameter or greater and 18 inches long and driven so as to extend not less than one inch above the finished grade. If unable to penetrate ground 18 inches, then set other permanent monuments (PK nail in asphalt, spike, chiseled x, etc.).
- (3) *Drainage Ways and Easement:*
 - A. Drainage ways for man-made drainage ditches shall be cleared and opened at the time of development to control surface water runoff. Runoff slopes, and side slopes to be specified by the Developer's Engineer, according to good engineering practices. Drainage ditches shall conform to the requirements of this regulation, as specified in subsection 7.5-66(2J).

- B. Drainage ways shall be provided where a subdivision is traversed by a water course, natural stream, channel or any other circumstances where required by the Public Works Department. It shall conform substantially to the limits of such water course plus any additional width as is necessary to accommodate future development.
- C. Drainage ways off the street right-of-way that are to be dedicated to the City shall be clearly defined on the plat of the individual property owner and said property owner shall be required to keep easement free of obstructions and shall maintain same in such a way as to assure free and maximum flow at all times.
- D. All drainage ways, including existing drainage ditches, shall be clear of debris, excess dirt and other materials. The ground shall be smoothed down and grassed by the Developer within ten (10) days of completing construction work. The use of sediment control measures shall be required to protect the area until a vegetative cover is obtained.
- E. Permanent sanitary sewer easements of 20 feet in width shall be provided for sewer lines. If sanitary sewer lines are excessively deep, wider easements shall be required to maintain a 1:1 open cut slope.
- F. Easements for sanitary sewers, drainage, and other utility purposes may be combined, but shall be of a minimum width as specified by the Superintendent of the specific utility departments of the involved utilities.
- G. All drainage ditches and structures must be centered on dedicated easements unless otherwise approved by the Public Works Department.

(4) *Streets:*

- A. *Classification.* Prior to submission of preliminary plat, the developer shall meet with the Director of Public Works to have the proposed street classified, in order that it can be accepted into the City's System. In some cases, it may be desirable for a street to have a higher classification based upon ultimate development of the entire area, which is not necessarily just the one development being submitted. This is particularly true in the more outlying areas around the City. Street continuity may require that a cul-de-sac street be provided in a current development at the property line, such that it can be extended in the future. In a case of this nature, the current development would provide the street to the property line. The future development would pick up at the property line and continue the street.
- B. *Existing Streets:* When development is proposed on an existing street(s), all improvements required under these standards shall apply to the side of the street which the development abuts.
- C. *Relation to Adjoining Street System:* The proposed street system shall extend existing streets, but to current city standards. If lots front on the existing city street, it shall be improved out to an acceptable city or county road by the developer.
- D. *Alleys:* Alleys may be provided to the rear of all lots except lots with double frontage.
- E. *Restriction of Access:* When a subdivision fronts on an arterial or major collector as shown on the City of Cartersville Street Classification Map, double frontage lots shall be provided with frontage on an interior street with no access to the arterial or major collector.

- F. *Dead Ends.* All dead end streets shall have a Cul-de-sac as defined in Section 7.5-70, Standard Details.
- G. *Conformity to the Cartersville Street Classification Map:* The location and width of all streets and roads shall conform to the official City of Cartersville Street Classification Map. Street plans and profiles shall be approved by the City.
- H. *Intersections:*
1. Street intersections shall be as nearly at right angles as is possible.
 2. No intersection shall be at an angle of less than 75 degrees.
 3. The property line at street corners shall be mitered adequately to permit construction of a 17 foot clear shoulder behind the curb & gutter.
 4. Sight distance at intersections shall meet requirements of this regulation (see Section 7.5-70, Standard Details, Detail 3.8.06.)
 5. Islands at intersections shall be subject to individual approval by the City. In no case shall anything extend more than two (2) feet above the back of the curb within the right-of-way, of the street to be intersected.
 6. Landings shall be required for all intersections. These landings shall be as defined in section 7.5-70, Standard Details, Detail 3.8.05.
 7. Opposing tee street intersections shall be directly aligned or shall be offset at least 200 feet.
 8. Intersections shall have a minimum radius as measured to the face of the curb of 40' for residential, commercial and retail subdivisions and 75' for heavy industrial subdivisions.
- I. *Names:*
1. Proposed streets that are obviously in alignment with other already existing and named street(s) shall bear the name(s) of such existing street(s).
 2. No proposed street name shall duplicate an existing street name within the City of Cartersville or Bartow County regardless of the use of the suffix "Street", "Avenue", "Boulevard", "Drive", "Place", "Way", "Court", or however otherwise designated.
 3. All street names are subject to the approval of the City.
- J. *Right-of-Way:*
1. The minimum width of right-of-way, as measured from lot line, shall be as shown in Section 7.5-70, Standard Details, Detail 3.8.01.
 2. Adequate right-of-way shall be provided to allow the construction of a seventeen-foot cleared shoulder behind the curb line except industrial streets shall have a sixteen-foot cleared shoulder.

3. Lawn sprinkler systems and trees shall be located outside existing or proposed street right-of-ways unless otherwise approved by the City.

K. *Traffic Studies:* The Public Works Department may require that a traffic study be performed prior to the issuance of any permits to evaluate the current capacity of streets expected to carry the traffic volumes from the proposed development.

(5) *Entrances:*

A. *Maximum Lots Served.* A subdivision shall serve no more than 200 lots with a single entrance.

B. *Street Access. Curb Cuts in Other Than Residential Districts:* Curb cuts for service drives, entrances, exits, and other similar facilities on public streets in other than Residential districts shall not be located within 50 feet of any intersection.

C. *Driveways:* No more than two (2) combined entrances and exits shall be allowed on any parcel or property when the frontage of which is less than two hundred (200) feet. Additional entrances or exits for parcels or property having a frontage in excess of two hundred (200) feet shall be permitted only after showing of actual requirements of convenience and necessity.

1. The angle of driveways shall not be less than 45 degrees with the edge of the road or street, except on divided highways the entrance angle to roadside commercial establishments may be reduced to 30 degrees. Exit drives from roadside commercial establishments on divided highways shall have an angle of not less than 60 degrees with the roadway.

2. Driveways shall be constructed in accordance with Section 7.5-70, Standard Details, Detail 3.8.08.

D. *Entrance Widening.* Subdivision developments shall construct entrance widening to the following requirements:

1. *Residential Subdivisions:*

a. Residential Subdivisions not exceeding 20 lots whose entrance is on a local or minor collector, as shown on the City of Cartersville Street Classification Map, shall install offset radii and 50 foot tapers as shown in Section 7.5-70, Standard Details, Detail 3.8.18.

b. All other residential subdivisions shall construct full acceleration/deceleration lanes to conform to Section 7.5-70, Standard Details, Detail 3.8.19.

c. Residential subdivisions exceeding 200 lots shall be required to install entrance with a center turn lane and longer acceleration/deceleration lanes if it is located on a minor collector, major collector or an arterial street as shown on the City of Cartersville Street Classification Map. Entrance shall conform to Section 7.5-70, Standard Details, Detail 3.8.20.

2. *Commercial/Industrial Subdivisions.*
 - a. Full acceleration and deceleration lanes shall be installed per Section 7.5-70, Standard Details, Detail 3.8.21. Paving section shall correspond to the street classification of the existing road.
 - b. Commercial/Industrial subdivisions shall be required to install entrance with a center turn lane and longer acceleration/ deceleration lanes if it is located on a minor collector, major collector or an arterial street as shown on the City of Cartersville Street Classification Map. Entrance shall conform to Section 7.5-70, Standard Details, Detail 3.8.21.
 3. Access onto a State road shall meet existing Georgia DOT requirements. Such an application for a DOT Permit shall be submitted to the City prior to submittal to DOT. Once approved by DOT, a copy shall be provided to the City. All such entrances shall be paved.
 4. Sight Distance: The developer shall be required to upgrade the existing City or County road to meet the sight distance requirements of Section 7.5-65(4). See subsection 7.5-65(6) for more detailed requirements concerning lane requirements.
 5. The Developer shall install any catch basins and drainage pipe which must be constructed when an existing City or County road is required to be modified as a result of proposed development at his/her expense.
 6. Existing or proposed water mains and storm sewers shall be relocated at the developer's expense, to a point outside of the entrance widening.
- E. *State Department of Transportation Approval:* All entrances or exits of any street or drive, public or private, from or to any State highway shall be approved by the State Department of Transportation prior to the construction of such street or drive, or the issuance of any development permit for any improvement to be served by such street or drive.

(6) *Utilities:*

- A. The design and construction specifications for all public utilities shall conform to the Specifications for the City of Cartersville.
- B. All utilities shall be buried in a residential subdivision unless otherwise required by the City of Cartersville. This requirement may only be waived by the Director of the respective department, said waiver must be in writing.

(7) *Final Plats:* Final Plats shall be required to meet the State Plat Act and the current City of Cartersville Zoning Ordinance.

7.5-64. Individual Commercial/Industrial/Multifamily Sites

- (1) *Development Entrances:* In addition to the following, parking lots shall not drain onto a City Street except as approved by the Public Works Department.
 - A. The City shall approve the number of entrances to a proposed development.

- B. On minor collector streets provide offset radii and tapers per Section 7.5-70, Standard Details, Detail 3.8.22 except in the DBD zoned area.
- C. Industrial developments, commercial businesses and multifamily developments shall install full acceleration/deceleration lanes Section 7.5-70, Standard Details, Detail 3.8.23 if accessing a major collector or an arterial street except in the DBD zoned area.
- D. Industrial Developments on corner lots which have frontage on interior subdivision streets shall have access only from the interior subdivision street(s).
- E. Developments on corner lots which have frontage on a local or minor collector city road shall install an additional lane pursuant to the specifications of the Public Works Department except in the DBD area.
- F. The City may require a center turn lane or a longer deceleration lane if the City determines the traffic the project generates and the existing city street warrants it.
- G. Access onto a state road shall meet existing Georgia DOT requirements, except for the entrance must be paved.
- H. Sight Distance: No entrance shall be allowed in a location that does not provide adequate sight distance as specified in Section 7.5-70, Standard Details, in Details 3.8.06 and 3.8.07. The Developer may choose to upgrade the existing city or county road to meet the sight distance requirements of Section 7.5-65(4).
- I. Fire lanes shall be designed with proper space for fire vehicles movement. Fire lanes shall be approved by the City of Cartersville Fire Department.

(2) *Off Street Automobile Parking:*

- A. Parking layout shall conform to Section 7.5-70, Standard Details, Detail 3.8.10a, 3.8.10b and 3.8.10c. All off street parking shall be paved unless otherwise approved by the City.
- B. Reserved.

7.5-65. Street Design Criteria

- (1) *AASHTO Standards:* Road design shall conform to AASHTO (American Association of State Highway and Transportation Official(s)) requirements as published in “A Policy on Geometric Design of Highways and Streets” 1994 edition as amended, unless otherwise noted herein.
- (2) *Minimum Design Speed and Maximum Grade:* Minimum design speeds and maximum grades for proposed streets in the City of Cartersville by street classification shall be as follows:

Street Type	Maximum Allowable Grade	Minimum Required Design Speed
Arterial	7%	55 MPH
Major Collector	10%	45 MPH
Minor Collection	12%	35 MPH
Local	12%	30 MPH
Alleys	12%	N/A
Cul-de-sac	4%	N/A

- (3) *Minimum Street Grade:* Minimum grade on cul-de-sacs shall be 1.5% to maintain 1% in curb line. Minimum street grade outside of cul-de-sacs shall be 1%.
- (4) *Site Distance at Entrances:*
- A. Sight distance requirements along existing city roads shall be determined using the posted speed limit and the corresponding stopping sight distance as shown in Section 7.5-70, Standard Details, Detail 3.8.06.
 - B. The sight distance for crest and sag vertical curves is the distance measured along the roadway from a driver's eye 3.5 feet above the pavement to an object 6 inches high at the intersection as shown in Section 7.5-70, Standard Details, Detail 3.8.06.
 - C. The sight distance for horizontal curves is determined by the line of sight available 2.0 feet above the road surface. The sight distance is measured along the existing edge of pavement beginning at the centerline of the proposed entrance and ending where the line of sight intersects it. The line of sight is the projected line of visibility beginning at the entrance centerline and tangent to an obstruction 2.0 feet above the road surface. Examples of obstructions are vegetation, ground cover, signs, existing topography, etc. (See Section 7.5-70, Standard Details, Detail 3.8.07.)
- (5) *Curves:*
- A. *Vertical:* The length of vertical cures, both crest and sag, shall be based upon current **AASHTO standards**.
 - B. *Horizontal:* Streets shall be designed to have a centerline radius of curvature of no less than 100'. Proposed minor collector streets shall have a minimum 300' centerline radius of curvature. All other streets horizontal curvature shall be designed according to AASHTO Standards.
- Tangent distance between reverse curves shall be as follows:
- | | |
|------------------|----------|
| Major Collectors | 300 feet |
| Minor Collectors | 200 feet |
- (6) *Street Cross-Section:*
- A. Street cross-sections shall be as shown in Section 7.5-70, Standard Details, Detail 3.8.01.
 - B. Curb and Gutter shall be as shown in Section 7.5-70, Standard Details, Detail 3.8.09.
 - C. Cul-de-sac radius shall be as shown in Section 7.5-70, Standard Details, Detail 3.8.02 for residential applications and 3.8.03 for commercial applications.
- (7) *Street Paving:* Pavement thickness for streets shall be as specified in Section 7.5-70, Standard Details, Detail 3.8.01
- A. "GAB" refers to Graded Aggregate Base as specified in the Georgia DOT in Standard Specifications Section 815.
 - B. "Type B" refers to Type B Asphalt concrete as specified in the Georgia DOT in Standard Specifications Section 828.
 - C. "Type E" refers to Type E Asphalt concrete as specified in the Georgia DOT in Standard

Specifications Section 828.

- D. "Type F" refers to Type F Asphalt concrete as specified in the Georgia DOT in Standard Specifications Section 828.
 - E. All local commercial/industrial and minor collector commercial/industrial streets shall have the same paving section as the major collector street type.
- (8) *Dam Supporting Road:* No City street shall be designed to cross an existing or proposed dam that is regulated by the Safe Dams Act.
- (9) *Curb and Gutter:* Curb and gutter shall be required on all paved streets. (See Section 7.5-70, Standard Details, Detail 3.8.09.)
- (10) *Sidewalks:*
- A. Sidewalks shall be required on at least one side of all new streets in residential developments and are required along property frontage of all new developments on existing streets.
 - B. Sidewalks shall be a minimum of five (5) feet in width and shall be constructed in accordance with Section 7.5-70, Standard Details, Detail 3.8.15 and located as shown in Detail 3.8.14.
 - C. Sidewalks shall be backfilled and landscaped.
 - D. Sidewalks shall include handicap ramps at all street intersections to meet the Americans with Disabilities Act (ADA) requirements. See Section 7.5-70, Standard Details, Detail 3.8.16a, 3.8.16b, 3.8.16c and 3.8.16d.
- (11) *Traffic Signs:* The design professional shall show the location of all required traffic signs. The developer shall furnish and install all street signage in the project. Unless otherwise noted, design of traffic signs shall conform to the Manual on Uniform Traffic Control Devices (MUTCD), Latest Edition, published by the United States Government Printing Office.
- (12) *Utility Locations:* All utility locations shall correspond to the typical layout shown in Section 7.5-30, Standard Details, Details 3.8.12 and 3.8.13.

Sec. 7.5-66. Storm Drainage Design Criteria

- (1) *Storm Sewers:*
- A. All storm sewer design calculations shall be certified by a Professional Engineer, Land Surveyor or Landscape Architect currently licensed in the State of Georgia.
 - B. Storm drainage pipes shall be sloped so as to maintain a minimum velocity of 3 feet per second (fps) during the 2 year design storm event in order that sediment will not collect.
 - C. Drainage formulas used in determining size of storm sewer components shall meet all criteria of: "**STORMWATER MANAGEMENT MANUAL**", Latest Revision, facilitated by the Atlanta Regional Commission, the Georgia Department of Natural Resources-Environmental Protection Division and 35 cities and counties across Georgia.
 - D. The 25-year storm event shall be used in designing the storm drains. In cases where the

property is traversed by a spring, creek, or other watercourse, the 100-year storm event will be used for design.

- E. Storm sewers shall not be less than 15 inches in diameter. No storm drain pipe running parallel to the existing primary road shall be located beneath the proposed entrance widening. Relocation of existing storm drainage structures shall be done by the Developer.
- F. Storm drainage structures or drainage ways shall not be located within twenty (20) feet of any existing or proposed building.
- G. Storm sewers shall extend at least from edge of right-of-way to edge of right-of-way. Residential subdivision storm sewers shall extend at least to the rear of the building on all piping.
- H. Catch Basins, junction boxes, drop inlets and outlet structures shall have a minimum elevation drop from the inlet invert elevation to the outlet invert elevation of at least 0.20 ft.
- I. Maximum continuous length of pipe without a junction box, drop inlet, or catch basin, shall be 300 feet for pipes less than 42 inches in diameter, and 500 feet maximum for pipe greater than 42 inches in diameter.
- J. Storm sewers shall be reinforced concrete pipe (RCP) within the right-of-way of an existing or proposed street.
- K. Aluminum storm drain piping shall be encased in a polyethylene wrap when it is located within 20 feet of a steel gas line. Contact the City of Cartersville Gas Department for specifications.

(2) *Drainage Structures (Excluding Pipe or Culverts):*

- A. The design engineer shall check the hydraulic capacity of each drainage structure designed as an inlet point in the drainage system. The actual storm water flows shall be compared with the structures flow capacity to insure their capacity is not exceeded.
- B. Catch basins shall be constructed in accordance with the Georgia Department of Transportation Standard Details 1033D and/or 1034D.
- C. Catch basins shall be located outside of intersection radii.
- D. Catch basin spacing from each other shall be limited to a maximum distance as follows.

250' on grades up to 7%
400' on grades from 7% to 10%
500' on grades over 10%

No curb cuts in lieu of drainage structures will be allowed.

- E. The outlet end of all storm drain pipes shall have either flared-end sections or concrete headwalls which meet Georgia DOT Standards 1120 or 1125. This same standard applies to the inlet end of storm sewers where an open pipe is designed to collect the runoff. Flared ends shall be of the same material as the storm drain pipe.

- F. Drop inlets shall be designed to Georgia DOT Standard Detail 1019A. Weir drop inlets shall be provided in landscaped areas. Grated drop inlets shall be provided in paved areas.
- G. Junction boxes or manholes having access to the pipe shall be constructed to meet the requirements of Georgia DOT Standard Detail 9031U or 1011A. Manholes shall be provided with eccentric cone sections.
- H. All drainage structures shall have a minimum elevation drop from the inlet invert elevation to the outlet invert elevation of at least 0.20 feet.
- I. Detention Facilities which are normally dry having a depth, including freeboard, greater than or equal to four (4) feet shall be fenced and have a ten (10) foot-wide lockable gate for entrance and maintenance. The fence shall be a minimum of six (6) feet in height and shall be of the vinyl-coated chain link or wooden privacy type.
- J. *Storm Water Ditches:*
 - A. All ditches between storm drain pipes and downstream of storm drain pipe shall be designed by a Professional Engineer or Landscape Architect currently licensed in the State of Georgia.
 - B. The ditch profile and cross-sections shall be shown on the plans. The plans shall show the velocity and flow for the ditch design. Drainage ditches shall be designed to limit the runoff velocity to less than 5 fps or the ditch shall have the bottom and sides lined with sod. Ditches shall be designed to limit the runoff velocity to less than 8 fps or the ditch shall have a paved invert as shown in Section 7.5-70, Standard Details, Details 3.8.17a and 3.8.17b.
 - C. In residential subdivisions, all ditches are to be installed and apparent prior to approval of the final plat.
- K. *Subdrainage:* When subgrade compaction requirements of these specifications cannot be met, subdrainage will be installed to control the surplus ground water by intercepting side-hill seepage or by lowering or regulating the ground water level.
- L. *Bridges:* Bridges shall not be allowed unless otherwise approved by the Public Works Department.
- M. *Existing Dams:*
 - A. It shall be the responsibility of the developer to provide any required information or studies, to include the dam breach analysis, for any dam located on the property proposed to be developed or located on adjacent property upstream of the proposed development, to the City of Cartersville. The design engineer shall search the entire watershed upstream of the property for other dams regulated by the state. The City of Cartersville shall maintain a record of dams reported to the City and their attendant breach zones. The design engineer shall include a statement in the dam breach analysis report whether or not any dams were found upstream and whether or not they affect the property to be developed.
 - B. The City of Cartersville shall submit the required information to the Environmental Protection Division of the Georgia Department of Natural Resources for review.

C. The City of Cartersville shall notify the dam owner in accordance with the procedures set forth in the Georgia Safe Dams Act.

D. If development is proposed in the breach zone below the dam, then the dam owner shall be required to upgrade the dam to Category I standards, as defined in the Georgia Safe Dams Act, or breach the dam in a safe manner as authorized by the Environmental Protection Division of the Georgia Department of Natural Resources. If the dam owner elects to breach the dam, measures must be taken to ensure that stormwater flows are not increased on downstream property owners.

N. *Proposed Dams:* The Developer of any proposed new dams which are regulated by the Georgia Safe Dams Act shall obtain necessary permits and approvals from the State of Georgia prior to obtaining a development permit from the City of Cartersville. A development permit shall be required before the construction of said dam.

Sec. 7.5-67 Stormwater Quality / Quantity Control Facilities

The City of Cartersville requires each new project to create adequate stormwater controls using Best Management Practices (BMP)'s. Use of the BMP's to enhance water quality to comply with the Clean Water Act (CWA) is federally mandated. The City of Cartersville will utilize the Atlanta Regional Commission's *Georgia Stormwater Management Manual*, Volumes I and II, as standards for compliance with the required BMP's. Refer to Article IX of this chapter for guidance on compliance with these requirements.

Sec. 7.5-68. Materials

- (1) *Compliance:* All materials shall comply with Georgia DOT Standard Specifications for Construction of Roads and Bridges, 1993 edition, as amended, with supplemental specifications and standard details, unless otherwise noted.
- (2) *Streets:*
 - A. *GAB.* Graded Aggregated Base course shall consist of mineral aggregate and may be a combination of natural deposit or a blend of the materials specified in the Georgia DOT in Standard Specifications Section 815
 - B. *Black Base.* Black base shall consist of asphalt concrete conforming to Type B specifications of the Georgia DOT in Standard Specifications Section 828.
 - C. *Prime.* After the base has been placed, mixed, compacted, shaped, inspected and accepted, it shall be primed with suitable asphalt materials as specified in Georgia DOT in Standard Specifications Section 412.
 - D. *Tack.* Tack coat shall be applied on a prepared road surface according to the requirements of Georgia DOT in Standard Specifications Section 413.
 - E. *Surface Course.* Type E Asphalt concrete as specified in the Georgia DOT in Standard Specifications Section 828.
- (3) *Curb and Gutter.* Concrete shall be Class "A" as defined by Georgia DOT in Standard Specifications Section 500 and have a minimum compressive strength of 3000 psi at 28 days.

(4) *Storm Sewers*

- A. Georgia DOT Standard Detail 1030D shall be used in determining class concrete or gauge of pipe under fill.
- B. A certification by the supplier of the pipe specifications for each pipe shall be required before installation.
- C. Concrete pipe shall be steel reinforced in accordance with AASHTO: M170.
- D. All corrugated metal pipe shall be aluminum or type II aluminized steel.
- E. High Density Polyethylene (HDPE) pipe materials may be acceptable at locations approved by the Public Works Department. HDPE Corrugated and Smooth Lined Pipe & Fittings shall be manufactured in accordance with requirements of AASHTO M 294 and AASHTO MP7, latest edition.

Sec. 7.5-69. Construction

- (1) *Compliance.* All construction shall comply with Georgia DOT Standard Specifications Construction of Road and Bridges, with Supplemental Specifications and Standard Details, 1993 edition, as amended, unless noted otherwise.
- (2) *Clearing and Grubbing.* Grading sections shall be cleared and grubbed of all trees, bushes, stumps and debris. Such debris shall be disposed of in a lawful manner. There shall be no burial of such debris on site.
- (3) *Grading.*
 - A. Grading shall be accurately done to the lines and grades shown on the plans. Embankments shall be placed in uniform layers not to exceed six inches and compacted to a density of 95 percent of the maximum laboratory dry weight per cubic foot as determined by AASHTO Method T-99. The contractor shall add moisture to the material as required as it is placed to obtain required compaction.
 - B. Compaction test shall be provided by the developer and shall be performed by a geotechnical engineer licensed in the State of Georgia. Required test shall be every two (2) feet vertically and five hundred (500) feet horizontal.
 - C. Maximum Construction Cut and Fill Slopes are as follows:

<u>Depth of Cut or Fill</u>	<u>Cut Slopes</u>	<u>Fill Slopes</u>
2 feet or less	4 to 1	4 to 1
2 feet to 5 feet	3 to 1	3 to 1
5 feet to 10 feet	2 to 1	2 to 1
Over 10 feet	2 to 1	2 to 1

The depth of cut referred to shall be constructed to the maximum cut or fill occurring in any one section of cut or fill. The slope on cut or fill slopes shall be uniform throughout for each section or cut or fill. When a cut is made in rock that requires blasting, the slope may be changed to vertical slope upon the written approval of the Public Works Director.

- (4) *Subgrade.*
- A. After the earth work has been completed, all storm drainage and other underground utilities have been installed under the roadbed, and the backfill in all such ditches thoroughly compacted, the subgrade shall be brought to the lines, grades and cross-section shown on the plans. Underground utilities located in the shoulder of the road shall not be installed until the seventeen- foot shoulder has been constructed to the subgrade level.
 - B. If any sections of the subgrade are composed of unsuitable or unstable material, such material shall be removed to the depth directed by the authorized representative of the City and replaced with suitable, thoroughly compacted material.
 - C. When the street is to be used for construction traffic before the paving work is completed, a layer of GAB can be laid as a traffic surface.
 - 1. This material shall not be used as part of the base material.
 - 2. It may be worked into the subgrade, or it shall be removed before the base course is set up for paving.
 - 3. Provision shall be made to drain low points in road construction when the final paving surface is delayed.

- (5) *Curb and Gutter.*
- A. Line and grade shall be set by developer's engineer, landscape architect, or land surveyor.
 - B. One-half inch expansion joints or pre-molded bituminous expansion joint material shall be provided at all radius points and at intervals not to exceed 50 feet in the remainder of the curb and gutter.
 - C. Cross-Section shall be in accordance with Section 7.5-70, Standard Details, Detail 3.8.09.
 - D. All curbing within a public street right-of-way must be installed on a minimum of 6 inches of compacted GAB Graded Aggregate Base).

- (6) *Street Cuts.*
- A. The City's policy is no existing streets can be open cut unless unusual circumstances warrant it. No street shall be cut or bored without a written permit issued by the Public Works Department. Application for such permit shall be made at least two business days prior to the desired time for starting work.
 - B. All trenches shall be backfilled and compacted the same day the trench is opened. Compaction requirements are as follows:
 - 1. Trenches under paving shall be backfilled with GAB and returned to 100% compaction.
 - 2. Trenches elsewhere shall be returned to 95% compaction.

- C. If the City allows open cutting, all trenches under existing paving shall be backfilled and compacted in 6-inch lifts and excavated to allow for concrete and asphalt to be placed as shown in Section 7.5-70, Standard Details, Detail 3.8.11. The edges of the paving cut shall be saw cut smooth.
- D. Compaction test on cuts shall be made at two (2) per cross cut.

(7) *Underground Utilities.*

- A. All utilities within the curbs shall be installed and the ditches backfilled and thoroughly compacted before any pavement or base is installed.
- B. All utility manholes and valve boxes shall be brought to the finished grade within the roadway section.

(8) *Easements.* Easements shall be clear of limbs and debris, graded smooth, and established in grass.

(9) *Foreign Materials on Streets.*

- A. The developer, builders, and/or homeowners shall be responsible for keeping dirt, mud, building materials, concrete, etc., off the pavement and curbing of existing City or County roads during construction of buildings in all developments covered by these regulations.
- B. Before the streets are accepted by the City of Cartersville, all litter and trash shall be removed from the dedicated rights-of-way and surrounding areas.

(10) *Storm Sewers.* Pipe installation shall conform to Georgia DOT Standard Specifications for Construction of Roads and Bridges.

- A. Before any traffic over a storm drain is allowed, the developer shall provide an adequate depth and width of compacted backfill to protect the structure from damage or displacement. Any debris or silt that constricts the flow through a pipe shall be removed by the developer as often as necessary to maintain drainage. All pipe structures shall be cleaned before the work is accepted. Any damage or displacement that may occur due to traffic or erosion shall be repaired or corrected at the developer's expense.
- B. Minimum Clearances Are:
 - 1. One foot between the bottom of the base or sub-base, if used, and the exterior crown of the culvert.
 - 2. A minimum of 0.5 foot between underground utilities and exterior crown of culverts.
- C. Trench construction for storm drainage pipe shall be in accordance with State Highway Standard 1030D.
- D. Storm drainage pipe shall be bedded in Size No. 57 (1" to No. 4) per ASTM D-448 Table 1, standard sizes of processed aggregates when structural fill material is not available.

Sec. 7.5-70. Standard Details (See Details at the end of Article III)

Sec. 7.5-71. Private Streets

(1) *Definitions.*

- (a) *City Engineer* shall be the individual designated by the City Manager to perform said functions.
- (b) *City of Cartersville Development Standards.* The City of Cartersville Zoning Ordinance, City of Cartersville Development Regulations and all codes and ordinances adopted by the City of Cartersville.
- (c) *Director* refers to the City of Cartersville Director of Community Development.
- (d) *Subdivision* for the purpose of this section, subdivisions include only the following uses:
 - (1) Single family residential units; and
 - (2) Fee simple town home units, fee simple condominiums or other fee simple ownership of the individual residential units.

(2) *Private Streets Permitted.* Private streets may, upon application, be permitted by the Planning Commission within subdivisions, subject to the requirements of this section. Applications for approval of private street shall be considered by the Planning Commission at the time of preliminary plat approval by the Planning Commission. Following a recommendation by the Public Works Director or City Engineer to authorize private streets in a major subdivision, the Planning Commission shall consider the application and may impose conditions on the approval of private street to ensure various public purposes and to mitigate potential problems with private streets. No final plat involving a private street shall be approved unless said final plat conforms to the requirements of this section.

(3) *Engineering Plans Required.* It shall be unlawful for any person, firm, or corporation to construct a new private street or alter an existing private street or to cause the same to be done without first obtaining approval of engineering and construction plans from the Public Works Director and the City Engineer in accordance with the requirements of this Ordinance and the City of Cartersville Development Standards.

(4) *Standards.* All private streets shall be constructed to all standards for public street including all related appurtenances as required by the City of Cartersville Development Standards, applicable construction specifications of the City Engineer, and as approved by the City Engineer.

(a) If a gate or other controlled access is installed at the entrance to the development, a place which provides emergency access to the development by emergency agencies must first be approved by the emergency agencies of the City of Cartersville. Access must also be provided to anyone providing utilities to said development; there shall be an automatic gate opening on any power disconnect.

(b) All provisions of the zoning ordinances of the City shall apply to the development of said development.

(c) There shall be only one entrance/exit from the development to a public street unless otherwise recommended by the City Engineer, Fire and Police Department or other emergency services and approved by the Planning Commission. In no event shall a private street be constructed so as to permit said street, in any configuration, to serve as a connecting street between two public streets. Other than the entrance/exit to the private development, no private street shall adjoin any property outside the limits of the private development;

- (d) There shall be an independent certified inspector approved by the City provided by the developer to determine compliance with the specific rules and requirements for streets and utilities during the entire project.
- (5) *Street Names and Signs.* Private streets shall be named, subject to the approval of the Director. The subdivider of land involving a private street shall install street signs with content containing the street name and the designation “private”, as approved by the Director. The sign signifying the private street may be required by the Director to be a different color than that of street signs provided for public streets, in order to distinguish maintenance responsibilities in the field.
- (6) *Easements.* Easements for private streets shall be designated on final plats as general-purpose public access and utility easements, along with the name of said private street. Said easement shall at minimum be of the same width as that required for the right-of-way of a public street by the major thoroughfare plans and the City Engineer for the type of public street (local, collector, etc.) most closely resembling the proposed private street. Easements for private streets shall not be included in any calculation of minimum lot size or density limitations established by local land use regulations. In the cases of private streets, the general-purpose public access and utility easement for the private street shall either:
- (a) Be shown in a manner on the final plat such that each lot fronting the private street shall extend to the edge of the curb, right-of-way, or easement for said private street. No lot shall be permitted to be divided by the general purpose public access and utility easement required and established for a private street; or
 - (b) Shall be drawn as its own discrete parcel to be dedicated to a private homeowners association (i.e. not shown to be a part of any lot).
 - (c) All utility easements as required by the City of Cartersville Development Standards must be installed and dedicated to the City.
- (7) *Maintenance.* The City shall not maintain, repair, resurface, rebuild, or otherwise improve streets, signs, drainage improvements or any other appurtenances within general purpose public access and utility easements established for private streets. A private maintenance covenant recorded with the Bartow County Clerk of the Superior Court shall be required for any private street and other improvements within general purpose public access and utility easements established for private streets. The covenant shall set out the distribution of expenses, remedies for non-compliance with the terms of the agreement, rights to the use of easements, and other pertinent considerations. The Covenant shall specifically include the following terms.
- (a) The Covenant shall establish minimum annual assessments in an amount adequate to defray costs of ordinary maintenance and procedures for approval for additional needed assessments. The Covenant shall also specify that the funds from such assessments will be held by a homeowners or property owners association in all cases.
 - (b) The Covenant shall include a periodic maintenance schedule.
 - (c) The Covenant for maintenance shall be enforceable by any property owner served by the private street.
 - (d) The Covenant shall establish a formula for assessing maintenance and repair costs equitably to property owners served by the private street.
 - (e) The Covenant shall run with the land.

- (f) The Planning Commission may, at its discretion, as a condition of approving private street, require a performance bond and/or maintenance bond and/or letter of credit be submitted by the subdivider and held by a homeowners or property owners association, or the Planning Commission may require that the sub-divider pay an amount of money as recommended by the City Engineer into an escrow account or other suitable account for the maintenance and repair of private streets and stormwater management improvements, to be drawn from by the homeowners or property owners association as maintenance and repair needs may arise.
 - (g) All agreements, restrictive covenants and other documentation related to the development shall be furnished and approved by the Director prior to commencement of development.
- (8) *Specification for Final Plats Involving Private Streets.* The Director shall not approve for recording any final plat involving a private street unless and until it shall contain the following on the face of the plat:

- (a) Deed book and page reference to the recorded covenant required by this section;
- (b) “WARNING The City of Cartersville, Georgia has no responsibility to build, improve, maintain, or otherwise service the private street, drainage improvements and other appurtenances contained with the general public purpose access and utility easement or easements for private streets shown on this plat unless otherwise indicated hereon.
- (c) “Grant of Easement. The general purpose public access and utility easement(s) shown on this plat for private street(s) is hereby granted and said grant of rights shall be liberally construed to provide all necessary authority to the City of Cartersville, Georgia and to public or private utility companies serving the subdivision, for the installation and maintenance of utilities, including, but not limited to, electric lines, gas lines, telephone lines, water lines, sewer lines, cable television lines, and fiber optic cables, together with the right to trim interfering trees and brush, together with a perpetual right of ingress and egress for installation, maintenance and replacement of such lines.

Signature of Property Owner”; and,

- (d) (The Following certificate of dedication shall be required by the City unless the Mayor and City Council waives the dedication requirement).

The Director may add to said dedication as may be required for the particular project.

“Certificate of Dedication. All water and sewer lines and other utilities installed within the general purpose access and utility easement(s) shown on this plat for private street(s) are hereby dedicated to City of Cartersville, Georgia.

Signature of Property Owner.”

- (9) *Requirement of Purchaser’s Acknowledgement of Private Responsibilities.* Prior to the sale or as a condition of the closing of a real estate transaction involving any lot served by a private street in the City of Cartersville, Georgia, the subdivider or seller of said lot shall execute a notarized purchaser’s acknowledgement of private street construction and drainage maintenance responsibilities as set forth below. A copy of the purchaser’s

acknowledgement shall be retained by the purchaser and shall be required to be submitted as a condition of a building permit for a principal building on said lot:

“Purchaser’s Acknowledgement of Private Street and Drainage Maintenance Responsibility

(I)/ (We) have read the Declaration of Covenant which pertains to the lot that is the subject to this real estate transaction _____(insert address or attach legal description). (I)/(We) understand that the Declaration of Covenant applies to the lot that (I am)/(we are) purchasing and requires (me)/(us) to provide a specified percentage or amount of the financing for the construction and maintenance of any private street and drainage facilities serving the lot which (I am)/(we are) purchasing, and that owners of other lots in this plat may sue for and recover those costs which this covenant requires (me)/(us) to pay, plus their damages resulting from (my)/(our) refusal to contribute, plus reasonable attorneys fees. (I)/(We) further understand that the City of Cartersville, Georgia has no obligation to assist with the maintenance and improvement of the private street, drainage facilities, and other appurtenances within the general purpose public access and utility easement for the private road serving the lot in question. (I) (We) understand that a copy of this purchaser’s acknowledgement shall be required as a condition of the issuance of a building permit for a principal building on the lot (I am)/(we are) purchasing.

Purchaser

Purchaser

- (10) All agreements, restrictive covenants and other documentation related to the development shall be furnished and approved by the Director prior to commencement of development.

Sec. 7.5-72. Inspections

Development inspection and construction shall adhere to the description and listing provided in the City of Cartersville Public Works Department Construction and Inspection Procedures document. The City of Cartersville reserves the right to impose inspection fees to cover expenses incurred as a result of inspection manpower shortages.

Sec. 7.5-73. Reserved.

ARTICLE IV. SEWER SPECIFICATIONS

Sec. 7.5-91. Generally.

(1) *Use of this document.*

(a) This document is subject to periodic revision to meet changing requirements for materials, environmental regulations, etc. At the beginning of a project the user should verify that he has the latest edition.

(b) This document is intended to convey the general design and construction requirements for a typical project. It also lists specific city requirements relating to plan review, inspection, testing and acceptance of facilities. It is not intended as a substitute for site-specific engineering and construction techniques.

(2) *Connection to existing sewers.*

(a) All future buildings within the city's corporate limits which are to be utilized for occupancy or any other use such as commercial or industrial purposes which requires sanitary sewerage facilities shall be connected to the public sewer system except as provided in sections 24-80 and 24-81 of this Code. Cost of constructing the necessary facilities for connection to public sewers shall be at the expense of the developer.

(b) The city maintains the option of requiring developers of individual lots to construct main line extensions of up to two hundred (200) feet to avoid cutting pavement on existing streets for connection to the public sewer.

(3) *Definition of sewer line terminology.*

(a) "Building sewers" or "service laterals" are defined as those pipes used to convey wastewater from the building or portions of a building to a main sewer. The minimum diameter for a service lateral is six (6) inches. These sewers are privately funded and owned.

(b) "Main sewers" are located in streets, rights-of-way or dedicated easements. They are gravity piping systems used to collect sewage from one (1) or more service laterals to other main sewers. Main sewers are a minimum of eight (8) inches in diameter and may extend beyond the property boundaries of a development. Funding of main sewers is by the developer.

(c) "Force main sewers" are pressure piping systems which convey sewage from a pump station to a main sewer. These sewers are constructed of ductile iron pipe and have a minimum diameter of four (4) inches. Funding of force mains is by the developer.

(d) "Private sewerage systems" are all non public sewer systems as approved by the water superintendent pursuant to chapter 24 of this Code.

(4) *When public sewers are not available.* If sewers are not adjacent to the property, the following options are available:

(1) Provide a private sewerage system pursuant to sections 24-80 and 24-81 of this Code.

(2) Extend city sewers to the area.

(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-92. Plans; specifications; submittals.

(1) *Generally.* All projects which involve construction of main sewers and/or force mains, pumping facilities, and private sewerage systems shall have detailed construction plans and specifications prepared by a registered professional engineer or licensed surveyor licensed in the state. Developments which only involve building sewers may have plans and specifications prepared by the project architect.

(2) *Preliminary review.* Preliminary plans will be prepared and submitted for review as described elsewhere in the development regulations. Questions relating to availability of sewers and proposed location of connection should be resolved at this stage before proceeding with final planning. A submittal for preliminary review must include all land to be developed although the land is to be developed in several phases or units. Availability determinations will be made only for the phases of the project proposed for current construction. Availability determinations will be valid for a period of one (1) year from the date of project approval. The developer must submit any data required for accurately projecting sewer flow quantities and rates. The developer is also responsible for furnishing any other information deemed necessary for evaluating service feasibility.

(3) *Sewer construction plans.* All plans for public and private sewer facilities shall be prepared in accordance with the requirements outlined herein and as required in regulations promulgated by the Georgia Environmental Protection Division. The developer shall be responsible for submitting plans and other data to the state EPD for

required approvals. Projects involving sewers greater than thirty-six (36) inches in diameter or pump stations with capacity of seven hundred (700) gallons per minute and greater must be submitted to the EPD for required approvals. The following requirements will apply to preparation of sewer construction plans:

(a) The site plan shall show land lots, district and north arrow, lot layout, and existing and proposed building locations. The site plan shall also show all existing and proposed streets and their names, all streams, water courses, existing and proposed storm drains, and the discharge points for all drainage structures. The site plan shall accurately show the topography with contour lines at two-foot intervals. Elevations shall be referenced to mean sea level and plans shall note the location of the specific USGS vertical elevation marker or other approved benchmark used for deriving site elevations. The site plan shall show the sewer layout with existing and proposed lines, manhole numbers, line designation and direction of flow, and proposed sewer easements and other utility easements. It shall also show the location of proposed services.

(b) The design of cross-country sewer lines and force mains shall be based on field-run surveys. The site plan for cross-country sewer lines and force mains need not show contour intervals on the plan view, but the profile views shall accurately depict ground level elevations and elevations of all relevant structures. Site plans for lift stations shall show existing and proposed contours. In the event the subdivision is developed in phases, the final construction plans for sewers may be submitted in phases or units. However, at the time the first phase is submitted, the engineer will submit one (1) copy of the preliminary layout of the entire sewer system. This layout will show all lines required to serve any lots to be developed and any surrounding property that may be served through the property. The site plans for each phase or unit shall contain a location drawing showing the relationship of the phase or unit to the total project and to the surrounding streets and sewers.

(c) Profiles should have a horizontal scale of not more than one hundred (100) feet to the inch for cross-country lines and fifty (50) feet to the inch for congested areas, and a vertical scale of not more than twenty (20) feet to the inch. The plan view should be drawn to a corresponding horizontal scale. The plan view should normally be shown on the same sheet as the profile. In any case both the plan and profile view should have line designations, station numbers, manhole numbers and any other indexing necessary to easily correlate the plan and profile view. Plans and profiles shall show:

1. Location of streets, sewers and utility easements.
2. Profile of ground surface, the grade of the sewer between each two (2) adjacent manholes, size and material of pipe, length between manholes, invert of sewer in and out of each manhole, and ground surface elevation at each manhole. All manholes shall be numbered on the plan and correspondingly numbered on the profile and station numbers will be shown for each manhole. The profile of adjacent parallel stream beds and of adjacent lake surfaces, low buildings, and lots shall be shown on the profile.
3. Locations of all special features such as connection to existing sewers, concrete encasements, collar walls, ductile iron pipe sections, elevated sewers, piers, special manhole covers such as vented outfall covers or sealed covers, etc.
4. All known existing structures both above and below ground which might interfere with the proposed construction, particularly water mains, gas mains, storm drains, utility conduits, etc.
5. The vertical datum used shall be the elevation above mean sea level with benchmarks shown on the plans.

(4) *Erosion and sedimentation control plan.*

(a) The Georgia Soil and Water Conservation Commission has taken provisions of ACT 599 and published the Manual for Erosion and Sediment Control in Georgia, 1992 edition (or any more current edition as they are published and/or amended). Sewer construction plans and specifications shall include appropriate segments of this manual. Developers, engineers and contractors performing work in the city are responsible for acquiring a copy of this manual and using the best practical methods contained therein to control the erosion and sedimentation of the construction site in conformance with the intent of ACT 599. Copies may be purchased from the Georgia Soil And Water Conservation Commission, P.O. Box 8024, Athens, Georgia 30603. For additional information, call the commission at 706-542-3065.

(b) An erosion and sediment control plan, meeting the requirements of applicable state regulations, shall be provided as part of the overall construction drawings.

(5) *Detail drawings.*

(a) *Sewer details.* Special detail drawings made to a scale to clearly show the nature of the design shall be furnished to show the following particulars:

1. All stream crossings and storm drain outlets with elevations of the stream bed and of normal and extreme high and low water levels.

2. Details of special sewer joints and cross sections.
 3. Details of special sewer appurtenances such as manholes, service connections, elevated sewers, piers, pipe bedding, special highway crossings, railroad crossings, etc.
- (b) *Erosion control details.* Erosion control details and symbols may be taken directly from the Manual for Erosion and Sediment Control in Georgia, 1992, referenced above.
- (6) *As-built drawings.* At the completion of construction (and preferably prior to the final field inspection), "as-built" drawings of the project shall be submitted to the city to serve as a permanent record of the project and shall be furnished in the form of one (1) set of mylar sepias (or other suitable form of reproducible drawings) and two (2) sets of blue line copies. Acceptance by the city will be made only after satisfactory as-built drawings have been submitted. As-built drawings will be in the same format as the original construction plans and normally will be an updated version of the construction plans. As-built drawing shall be prepared by the project design professional. Each sheet of these drawings shall bear the words "as-built" or "record drawings." Guidelines for preparation of as-builts:
1. As-built drawings will be in the same format as the original construction plans.
 2. Contour lines are required.
 3. Road names and lot numbers should be on plan.
 4. "As-built" or "record drawing" is to be stamped in large clear print on plans.
 5. Sheet should be no larger than twenty-four (24) inches × thirty-six (36) inches.
 6. Lateral locations must show distance from the downstream manhole. Ends of lateral lines must show distance from downstream manhole and offset distance from the main line. Approximate depth of end of lateral must be indicated.
 7. Show elevations of manhole inverts and tops.
 8. Show field-measured distance between manholes.
 9. For any lines which are outside paved streets, show the field-measured azimuth or bearing of the line from manhole to manhole.
 10. Show actual slope of pipe.
 11. When a phase of a subdivision is completed, a location sketch of entire subdivision with said phase outlined shall appear on plans.
 12. Maximum error of as-built measurements shall be:
 - a. *Manhole inverts:* measure to one-tenth (0.10) feet with maximum vertical error of one-fifteenth (0.15) feet per one thousand (1,000) feet of horizontal traverse.
 - b. *Manhole tops:* measure to one-tenth (0.10) feet with maximum vertical error of one-half (0.50) feet per one thousand (1,000) feet of horizontal traverse.
 - c. *Horizontal locations:* Measure to nearest one (1.0) foot with allowable error of one (1.0) foot per one thousand (1,000) feet of traverse.
- (7) *Easement acquisition and utility encroachment permits.*
- (a) It shall be the responsibility of the developer to obtain any off-site easements required to connect the project to existing public sewers. Easements will be conveyed to the city for all facilities which are to be conveyed to the city. This process must be started early enough to allow construction of the sewer before any building construction is to begin. No building permits or sewer tap applications can be issued until off-site sewers have been constructed and accepted. This condition shall override any provision for speed up of house starts such as furnishing a bond to guarantee completion of the streets and other appurtenances.
- (b) All easements shall allow adequate room to construct the sewer and appurtenances. Permanent easements shall be a minimum of twenty (20) feet wide, ten (10) feet on each side of the line; except that when the depth of the sewer exceeds ten (10) feet the required sewer easement width shall increase such that the easement width is at least twice the depth from the ground surface to bottom of the pipe. Designs involving utilities sharing a common easement will be coordinated with the utilities to insure adequate separation of utilities and overall easement width is achieved.
- (c) Easement drawings for work outside the development shall be furnished and recorded prior to approval of the sewer plans. The drawings shall be of a size suitable for legal recording and shall be prepared by a state registered land surveyor. The drawing will show property lines, the name of property owners with the length of line encroaching on each property owner, size of line, line designation, manhole numbers and stations, width of permanent and construction easement, scale of drawing, north arrow, land lot and district numbers, and a tie to the

nearest land lot corner. Any streets or other existing easements shall also be shown. The title block shall be shown as follows:

City of Cartersville

NAME OF OUTFALL OR SUBDIVISION

EASEMENT FOR PROPOSED

SANITARY SEWER CROSSING

PROPERTY OF

John Doe

LL: District: Section: Date: Revised Date:

(d) The engineer shall furnish appropriate drawings for submittal to the appropriate permitting agency of any state or federal highways, railroads, power lines, water lines, gas lines, petroleum lines, or any other utility lines on which the sewer construction will encroach. The drawing shall be eight and one-half (8 1/2) inches × eleven (11) inches and shall show a plan view and profile view. The drawing will show the same information required for easement drawings. Also, the drawing will show the right-of-way of the existing street or utility, the owner's designation of the line, the name or number of the nearest intersection or mile post or tower number and the distance to that appurtenance. The clearance distance between the street surface, or the bottom of the rail, or the utility and the sewer will be shown. The drawing will show the type of material to be used for the sewer and the method of construction to be used. The drawing will also contain any other special information required by the controlling authority of the facility on which the sewer is encroaching. A minimum of five (5) copies of the utility encroachment drawing will be furnished with the plans when they are submitted for approval. The engineer is also responsible for furnishing a completed encroachment permit application ready for signature by department superintendent. Construction permits will not be issued until the utility encroachment permit has been obtained and until any special conditions such as insurance requirements have been complied with.

(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-93. Design criteria and materials for sewers.

(1) *Generally.* The criteria listed herein is not intended to cover all aspects of design, but rather to mention the basic guidelines and those particulars that are required by the city water department. For more detailed criteria, the reader should refer to standard references such as "Ten States Standards," Georgia EPD rules, Water Pollution Environment Federation Manual of Practice No. FD-5, and other available literature.

(2) *Types of sewers.* All sewers for the conveyance of wastewater shall be designed as separate sanitary sewers in which groundwater, stormwater or other runoff from roofs, streets, parking lots, foundation drains and any source other than wastewater are excluded. Overflows from sewers shall not be permitted.

(3) *Design period.* Gravity sewer pipelines should, as a minimum, be designed with capacity sufficient to handle the estimated tributary population. Tributary population is considered to be all areas upstream of the discharge point of the system being designed as well as any anticipated pumped flow from other basins. Sewers will be designed and installed along the entire road frontage of the property where gravity service is feasible and to the uppermost property line of the development being served.

(4) *Capacity and size determinations.* In determining the required capacities of sanitary sewers, the following factors should be considered:

- (1) Maximum hourly sewage flow.
- (2) Additional maximum sewage or waste flow from industrial plants.
- (3) Ground water infiltration.
- (4) Topography of the area.
- (5) Depth of excavation.

New sewer systems shall be designed on the basis of an average daily flow of sewage of not less than four hundred (400) gallons per household per day. Normally, all sewers shall be designed for a peak flow of not less than two and one-half (2 1/2) times the average flow; this peak factor will be higher for smaller basins (see design guides). Sewers should be designed to carry the peak flow when flowing at a depth of two-thirds (2/3) pipe diameter.

The city land use plan should be consulted and special consideration given to commercial and industrial areas. Where developers are installing major trunk lines or interceptor sewers, the city's long range plan should be consulted as a guide and the sewer should as a minimum be of the size called for in the long range plan. If proposed land use conditions have changed subsequent to the plan, these changes should be factored into the determination.

(5) *Special city requirements.*

(a) *Distance between manholes.* Maximum distance between manholes shall be four hundred (400) feet.

(b) *Depth.* Any sewers installed in the street shall, topography permitting, be sufficiently deep to provide five (5) feet of cover over service laterals at the street right-of-way, and over any part of the main or service within the street right-of-way. The maximum depth for PVC pipe shall be fifteen (15) feet, depths in excess of this shall be ductile iron. Sewers installed in streets shall have maximum depth of twelve (12) feet unless otherwise approved. Any sewers on off-street easements shall have a minimum of three (3) feet of cover unless ductile iron pipe is used. Filling over the pipe to obtain minimum cover is not allowed.

(c) *Drop across manholes.* All manholes shall be provided with, a minimum vertical drop across the manhole (between in and out pipes) of one-fourth (0.25) feet.

(d) *Detection tape.* Detection tape shall be installed over all sewer pipe. Bury tape eighteen (18) to twenty-four (24) inches below grade. Use detection wire on all service laterals.

(6) *Slope.* All sewers shall be so designed and constructed to give mean velocities, when flowing full, of not less than two (2.0) feet per second based on Manning's formula using an "n" value of 0.013. The following are the minimum slopes which should be provided; however, slopes greater than these are desirable:

Minimum Slope in Feet

TABLE INSET:

Sewer Size (in inches)	Per 100 Feet
8	0.40
10	0.29
12	0.22
14	0.17
15	0.15
16	0.14
18	0.12
21	0.10
24	0.08

These minimum slopes will be used only when sufficient flows are expected to maintain a velocity of two (2.0) feet per second and maintain a cleaning action in the line. Sewers shall be laid with uniform slope between manholes. Sewers on ten (10) percent slope or greater shall be ductile iron pipe and shall be anchored securely with concrete anchors (See standard details) to prevent displacement by erosion or shock. Maximum slope of sewers shall be twenty (20) percent and sewers shall be designed at less than ten (10) percent whenever possible unless otherwise approved.

(7) *Increasing size.* When a small sewer is connected to a large one, the connection shall not be lower than matching the top of both sewers to the same elevation.

(8) *Gravity sewer pipe materials.* The city reserves the right to disallow any manufacturer that does not have a consistent, long-term record of quality control and successful product performance. Gravity sanitary sewer pipe up through fifteen-inch diameter will normally be polyvinyl chloride (PVC), solid wall type SDR 35 thickness meeting ASTM D3034. Ductile iron pipe (DIP) will be used where certain conditions exist (see discussion of DIP). For eighteen-inch diameter pipe and above, the contractor may have the option of using either polyvinyl chloride (PVC), reinforced concrete pipe (RCP), or ductile iron pipe. Bedding for sewer pipe shall be as follows (also see city standard details):

For PVC the minimum bedding shall be #57 or #89 crushed stone a minimum of six (6) inches below bottom of pipe extending up to six (6) inches above top of pipe for the full width of the trench.

For ductile iron pipe the minimum bedding shall be #57 or #89 crushed stone a minimum of six (6) inches below bottom of pipe extending up to the top of pipe.

In wet areas, the minimum bedding requirements will be increased as required to ensure a stable support under the pipe and on the sides of the pipe.

(a) *Ductile iron pipe (DIP).*

1. *Scope.* Ductile iron sewer pipe shall be required at all utility crossings with less than two (2) feet of clearance, in locations where cover is less than three (3) feet, at stream crossings, where slopes exceed ten (10) percent, and where cover exceeds fifteen (15) feet.

Ductile iron pipe shall be designed in accordance with ANSI Specification A21.50-81. The thickness and class of the pipe shall be governed by ANSI Specification A21.50-81, but shall be no less than class 50 thickness. Pipe shall be manufactured in accordance with ANSI Specification A21.51-81 latest revision.

Pipe shall be coal tar epoxy lined and seal coated with approved bituminous seal coat in accordance with AWWA C151, latest revision. Coal tar epoxy lining shall adhere to the following specifications.

2. *Joints.* DIP joints shall be of the bell and spigot type with push-on joints, conforming to ANSI Specification A21.11 or mechanical joints.

(b) *Polyvinyl chloride (PVC) sewer pipe.*

1. *Scope.* The contractor shall provide unplasticized polyvinyl chloride (PVC) plastic gravity sewer pipe meeting the requirements of ASTM D3034 (latest revision) in the sizes shown unless otherwise indicated on the contract documents.

2. *Materials.* Pipe and fittings shall meet the requirements as specified under ASTM D3034 (latest revision) for pipe through fifteen (15) inches and ASTM F679 for pipe eighteen (18) inches through twenty-seven (27) inches. All pipe and fittings shall be suitable for use as a gravity sewer conduit. Bell joints shall consist of an integral wall section with elastomeric gasket joint which provides a watertight seal. The pipe shall be capable of passing all tests which are detailed in this specification. Minimum wall thickness shall be SDR 35.

3. *Fittings.* All fittings and accessories shall be manufactured and furnished by the pipe supplier. They shall have bell and/or spigot configurations compatible with that of the pipe and shall have an equivalent wall thickness.

4. *Pipe and fittings tests.* Before shipping any pipe, the manufacturer shall submit shop drawings to the city and shall furnish written certification that all pipe through fifteen (15) inches meets ASTM Specification D3034 and that pipe eighteen (18) inches through twenty-four (24) inches meets ASTM F679. The city reserves the right to require additional laboratory testing at the developer's expense to verify minimum quality standards are being met.

5. *Pipe stiffness.* Minimum "pipe stiffness" (F/Y) at five (5) percent deflection shall be forty-six (46) psi for all sizes, when tested in accordance with ASTM Standard Method of Test D2412 (latest edition), to determine the "External Loading Properties of Plastic Pipe by Parallel-Plate Loading." There shall be no evidence of splitting, cracking, or breaking at a deflection of up to thirty (30) percent of the original diameter.

6. *Fusion quality.* There shall be no evidence of flaking, swelling, or disintegration when the pipe material is tested in accordance with ASTM D2152, "Quality of Extruded Poly (Vinyl Chloride) pipe by Acetone Immersion."

7. *Joint tightness.* Pipe and fitting joints shall comply with ASTM D3212 (latest edition) for "Joints for drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals." Joint assemblies shall not leak when subjected to both an internal and external hydrostatic test at equivalent pressures of ten and eight-tenths (10.8) psi gauge for a period of one (1) hour. Pipes shall be tested in straight alignment, axially deflected position, and by shear load test as otherwise defined in Paragraphs 7.2, 7.3, and 7.4 of ASTM D3212.

8. *Installation.* PVC pipe will be installed in accordance with ASTM D2321 (latest revision). Initial backfill shall be compacted to the densities outlined in D2321. The city may require random compaction tests at the developer's expense to insure compliance with D2321.

9. *Deflection limit.* Vertical deflection of installed pipe shall not exceed five (5) percent of the undeflected diameter as defined in ASTM D3034.

Upon completion of the pipe laying, the pipe will be tested for conditional acceptance. The test shall be performed by the contractor pulling a mandrel of specified dimensions through the pipeline.

(c) *Reinforced concrete pipe (RCP).*

1. *General.* The use of reinforced concrete pipe for sewers will be subject to approval on a case-by-case basis depending upon size of the sewer and site conditions. When approved for use, concrete gravity sewer pipe shall meet all materials and testing requirements of ASTM C-76, ASTM C-443, and ASTM C-497 (except where modified herein).

2. *Quality assurance.* The contractor must submit to the owner and engineer the concrete pipe manufacturer's evidence of a working quality control program for approval, prior to any pipe being manufactured. The program and standards of manufacturing must be established and well defined. The program must include the minimum following requirements:

a. A full time quality control technician.

b. A complete and working quality control laboratory capable of testing and recording the requirements set forth in these specifications for concrete pipe.

c. A zero (0) defect program for daily material testing and finished product testing to assure quality control as the pipe is being manufactured and shipped for this particular project.

3. *Guarantee.* The contractor shall provide a guarantee against defective materials and workmanship in accordance with the requirements of these specifications.

4. *Material.*

a. All concrete pipe and fittings twelve (12) inches in diameter and larger shall be reinforced concrete sewer pipe conforming to the latest requirements of ASTM C-76 with the following modifications: All concrete pipe with zero (0)--twenty (20) feet of fill shall be a minimum of Class III with four thousand five hundred (4,500) psi concrete. All pipe with twenty (20)--thirty (30) feet of fill shall be Class IV with four thousand five hundred (4,500) psi concrete. All pipe with thirty (30) feet of fill and over shall be Class V with five thousand five hundred (5,500) psi concrete.

b. Pipe shall have circumferential reinforcement as required for the particular class of pipe furnished. The bell and spigot of the joint shall contain circumferential and longitudinal reinforcement. Reinforced concrete pipe shall be centrifugally cast or vibrated, horizontally or vertically cast or made on a Packerhead machine and shall be furnished in lengths not more than twenty (20) feet and not less than eight (8) feet, except where short lengths are required for construction conditions. Reinforced concrete pipe shall have bell and spigot joints suitable for the use of a rubber gasket to be provided as a part of this item.

c. Concrete pipe for sanitary sewers shall have bell and spigot joints consisting of self-centering steel joint rings securely attached to the pipe reinforcing steel. The steel joint rings shall be suitable for use with a rubber O-ring type gasket to be provided as part of this item.

d. Bell and spigot joints consisting of self-centering steel joint rings shall have the joint rings securely attached to the pipe reinforcing steel. The rings which form the joint shall be made so that they will join with a close, sliding fit. The joint surfaces shall be such that the rubber gasket shall be confined on all sides and shall not support the weight of the pipe.

The spigot ring shall have an external groove accurately sized to receive the gasket. Special section steel for spigot rings shall conform to ASTM A-283, Grade A, or ASTM A-306, Grade 50.

The bell ring shall be flared to permit gradual deformation of the gasket when the joint is assembled. Minimum thickness of bell rings shall be three-sixteenths (3/16) inch. Bell rings one-fourth (1/4) inch or thicker shall conform to ASTM A-283, Grade A, or ASTM A-306, Grade 50. Bells less than one-fourth (1/4) inch thick shall conform to ASTM A-570, Grade A.

Each ring shall be precisely sized by expansion beyond the elastic limit of the steel and then gauged on an accurate template. All exposed surfaces of both rings shall be protected by a corrosion-resistant coating of zinc applied by an approved metalizing process after proper cleaning.

5. *Lining.* The coal tar epoxy system shall be Koppers 300 M, Porter Tarsel, Wise Chem CTE 200, Amercoat 78, Protecto 101 or equal.

The interior concrete or mortar surfaces of pipe and fittings are to be sandblasted and painted with one (1) coat of a high-build, coal tar epoxy system or two (2) coats of a standard coal tar epoxy system. The dry film thickness of the total system shall be sixteen (16) mils minimum on concrete or mortar surfaces and on steel joint ring surfaces.

Sandblasting shall result in a clean dry surface free of oil, grease, or other contaminants. Any air pockets over one-fourth (1/4) inch in diameter and one-eighth (1/8) inch deep appearing on the concrete surface after sandblasting will be filled with an epoxy sand patching material such as those sold by Sherwin-Williams, Glidden, or Moran. The epoxy sand patch should be troweled prior to the application of the coal tar epoxy. Any steel surfaces to be painted should be sandblasted, solvent cleaned, or wire brushed prior to painting. Application of the coal tar epoxy shall be by brush, roller, or spray system using equipment recommended by the manufacturer of the coal tar epoxy system. The temperature during application and curing of coal tar epoxy shall be as recommended by the manufacturer of the coal tar epoxy. Time between coats (if applicable) shall be as recommended by the manufacturer of the coal tar epoxy.

If the inside joint recess will be mortared and painted with coal tar epoxy in the field, the pipe supplier shall not paint the inside vertical surfaces at the ends of the pipe. When the inside joints will not be mortared in the field, the pipe supplier shall paint the inside vertical concrete or mortar surfaces at each end of the pipe.

The paint shall be extended continuously over the front lip of the steel spigot ring and a minimum of two (2) inches onto the sealing surface of unrestrained bell rings so that all interior joint surfaces which can be exposed to the fluid inside the pipe are coated.

(9) *Precast concrete manholes.*

(a) *Manholes.* Sewer manholes shall consist of precast reinforced concrete sections with eccentric top section, or flat slab for shallow manholes, and a base section conforming to the typical manhole details as shown on the standard detail drawings. Flat top manholes will be approved only if a need for such can be demonstrated by the design engineer.

(b) *Manhole sections.* Precast manhole sections shall be manufactured, tested, and marked in accordance with the latest provisions of ASTM Standard Specifications, Serial Designation C 478.

(c) *Manhole section joints.* Joints of the manhole sections shall be of the tongue-and-groove type with the inside tongue in the up position, sections shall be joined using a double strand seal of butyl mastic sealant (Kent Seal, Ram-Nech or equal). The inside and outside of all joints, lift holes and any bricks or precast adjusting rings shall be covered with non-shrink grout.

(d) *Lift holes.* Each section of the precast manhole shall have not more than two (2) holes for the purpose of handling and laying. These holes shall be sealed before backfilling using either rubber plugs specially designed for this purpose or with quick-setting cement mortar.

(e) *Manhole steps.* Manhole steps conforming to the applicable provisions of ASTM Specification C 478, latest edition, shall be of #4 steel reinforcing bars covered with polypropylene plastic or rubber and shall be supplied with depth rings and other necessary appurtenances. See the standard details for a typical manhole step detail.

(f) *Pipe holes.* Holes in precast bases to receive sewer pipe shall be precast at the factory at the required locations and heights. Knocking out of holes in the field will not be permitted on new construction; however, holes can be cored in the field with a coring machine. All manholes shall have Kor-N-Seal by Press Seal Gasket Corporation (or equal) rubber boots for all pipe entries/exits.

(g) *Inverts.* Manhole inverts shall be constructed of either concrete or brick in accordance with details on standard detail drawings and the invert (flow channel) shall have the same cross-section as the sewers which it connects. The manhole bench and invert shall be carefully formed to the required size and grade by gradual and even changes in direction. Changes in direction of flow through the invert shall be made to a true curve with as large a radius as the size of the manhole will permit. Inverts shall have a smooth trowel finish. The manhole bench shall be sloped thirty (30) degrees from the manhole wall toward the invert.

(h) *Manhole foundation.* The manhole base shall be set upon a twelve-inch minimum thickness compacted mat of size #57 crushed stone graded level. In wet areas the crushed stone mat shall be thickened as needed to provide a non-yielding foundation.

(i) *Brick.* Brickwork required to complete the precast concrete manhole shall be constructed using one (1) part portland cement to two (2) parts clean sand, meeting ASTM Specifications, Serial Designation C 144, thoroughly mixed to a workable plastic mixture. Brickwork shall be constructed in a neat and workmanlike manner. Nonshrink grout shall be used to grout interior and exterior exposed brick joints and faces. No more than three (3) courses of brick with nine-inch maximum total depth of bricks may be used to adjust manhole covers.

(j) *Frame and cover.* The cast iron frame for the manhole cover shall be set at the required elevation and thoroughly anchored to the masonry in a bed of mortar. Frames and covers shall be city standard casting design by Vulcan Foundry, Standard Model V1327-1-CWD (see standard drawings). Where manholes are constructed in paved areas, the top surface of the frame and cover shall be tilted, if necessary, to conform to the exact slope, crown and grade of the existing adjacent pavement. In areas where manhole tops may be submerged by street runoff or high flood waters, the manhole lid shall be water-tight by Vulcan Foundry, water-tight Model V2327-1-CWD.

(k) *Masonry work.* Masonry work shall be allowed to set for a period of not less than twenty-four (24) hours before being placed under traffic or in operation. All loose or waste material shall be removed from the interior of the manhole.

(l) *Location.* Manholes shall be installed at the end of each line; all changes in grade, size, or alignment; at all intersections; and at distances normally not greater than four hundred (400) feet. Cleanouts may be used only for special conditions and shall not be substituted for manholes nor installed at the ends of laterals greater than one hundred fifty (150) feet in length. Manholes in cross-country areas shall be elevated so that the top is twenty-four (24) inches above ground.

(m) *Drop manholes.* A drop pipe shall be provided for a sewer entering a manhole at an elevation of more than three (3.0) feet above the manhole invert. The drop pipe shall be of PVC materials with ductile iron mechanical joint fittings. All outside ninety-degree elbows shall have concrete support blocking poured below the elbow to rest on stable undisturbed earth. Outside drop manhole will be noted on the construction plans at any time the drop exceeds three (3.0) feet. Where the difference in elevation between the incoming sewer and the manhole invert is less than three (3.0) feet, the invert shall be sloped from invert to invert to prevent solids deposition. Areas around the pipe will be backfilled with #57 or #89 crushed stone.

(10) *Casings.* Steel casing pipe shall be used where boring and jacking of more than twenty (20) feet in length is required for installation. Steel casing pipe shall be standard class thickness with a minimum yield strength of thirty-five thousand (35,000) psi and shall conform to the requirements of ASTM A139. It shall be fully coated on the exterior and interior with a coal tar coating. The casing pipe diameter shall be six (6) to eight (8) inches greater than the "bell" diameter of the carrier pipe.

Wherever steel casing is required, the carrier pipe shall be ductile iron pipe with push-on joints or PVC. Approved spacers made of stainless steel straps with nylon skids shall be used to center the carrier pipe; two (2) spacers per section of pipe will be used.

(11) *Wastewater lift stations.* The following minimum requirements apply to wastewater lift stations:

(a) *General.*

1. Minimum pump size for pump stations shall be a minimum rated capacity of one hundred fifty (150) gpm and minimum ten (10) hp rated motors. Lift stations shall utilize two (2) submersible centrifugal pumps each having a capacity equal to the design flow. Provide a spare pump of identical capacity.
2. Lift stations having a capacity of five hundred (500) gpm or more shall be reviewed on an individual basis and may have requirements differing from those outlined herein.
3. Force mains shall be sized to provide a velocity of at least two (2) feet per second.
4. The design shall allow for easy removal of any pump or equipment item without the need of shut-down of the entire lift station.
5. The design engineer should consult the city water department after preliminary design data has been developed for information on approved pump manufacturers. The city reserves the right to review each application on an individual basis and to reject the use of non-approved manufacturers or designs.

(b) *Submittals.*

1. Submittal of construction plans shall include the following lift station information:
 - a. Capacity calculations. Use one (1) gpm capacity per house on residential developments of less than two hundred (200) units, except that the minimum pump capacity shall be one hundred fifty (150) gpm.
 - b. System head calculations; tabulated and plotted on the pump curve. Include a plot of force main velocity.
 - c. Standard drawings, details and specifications sufficient to ascertain compliance with these regulations.
 - d. Cycle time. Calculations showing determination of wet well volume and cycle time at design conditions. Wet well volume should be sufficient to provide a cycle time of no less than five (5) minutes from a pump "on" to the next pump "on" time.

- e. Storage volume. Calculations showing volume of storage available in the event of a power outage. The storage zone shall be delineated on plan and profile drawings of the sewer system. (See subsection (d), Standby power, below.)
 - f. Construction drawings and specifications in sufficient detail to ascertain compliance with these regulations.
 - g. Buoyancy computations showing that structures are protected against flotation.
2. *Shop drawings.* After construction plan approval but before purchasing any lift station equipment, shop drawings shall be submitted including the following information:
 - a. Manufacturer's catalog sheets, performance curves, installation drawings, specifications and list of options for the specific pump that is offered for approval.
 - b. Similar catalog data for controls, valves, hatches, yard hydrants, precast wet well and other manufactured items.
 3. *Certification.* After installation and before placing the system into full operation, the work must be inspected by the developer's engineer who must then issue a certification to the city verifying that all work has been done in accordance with approved plans. After acceptance of the work by the city, a factory representative shall inspect and start up the system certifying rotation, capacity, amperage draw, lack of vibration and other standard check points. This certification shall state the beginning date of the warranty and include a copy of the warranty. The factory representative shall provide a minimum of four (4) hours training.
 4. *O&M Manuals.* On or before the date of start-up, five (5) sets of factory O&M manuals shall be delivered to the city. These shall include the name of the purchaser, the serial numbers of pumps, detailed wiring schematics, telephone number and address for purchase of parts.
 5. *As-built drawings.* After construction is complete as-built drawings shall be furnished including one (1) set of mylar sepias plus two (2) sets of prints.
- (c) *Spare parts.*
1. Lift stations shall be supplied with one (1) complete spare pump, one (1) complete spare set of float switches plus a complete set of manufacturer's recommended spare parts.
 2. Reserved.
- (d) *Standby power.*
1. The minimum requirement for standby power for lift stations shall be that each station have a permanent in-place generator and shall have an automatic transfer switch.
 2. Emergency standby power will be supplied by an on-site emergency generator. The generator shall be diesel powered with an automatic transfer switch and provisions for an automatic exercise cycle.
- (e) *Site requirements.*
1. *Flooding.* Lift stations shall remain fully operational and accessible during the twenty-five-year flood. All electrical controls shall be above the one-hundred-year flood level. All motors and mechanical equipment shall be protected against physical damage from the one-hundred-year flood.
 2. *Access road.* Access roads shall be paved with a twelve-foot wide surface of either concrete (four (4) inches thick with wire mesh) or asphalt (six (6) inches graded aggregate base plus two (2) inches Type E asphalt). Maximum grade shall be twenty (20) percent.
 3. *Ownership.* Both the lift station site and the access road right-of-way shall have ownership dedicated to the city, and this shall be indicated on the subdivision plat. The dedicated space for the lift station shall include sufficient space for parking of two (2) trucks, plus turn-around, plus slope maintenance. The dedicated width on road right-of-way shall be thirty (30) feet minimum.
 4. *Fencing.* Lift station sites shall be fenced with a minimum of six-foot high chain link fencing topped with three (3) strands of barbed wire. Access gates shall be a minimum of fifteen (15) feet in width. The space inside the fencing shall be large enough to facilitate service vehicle access to the pumping station wet well and other facilities. A paved turn around area shall be provided whenever the access road length exceeds two hundred (200) feet or when the road grade exceeds ten (10) percent.
 5. *Water supply.* A metered water supply line (three-fourths-inch minimum size) shall be installed to the site, and a freeze-proof yard hydrant located near the wet well. The hydrant shall be equipped with a suitable backflow preventer.
 6. *Lighting.* One (1) pole-mounted, photo cell controlled, one-hundred-watt high pressure sodium security light shall be installed. It shall be equipped with a manual on/off switch (located in the main control panel) to override the photo cell control.

7. *Screening.* Where natural screening is not present to screen the site from view of residences, special plantings shall be installed to screen the site.

8. *Ground covers.* All unpaved ground areas inside the fence and extending four (4) feet beyond the fence shall be treated with a herbicide and covered with a geotextile fabric, followed with a four-inch thick layer of #57 stone. The geotextile fabric shall be a non-woven polypropylene weighing eight (8) oz./S.Y. with a minimum burst strength of two hundred fifty (250) psi, such as Amoco type 4553 or equal.

(f) *Design features.*

1. *Wet well volume.* The wet well volume shall be sized to limit pump cycles to no more than four (4) cycles per hour under worst conditions.

2. *Ventilation.* For wet wells, the minimum requirement shall be a single six-inch vent with stainless steel mesh screen designed for natural ventilation. Where conditions are conducive to formation of hazardous conditions (in the design engineer's opinion) then mechanical ventilation shall be provided. For dry wells, mechanical ventilation shall be required.

3. *Structures.* Submersible lift stations shall have a wet well structure and a separate valve pit. Both structures shall be precast concrete with a monolithic base. The valve pit shall be a minimum of four (4) feet × four (4) feet × five (5) feet deep with manhole steps, and provided with a floor drain pipe, and a three-foot × three-foot lockable aluminum access hatch. Wet wells may be either round or rectangular and shall have a diameter or width of at least four (4) feet. Wet wells shall be sized to meet cycle time requirements with a drawdown (i.e. the distance between high water level and low water level) of not more than three (3.0) feet. The wet well shall have a lockable aluminum hatch large enough for easy removal of pumps. Riser sections in precast units shall be sealed watertight using two (2) strands of mastic and a coating of mortar on the inside and outside of the structure. Structures shall be adequately reinforced for all loading conditions normally encountered during shipping, construction and service. All openings (for pipes, hatch, conduits) shall be either cast in place or neatly cut. Sewer pipe connections shall utilize rubber boot connectors, and be watertight. The wet well shall be equipped with an aluminum ladder.

4. *Accessories.* All materials inside the wet well and valve pit shall be corrosion resistant. Mechanical equipment requiring ferrous metals shall have a coal tar epoxy coating. Guide rails for pumps shall be stainless steel. Miscellaneous metals including fasteners shall be aluminum or stainless steel; anchor bolts shall be stainless steel.

5. *Pressure gauge.* A pressure gauge shall be installed on the force main downstream of the gate valves, inside the valve pit and visible from ground level. A corporation stop shall be installed on the tap to allow removal of the gauge.

6. *Valves.* The discharge pipe of each pump shall have a check valve followed by a gate valve before the two (2) pipes join into a common force main.

7. *Surge control valves.* The pumping system shall be checked to determine if a surge control valve is required. If a valve is required, it shall be located within the valve pit on the common force main and a drain line installed to drain to the wet well.

(g) *Pump features.* Pumps shall have the following features:

1. Non-clog impeller.

2. Be capable of passing a three-inch sphere.

3. Be capable of dry operation without overheating.

4. Have dual mechanical seals with seal leak indicator light in the control panel.

5. Pump and motor casings shall be cast iron, and all fasteners shall be stainless steel.

6. Motor shall be selected to be non-overloading under all operating conditions.

7. Motor winding shall have a heat sensor with auto reset to prevent overheating; three-phase motors shall have two (2) sensors.

8. Operating speed of the pump shall not exceed one thousand eight hundred (1,800) rpm without special approval.

9. Motor shall have upper and lower roller bearings.

10. The pump shall be automatically connected to the discharge connection elbow when lowered into place, and shall be easily removed for inspection or service. There shall be no need for personnel to enter pump well. Sealing of the pumping unit to the discharge connection elbow shall be accomplished by a simple linear downward motion of the pump. Each pump shall be equipped with a chain (of aluminum or other non-corrosive material) for easy removal.

(h) *Force main.*

1. The force main shall be sized for a minimum velocity of two (2) feet per second with one (1) pump operating.
2. Force mains shall be ductile iron pipe.
3. The force main profile shall slope continuously upward where practical. If high points occur where air could be trapped in the pipe, then an air release valve (of the type made for sewage applications) will be installed (in a manhole) at the high points.

(i) *Electrical.*

1. Lift station controls and electrical components shall be factory-wired in completely weather proof stainless steel metal cabinets (NEMA 4X stainless steel). The cabinet shall be provided with condensate heaters. Spare fuses of each type that is used in the electrical/control system shall be furnished.
2. A main circuit breaker shall be installed to disconnect power to the entire station.
3. Three phase power will be provided for all motors at the developers expense.
4. Protection against voltage surge and loss of a phase shall be provided.
5. The factory-wired panel shall be equipped with a ground bus and neutral bus. Terminal shall be suitable for either aluminum or copper wire. All internal panel wiring shall be copper.
6. Motors shall be suitable for either two hundred thirty (230) volt or four hundred sixty (460) volt operation. Design engineer shall consult with the city electrical department to verify specifics pertaining to electrical power availability.
7. Wet well level shall be controlled by four (4) sealed mercury tube float switches. All floats shall be provided with twenty-five (25) feet of Type SJO flexible cord and shall be attached to a bracket mounted at the top of the wet well. Float functions shall be as follows:

TABLE INSET:

Float No. 1	Low Level (Pumps Off)
Float No. 2	High Level (Lead Pump On)
Float No. 3	Extra High Level (Lag Pump On)
Float No. 4	Surcharge Level (Alarm Activated)

8. The pump control system shall include the following features:
 - a. Lead pump/lag pump alternator.
 - b. Alarm light and horn to indicate high water level.
 - c. Seal failure indicating light.
 - d. Pump failure indicating light.
 - e. Condensate heater.
 - f. Lead pump selector switch.
 - g. H-O-A switch and run light for each pump.
 - h. Control voltage shall be one hundred twenty (120) V.
 - i. Wiring shall be neatly tied and number coded to facilitate maintenance. A schematic diagram shall be furnished with the panel.
 - j. A one hundred twenty (120) V GFCI type electrical receptacle shall be located at the control panel.
 - k. Pump stations will be equipped with a remote transmitting unit and telemetering circuitry connecting to the city's SCADA system. The design engineer should consult the city for specific requirements at the beginning of design.
- (j) *Warranty.* Regardless of the manufacturer's warranty terms, the developer will be responsible for all repairs necessary within one (1) year from the date the station is completed and approved by the city. The developer will be required to furnish such assurances to the city as deemed appropriate by the city to ensure prompt action. (Ord. No. 32-98, § 1, 8-27-98; Ord. No. 50-98, § 4, 1-7-99)

Sec. 7.5-94. Construction methods.

(1) *Licensing and safety.* All contractors who work on sewer systems that will be owned by the city must be licensed in accordance with state law and local ordinance. Compliance with applicable safety regulations is the responsibility of each company engaged in the work; the city assumes no responsibility for the actions of others on the job site. It is the responsibility of those installing sanitary sewers, lift stations and related appurtenances to conform to OSHA regulations, 29 CFR Part 1926, Subpart P, Paragraphs 1926.650 through 1926.653.

Publications from OSHA can be obtained by contacting OSHA Publications Distribution, Washington, D.C.

(2) *Construction permits.* No construction shall be allowed until a construction permit has been issued by the city.

The contractor shall submit one (1) copy of the approved construction plans which have been stamped approved. The contractor shall furnish his name and address, telephone number. He shall also furnish the name, address and phone number of the person in charge of the project and any subcontractors and the name and telephone number of a responsible person who can be contacted in case of emergencies during nonworking hours.

The contractor shall furnish his construction schedule and shall notify the city one (1) business day prior to doing any work. Once the contractor begins work, he shall proceed in a workmanlike manner and shall complete the work in a reasonable time without undue off days and periods of inactivity which make it hard for the city to keep up with his activity.

(3) *Changes from approved plans.* Any major changes from the approved plans will require that the engineer submit revised drawings along with a request explaining the reason for the change prior to construction of the change. Any deviation from city standards will be considered a major change as will any change that will affect capacity, longevity, operation or maintenance of the facility. Any deviation from approved materials will not be accepted without prior approval.

(4) *Trench excavation.* Sewer lines shall normally be installed by open-cut trench excavation. Trenches shall be cut true to the lines and grades shown on the plans.

Pipe trenches shall not be excavated more than one hundred (100) feet in advance of pipe laying, and all work shall be performed to cause the least possible inconvenience to the public. Adequate temporary bridges or crossings shall be constructed and maintained where required to permit uninterrupted vehicular and pedestrian traffic.

All excavations shall be adequately guarded with barricades and lights in compliance with all OSHA and state department of transportation requirements so as to protect the public and workers from hazard.

Excavations adjacent to existing or proposed buildings and structures, or in paved streets or alleys shall be adequately protected by the use of trench boxes, sheeting, shoring and bracing to prevent cave-ins of the excavation, or the undermining or subsequent settlement of adjacent structures or pavements. Underpinning of adjacent structures shall be done when necessary to maintain structures in safe condition.

Streets, sidewalks, landscapes, and other public and private property disturbed in the course of the work shall be restored to as near as original condition as possible or better in a manner satisfactory to the city.

Trenches shall be kept free of water by pumping or well-pointing, as determined by the contractor. No structure shall be built or pipe shall be laid in water. Water shall not be allowed to flow over or rise upon any concrete, masonry or pipe until the same has been inspected and the concrete or joint material has thoroughly set. All water pumped, bailed, or otherwise removed from the trench or other excavation shall be conveyed in a proper manner to a suitable place of discharge. Such discharge shall not cause injury to public health, property, work completed, work in progress, or to any street surface, or cause any interference with the use of same by the public.

Construction occurring around active sewer systems shall be done in such a way so as to prevent the spillage of wastewater.

(5) *Rock excavation.* Drilling and blasting operations shall be conducted with due regard for the safety of persons and property in the vicinity and in strict conformity with requirements of all ordinances, laws and regulations governing blasting and the use of explosives. Rock excavation near existing pipelines or other structures shall be conducted with the utmost care to avoid damage. Injury or damage to other structures and properties are the sole responsibility of the installation contractor and shall be promptly repaired by the contractor to the satisfaction of the city and property owner. Rock in trenches shall be excavated over the horizontal limits of excavation and to depths as follows:

TABLE INSET:

Size of Pipeline (in inches)	Depth of Excavation Below Bottom of Sewer Pipe (in inches)
4 to 8	6
8 to 18	8
18 to 30	10

The undercut space shall then be brought up to grade by backfilling with size #57 crushed stone material or approved equal.

(6) *Installation of sewer pipe.* Construction stake-out will be required prior to construction of sewer lines. As a minimum, the horizontal alignment will be staked at one-hundred-foot intervals and each manhole will be located with a centerline stake and two (2) offset hubs. "Cuts" to invert elevations will be shown for each manhole entry and exit pipe.

Pipe and accessories shall at all times be handled with care to avoid damage. Whether moved by hand, skidways or hoists, material shall not be dropped or bumped. The interior of all pipe shall be kept free from dirt and foreign matter at all times. Each joint of pipe shall be unloaded opposite or near the place where it is to be laid in the trench.

All such material that is defective in manufacture or has been damaged in transit or after delivery shall be removed from the job site.

Sewer pipes shall be joined by "push-on" joints using elastomeric gaskets to affect the pressure seal. The ends of pipe to be joined and the gaskets shall be cleaned immediately before assembly, and the assembly shall be made as recommended by the pipe manufacturer. Lubricant used must be non-toxic and supplied or approved for use by the pipe manufacturer. Sewer pipes shall be laid in the uphill direction with the bells pointing upgrade. Any variation from this procedure shall require approval from the city.

When pipe laying is not in progress, the open ends of installed pipe shall be plugged with a watertight plug to prevent entrance of trench water into the line.

Bedding for pipe shall normally be as listed below (also see city standard details):

For PVC the minimum bedding shall be #57 or #89 crushed stone a minimum of six (6) inches below the bottom of the pipe to six (6) inches above the top of the pipe for the full width of the trench.

For concrete and ductile iron pipe the minimum bedding shall be #57 or #89 crushed stone a minimum of six (6) inches below bottom of pipe and initial backfill to the top of pipe for the full width of the trench.

In wet areas, the minimum bedding requirements will be increased as required to ensure a stable support under the pipe and on the sides of the pipe.

Backfill material up to twelve (12) inches above the top of the pipe shall be compacted dry, loose, soil unless PVC is used in which case the first six (6) inches above the top of pipe is required to be crushed stone. If such material is not available from the site then #57 stone shall be used to backfill up to twelve (12) inches above the top of the pipe. Backfilling the remainder of the trench may utilize soil and blasted rock (not over twelve (12) inches in any dimension) compacted sufficiently to avoid excessive settlement. Under no circumstances will tree parts, vegetation, building materials or any other type of debris be used for backfill.

All backfill beneath roads, sidewalks or other critical areas shall be compacted to ninety-five (95) percent Standard Proctor or as otherwise required by the DOT or other such agency having jurisdiction using mechanical tamping equipment. Moisture control of the material may be required to achieve this compaction and hauling in of select material may be required. Compaction testing and certification by an independent soil testing company will be required in these areas at the developer's expense.

(7) *Railroad crossings.* All railroad crossing shall conform to the requirements of the American Railway Engineering Association Manual for Railway Engineering, Part 5. The contractor shall secure permission from the railroads to schedule the work so as not to interfere with the operation of the railroads. The contractor shall be held responsible for any delays or damages occurring to the railroads. The contractor will furnish the railroad with such additional insurance as may be required, cost of same to be borne by the contractor, together with the costs

for flagmen, watchmen, temporary work of any nature, safety devices and any other items that may be imposed by the railroad.

(8) *Highway crossings.* All construction work in the state highway right-of-way shall be approved by the state department of transportation. Developer shall be responsible for obtaining encroachment permits.

(9) *Stream crossings.* The preferred method of crossing a river, stream, creek, impoundments, or wet weather ditch is with a minimum of six (6) inches of cover between the lowest point in the stream and the top of outside diameter of the pipe. Ductile iron pipe is required for all stream crossings and shall extend a minimum of ten (10) feet beyond the top of bank on each side. Concrete collars or encasement must be provided at all joints for ductile iron pipe with less than three (3) feet of cover.

The stream bed and sides at the crossing site shall be protected from erosion with the use of riprap, as defined and sized in the Manual For Erosion and Sediment Control In Georgia, Appendix C--Construction Materials, 1992 or most current or amended edition.

Aerial crossings will require detailed plans and will be allowed only when, in the city's opinion there is no reasonable alternative.

Erosion control measures shall be installed prior to installing pipe across any stream. All work should be performed when stream flows are at their lowest, and all work should be performed as quickly and safely as possible. As soon as conditions permit, the stream bed shall be cleared of all falsework, debris, and other obstructions placed therein or caused by the construction operations. Erosion control measures can include, but are not limited to, the following items:

- (a) Silt fencing, types A, B, and/or C.
- (b) Erosion control checkdams.
- (c) Channel diversion through temporary storm drain pipe.
- (d) Rock filter dams.

The construction and installation of these various structures are detailed in the Manual for Erosion and Sedimentation Control in Georgia or the state department of transportation standards and construction details, both of which are available for purchase by the contractor.

(10) *Casing for sewers.* Where pipe is required to be installed under railroads, highways, streets or other facilities by jacking or boring methods, construction shall be done in a manner that will not interfere with the operation of the facility, and shall not weaken the roadbed or structure.

The diameter of the bore shall conform to the outside diameter and circumference of the casing pipe as closely as practicable. Any voids which develop during the installation operation shall be pressure grouted. Each segment of the casing pipe shall be welded (full circumference butt weld) to the adjoining segment. The completed casing shall have no sags or crowns which cause the grade for any segment to be less than the minimum slope for the size pipe being installed.

The carrier pipe shall be fitted with approved spacers to secure its position within the casing. At each end of the casing pipe the void between the carrier pipe and casing shall be sealed with brick and mortar.

(11) *Replacement of pavement.* Contractor shall fully restore and replace all pavement, curbs, gutters, sidewalks and other surface structures removed or disturbed, to a condition that is equal to or better than the original condition in a manner satisfactory to the city (see standard details).

(12) *Location/protection of existing underground utilities.* It is the responsibility of the contractor to locate all underground utilities and to protect same. Utility lines or services damaged by the contractor shall be repaired by the contractor at the contractor's own expense. The contractor has sole responsibility of complying with all provisions of the Utilities Protection Code.

(13) *Protection of water supply and other utilities.* The city has an established cross-connection program (3/6/86) to prevent the entry of contaminants or pollutants into any area of the potable water supply through the control of cross connections. It is illegal to introduce any substance into or to have any cross connections with the potable water supply. There shall be no physical connection between a public or private potable water supply system and a sanitary sewer which would permit the passage of any sewage or polluted water into the potable water supply.

Whenever possible, sewers should be laid at least ten (10) feet horizontally from any existing or proposed water main. Should conditions prevent a separation of ten (10) feet, the lines shall be laid in separate trenches.

(14) *Sewer services.* A sewer service shall be provided for every existing or proposed lot or building. All sewer services shall be a minimum of six (6) inches in diameter unless otherwise specified. All service lines shall be designed to maintain a minimum of two (2) feet/second sewer velocity. All services shall be shown on the

construction and as-built drawings. A common service shall not be allowed for two (2) or more buildings. The service shall extend to five (5) feet inside the property line of the lot being served and normally be within ten (10) feet of the lower corner of the lot. All service laterals shall be a minimum of five (5) feet deep at the property line. Where five (5) feet of cover cannot be achieved, sewer services shall be constructed of ductile iron. A ninety-degree bend, constructed from two (2) forty-five-degree fittings shall be installed at the end of all sewer services with a vertical section of pipe to extend a minimum of four (4) feet above existing ground level (See standard details). Connections to the main exceeding eight (8) feet in depth may have the saddle or tee rotated to a bend inserted in the service to provide five-foot lateral depth at the property line.

The developer shall be responsible for serving all lots developed. On any lot where the service cannot be found, the developer shall be responsible for payment of the cost of installation of the service. Also, unless noted on the final plat, the service shall be low enough to serve the first floor elevation at the building line.

Install fourteen (14) gauge detector wire on all laterals.

The builder shall be responsible for the location of the service prior to the pouring of the foundation, driveway or other appurtenance. The city will not be responsible for any house built too low to be served nor for any service covered by construction.

No plumber or contractor will be allowed to connect to the sewerage system except to the end of the service provided for his connection. Also, any service provided will be utilized without the installation of additional services.

(15) *Clean up.* Prior to requesting the "completion of sewer construction" inspection, the contractor shall remove and dispose of in an acceptable manner all shipping timbers, shipping bands, spacers, excess materials, broken material, crates, boxes and any other material brought to the job site.

Any work areas within public right-of-way or property outside of the development that were damaged by the sewer construction shall be repaired or replaced with the same kind of material as existed prior to the damage occurring. All easement areas shall be cleared of trees, stumps and other debris and left in a condition such that the easement can be maintained by bush-hog equipment.

All shoulders, ditches, culverts, and other areas impacted by the sewer construction shall be at the proper grades and smooth in appearance. All manhole covers shall be brought to grade.

A uniform stand of grass or mulch for erosion protection, as defined in the Manual for Erosion and Sediment Control in Georgia, is required over all construction easements and sanitary sewer easements prior to the city's acceptance of the sewer. Use a grass mixture consisting of at least fifty (50) percent fescue.

(Ord. No. 32-98, § 1, 8-27-98; Ord. No. 50-98, § 7, 1-7-99)

Sec. 7.5-95. Inspection of sewers.

(1) *City inspection.* The developer's contractor will be responsible for the quality, accuracy and workmanship of his completed work. City personnel will visit the job site on a periodic basis and will make spot checks as they deem appropriate. The city shall have the right to review and inspect all construction and may reject any work that does not meet quality control standards.

(2) *Access to project.* Authorized representatives of the city, which may include city employees, the city engineer, state or federal agencies, shall have access to the site for inspection at any time.

(3) *Communications during construction.* A preconstruction conference will be required for all projects. The developer has sole responsibility for scheduling. The developer, design professional, contractor, and subcontractor(s) are required to meet with the city and all private utilities in this conference. The contractor will notify the city in writing two (2) days before starting construction. The contractor will provide notification by phone any time the work is to be vacated and will provide notice by phone prior to resuming work. The contractor shall request the final inspection. The city inspector may have informal verbal communications with the contractor foreman or superintendent at any time during construction. The city inspector will not direct the actions of contractor's workmen.

(4) *Concealed work.* The city inspector may direct that the contractor notify the city and receive inspection approval prior to concealing certain work such as manhole foundations, pipe bedding, tees, bends, service laterals, or other appurtenances. At the city's discretion, the city may require work to be uncovered which was not inspected prior to backfilling.

(5) *Minimum inspection by developer.* The following minimum information shall be determined and certified by the engineer:

(a) *Horizontal location.* Horizontal location of the line will be checked by measuring as-built distances between manholes and bearings from manhole to manhole.

(b) *Elevation and slope.* Elevation of each invert and top of manhole will be measured and recorded. Actual pipe slope will be computed and any segment having less than minimum allowable slope will be rejected and re-done.

(6) *City inspection.* Cost for all testing shall be paid for by the developer.

(a) *Manhole construction.* Manholes will be visually inspected to check for plugging of lift holes, use of connecting boots, use of joint material, leakage, proper invert construction, proper setting of frame and cover.

(b) *Pipe straightness.* Sections of sewer line will be visually checked for straightness. A passing section shall show at least eighty (80) percent of a full circle when observed from one (1) end. Any section which fails this visual test shall be further checked. The section shall have water run through it sufficient to fill any sags that may exist. Then it shall have a television camera pulled through it to check for sags. Any sag holding more than one and one-half inches (1 1/2) of water will require that the pipe be removed and replaced to proper grade after which the section shall be televised again to verify correction. The contractor may propose alternative methods other than televising sewers for the city's approval to determine failing sections of sewers.

(c) *Infiltration.* The allowable limit for any section from manhole to manhole will be one hundred (100) gallons per day per inch of pipe diameter per mile of pipe. If any infiltration is present at the most downstream point, then it will be measured using a specially-made weir and measurements will also be made at each upstream manhole that has any visible flow of water. Any individual segment which exceeds the allowable infiltration shall be corrected to within allowable limits.

(d) *Compaction of backfill.* Compaction testing may be required for sewers constructed in paved areas or where pavement is planned. A minimum of two (2) tests per five hundred (500) feet of trench line located in roadways will be required. If any of these tests show failing results, then the failing backfill will be removed, re-compacted and re-tested, and one (1) additional area will be tested as well.

(7) *Other testing requirements.* The tests listed below shall be performed by the contractor in the presence of the city. The city will be notified at least two (2) days prior to these tests.

(a) *Mandrel test for PVC pipe.* Procedure for testing PVC sewer pipe for maximum allowable deflection shall be generally as follows (Mandrel sized to ninety-five (95) percent of the nominal internal pipe diameter):

1. Completely flush the line making sure the pipe is clean of any mud or trash that would hinder the passage of the mandrel.
2. During the final flushing of the line, attach a floating block or ball to the end of the mandrel pull rope and float the rope through the line (a nylon ski rope is recommended).
3. After the rope is threaded through the line, connect the pull rope to the mandrel and place the mandrel in the entrance of the pipe.
4. Connect a second rope to the back of the mandrel. This will enable the mandrel to be retrieved if excessive deflection is encountered.
5. Draw the mandrel through the sewer line.
6. An increasing resistance to pull is an indication of excessive deflection. If this occurs mark the rope to note the location. Televising the sewer section to identify the extent of the problem and develop a plan, subject to city approval, for correcting the problem. The contractor may propose an alternative method other than televising sewers for the city's approval to determine locations of failing sewers.
7. Retest.

(b) *Air pressure test.* A low pressure test of each sewer line section will be conducted by the contractor to check for leaks. The following general procedures will apply (also refer to ASTM specs):

1. Temporarily plug the line segment between two (2) manholes using plugs having air tight fittings through which low pressure air can be introduced into the pipe segment being tested.
2. Introduce low pressure air into the test pipe segment until the internal air pressure reaches four and one-half (4.5) psig above ground water pressure, if any.
3. Wait at least five (5) minutes for air temperature in the test segment to stabilize while internal air pressure remains no less than three and one-half (3.5) psig above ground water pressure.
4. Bleed internal air pressure to exactly three and one-half (3.5) psig above ground water pressure.
5. Accurately determine the elapsed time for internal pressure to drop to two and one-half (2.5) psig above ground water pressure.
6. The air test is acceptable if elapsed time is no less than shown on the following table:

TABLE INSET:

Pipe Diameter (in inches)	Seconds Per 100 Feet of Pipe	Pipe Diameter (in inches)	Seconds Per 100 Feet of Pipe
8	72	27	252
10	90	30	288
12	108	36	360
15	126	42	438
18	144	48	516
21	180	54	588
24	216		588

Air leakage time is based on pipe being damp. If pipe and joints are dry, dampen line if helpful in meeting air test time requirement.

Permanently correct excessive leakage determined by air testing, and repeat operations until the city witnesses a successful test on each line segment.

Upon request, the city may allow substitution of exfiltration test in lieu of air pressure test. If used, the exfiltration test will be conducted with a minimum water head of two (2) feet above the groundwater table and the allowable exfiltration will be limited to one hundred (100) gallons per day per inch diameter of pipe per mile of pipe.

(c) *Manhole testing.* All manholes require testing by either the vacuum test or exfiltration test.

1. *Exfiltration test.* Manholes which have been backfilled around shall be tested for exfiltration. The minimum test time duration is one (1) hour. Manholes shall be filled with water to the top of ring. The maximum allowable exfiltration rate is two (2) gallons/foot of depth/foot of manhole diameter.

2. *Vacuum test.* Vacuum testing of manholes for watertightness may be used in lieu of the exfiltration test prior to backfilling. After temporarily plugging pipe openings and installing the vacuum base on top of the cone, a vacuum of ten (10) inches of Mercury shall be drawn and the vacuum pump shut off. With valves closed, the pressure shall be monitored for a time period of sixty (60) seconds. At the end of the test period, if the vacuum is nine (9) inches or greater, the manhole has passed the test. If the vacuum drops below nine (9) inches, the manhole has failed.

(8) *Final inspection and conditional acceptance.* In no circumstances shall any buildings and plumbing fixtures be connected to the sewers until inspected and approved by the city. The contractor shall request in writing a final inspection. This final inspection will generally include spot checks of manholes and sewer lines and a complete overview of the project.

After any discrepancies are corrected, the city will issue a letter, certifying conditional acceptance of the sewer system. This letter shall commence the start of the twelve-month warranty period which is required of the contractor. On projects having phased development, this letter will allow the developer to apply for a permit for the next phase of development.

At the end of twelve (12) months, the subdivision inspection team will again reinspect the entire development.

When all discrepancies have been corrected, the city will issue an acceptance letter and will begin perpetual maintenance and operation of the sewerage system.

(9) *Maintenance bond or letter of credit.* The developer shall post a maintenance bond or letter of credit of ten (10) percent of the total project cost on the facility for an eighteen-month period after completion and conditional acceptance of the facility by the city for all projects whose costs exceed twenty thousand dollars (\$20,000.00).

(10) *Maintenance until final acceptance.* It shall be the developer's obligation to provide all maintenance for a twelve-month period after conditional acceptance of the project by the city. At the end of the twelve-month maintenance period the city shall inspect the sewer system, and upon correction by the developer of all deficiencies noted by the city, the city will accept the sewer system for operation.

(Ord. No. 32-98, § 1, 8-27-98; Ord. No. 50-98, § 1, 1-7-99; Ord. No. 04-02, § 2, 1-3-02)

Sec. 7.5-96. Standard details.

The construction standard details numbered 4.6.01--4.6.06, attached to the ordinance from which this section derives and referred to in this chapter, are incorporated herein by reference as if fully set out at length. The standard details are on file in the office of the city clerk.
(Ord. No. 32-98, § 1, 8-27-98)

Secs. 7.5-97--7.5-120. Reserved.

ARTICLE V. WATER SPECIFICATIONS

Sec. 7.5-121. General requirements.

(1) *Use of this document.*

(a) This document is subject to periodic revision to meet changing requirements for materials, fire and safety regulations, environmental regulations, etc. At the beginning of a project the user should verify that he has the latest edition.

(b) This document is intended to convey the general design and construction requirements for a typical project. It also lists specific city requirements relating to plan review, inspection, testing and acceptance of facilities. It is not intended as a substitute for site-specific engineering and construction techniques. Individual project conditions may require variance from the provisions in this document in which case such variances should be noted in the plans and other data submitted by the project engineer for the city's approval.

(c) All phases of construction must be completed in accordance with the Erosion Sedimentation Act 12-7-1 et seq.

(d) No water mains shall be installed on or in close proximity to an abandoned landfill site or any site used for waste disposal.

(2) *Reserved.*

(Ord. No. 32-98, § 1, 8-27-98; Ord. No. 04-02, § 6, 1-3-02)

Sec. 7.5-122. Submittal requirements.

(1) *Water flow test.*

(a) A water flow test must be performed on the existing water line to determine the adequacy of the water supply line for the project.

(b) The test shall consist of a fire hydrant flow test, conducted at the nearest hydrant to the proposed development and a twenty-four-hour pressure test.

(c) Test information shall consist of:

1. Static pressure and residual pressure.
2. Flow in GPM at residual pressure.
3. Twenty-four-hour pressure chart.

(d) An adequate supply of water for the proposed project must be available prior to the approval of any plans. Flow tests are valid for one (1) year.

(e) The city will perform the test at the developer's expense.

(f) The developer will be responsible for retaining the services of an outside consultant/contractor to accomplish and submit a design study based on the flow test results and indicating the projected available flow at the highest point in the development in GPM with residual pressure of twenty (20) psi for the total project. This report should provide results indicating adequacy of flow quantities and pressure for the proposed development.

(2) *Plans for proposed water system.*

(a) *Preliminary review.* Preliminary plans will be prepared and submitted for review as described elsewhere in the development regulations. Questions relating to adequate fire protection, multiple fees, water supply and proposed locations of connection(s) should be resolved at this step before proceeding with detailed planning. A submittal for preliminary review must include all land to be developed although the land may be developed in several phases or units. Adequacy determination of the existing water system will be made for the total project.

The project surveyor shall provide a signed statement indicating records of the property have been researched and no abandoned landfills or waste disposal sites are located in the proximity of proposed water line extensions.

(b) *Construction plans.* Construction plans shall consist of the following:

1. Site plan with streets, street names, topography with contour lines at two-foot intervals, location map, lot layout (if subdivision) or building location (if multi-family, commercial or industrial), proposed location of future sidewalks, land lots, district, and north arrow showing the water layout only.
2. Proposed pipe size and service lateral locations.
3. Location and size of gate valves and air release valves.
4. Thrust blocks at all bends, tees, and plugs.

5. Fire hydrant locations.
6. Water system materials.
7. Location and sizes of existing water mains surrounding the project, with nearest line valve in each direction of proposed tie-in.
8. Detail of connection to existing lines.
9. Proposed meter sizes and locations.
10. Residential developments shall have the electric transformer locations indicated (this is necessary to verify no conflicts exist with water meter and fire hydrant locations).
11. Plan of fire line meters or detector meters, if applicable.
12. Any proposed off-site cross-county water mains or mains on existing right-of-way should be shown at a scale no smaller than 1:100.
13. Any other items incidental to the proposed system.
14. All plans must display the "utilities protection center" logo and "call before you dig" notice.
15. See Section 100 Check Lists for additional plan requirements. The approved water plan shall not be changed except by written approval of the city or its designated representative.

(c) *As-builts.*

1. As-built drawings will be same format as the original construction plans.
 2. Road names and lot numbers should be on plans.
 3. "As-builts" or "record drawing" is to be stamped in large clear print on plans.
 4. Sheet should be no larger than twenty-four (24) inches × thirty-six (36) inches.
 5. Water mains and meters should be shown, including size and types.
 6. Service and meter locations should be shown.
 7. Include detail drawings showing size, type, configuration and location of fittings.
 8. Include detail drawings depicting the configuration of crossings with other utilities (i.e. storm sewers, catch basins, underground cables) and indicating vertical and horizontal clearances.
 9. Clearly indicate easement boundaries on all lines not located inside the public right-of-way.
 10. Fire hydrants, gate valves and air release valves should be shown.
 11. Plan of fire meters or detector meters should be shown, if applicable.
 12. As-built drawings must be submitted to the city and approved before the final plat is recorded.
- (Ord. No. 32-98, § 1, 8-27-98; Ord. No. 04-02, § 7, 1-3-02)

Sec. 7.5-123. Design criteria.

(1) *Generally.* The criteria listed herein is not intended to cover all aspects of design, but rather to mention the basic guidelines and those particulars that are required by the city.

(2) *Water supply.*

(a) Residential water supply for domestic use shall be in accordance with the following table and at a minimum residual pressure of twenty (20) psi at the highest point in the development.

INSTANTANEOUS WATER DEMANDS

FOR RESIDENTIAL AREAS

TABLE INSET:

Total Number of Residences Served	GPM per Residence	Total Number of Residences Served	GPM per Residence
5	8.0	90	2.1
10	5.0	100	2.0
20	4.3	150	1.6
30	3.8	200	1.3
40	3.4	300	1.2
50	3.0	400	0.9
60	2.7	500	0.8
70	2.5	750	0.7
80	2.2	1,000	0.6

(b) The city may require the following minimum available flow/duration quantities at the highest point in the development with a minimum residual pressure of twenty (20) psi measured at the nearest fire hydrant prior to development of the property.

1. *Multi-family*: One thousand (1,000) GPM for thirty (30) minutes.
2. *Shopping centers, commercial establishments*: One thousand (1,000) GPM for thirty (30) minutes.
3. *Motels, light industry, office buildings, or schools*: One thousand two hundred fifty (1,250) GPM for thirty (30) minutes.
4. *Heavy industry or warehouses*: Minimum one thousand five hundred (1,500) GPM for forty-five (45) minutes.
5. *Residential*: Seven hundred fifty (750) GPM for thirty (30) minutes.

(3) *Fire protection.*

(a) Fire hydrants shall be spaced not more than five hundred (500) feet apart with additional fire hydrants located as necessary to permit all portions of buildings to be reached by hose lays of not more than three hundred (300) feet in length. (Spacing as traffic travels.) In subdivisions, hydrants will generally be aligned with the property line separating two (2) adjacent lots.

(b) Fire lines shall be metered per these specifications.

(c) Hose lay distance for fire truck hoses is defined as being measured along the route a piece of fire apparatus must travel in laying a fire hose from the fire to the fire hydrant.

(d) All plans for development must meet all applicable fire protection codes.

(4) *Water mains and appurtenances.*

(a) *Water mains.*

1. *Ductile iron pipe*. Ductile iron pipe shall be used for main lines in all locations.
2. *Diameter*. Main lines shall be a minimum of eight (8) inches in diameter.
3. *On existing streets*. On existing roads, water lines shall be located on the south and west side of the road, nine (9) feet from the back of curb, with a minimum cover of thirty-six (36) inches below the level of the road shoulder. Fire hydrants on existing roads shall be located between the waterline and the back of curbing.
4. *On new streets*. All curbing must be installed before any water lines are installed. Water lines on new streets shall be located on the south and west side of the street, as shown in the standard detail drawings. Water lines shall be installed with thirty-six (36) inches of cover at finish grade. Fire hydrants shall be located between the water main and the back of curbing.

(b) *Service laterals.*

1. Shortside service laterals shall be installed with a uniform slope from the main shallowing to a bury of twelve (12) inches at the water meter setting. Water meter settings are to be located adjacent to the right of way limit.

Longside services shall have a minimum cover of thirty-six (36) inches under areas of pavement and curbing then shallowing to twelve (12) inches at the water meter.

2. Service laterals crossing any roads shall be placed inside a minimum of a two-inch diameter PVC casing.

3. A (W) shall be etched into the curb where each service tap is made for permanent location.

4. Copper tubing shall be used for all services. There shall be no splices of copper tubing under any pavement.

5. Services for subdivisions shall be sized and located as shown on the standard detail drawings.

(c) *Location of meters.* Residential water meters shall be located at the limits of the street right-of-way. In general meters will be located near the property line, where possible a double yoke assembly will be utilized at the property line separating two (2) adjacent lots. The project designer is responsible for verifying electric transformer locations and avoiding conflicts. The developer shall be responsible for installing the meter box and yoke assembly. See standard details for listing of required components. The city shall install the water meter in the yoke assembly after tap fees have been paid and service applied for.

(d) *Installation.* Vaults and all valve and piping assemblies for commercial and industrial meter settings shall be installed by the developer. Installations for three-fourths-inch and one-inch meter settings shall utilize a standard yoke assembly and the required additional backflow device located in a separate box. The city shall provide the meter after tap fees are paid and service applied for. No water service shall be provided until all required backflow devices are in place.

(e) *Backflow preventer.* All water meters shall be provided with a backflow preventer. Residential services shall be provided with a dual check backflow preventer installed by the developer as part of the standard yoke assembly. Additional backflow prevention measures are required for residential services with lawn irrigation sprinkler systems connected. Commercial water services, as a minimum, shall be provided with a double check valve backflow prevention device installed by the developer and located immediately downstream of the meter setting in a separate vault or utility box. Additional and/or more extensive backflow prevention measures may be required depending on the type of business, materials handled and plumbing configuration. All customers applying for commercial water service are to contact the city water department backflow prevention coordinator for a determination of specific requirements concerning backflow prevention devices.

(f) *Fire line meters.* Fire line meters shall be designed to meet site-specific conditions. See standard details for conceptual layout of meter.

(g) *Detector meter.* Detector meters shall be designed to meet site-specific conditions. See standard details for conceptual layout.

(h) *Water valves.*

1. *At intersections.* Valves on water mains at intersections shall be located behind the curb. As a general rule, the number of valves shall equal the number of streets in the intersection minus one. The city may require valves in excess of this requirement if the water system layout warrants additional valves.

2. *At end of line.* A water valve and a minimum of thirty-six (36) feet of pipe shall be provided at the end of all lines for phased developments, and at locations where the water main may be extended in the future for water system improvements. The end of the line shall be provided with a temporary plug and thrust collar designed to function in a manner that will allow for the end of the line to be excavated and exposed for tie-on of an extension without taking the main out of service.

3. *Along mains.* Maximum spacing of water valves along mains shall be one thousand (1,000) feet. These line valves, unless at intersections, shall be located near fire hydrants.

(i) *Valve markers.* One (1) concrete valve marker shall be furnished and set at each line valve as required by the city.

(j) *Air and vacuum release valves.* Air and vacuum release valves shall be located where appropriate as determined by a registered engineer in responsible charge of the project design. All A&V release valve locations are subject to approval of the city. In general, within subdivisions A&V release valves are not necessary as long as services are located at the water main high points.

(k) *Polyethylene encasement.* Ductile iron pipe water main shall be provided with polyethylene encasement where the water main either crosses or runs within three (3) feet of a steel gas main.

(l) *Easements.* Water mains that are located off the public right-of-way shall have a twenty-foot permanent easement.

(5) *Line extension requirements.*

(a) Developers are required to extend all mains along their entire road frontage of the development property. The size of the extension will be at least the size of the existing main and may be larger if required by the water department.

(b) If an existing main must be extended to serve a particular development, the developer will be required to pay all costs.

(Ord. No. 32-98, § 1, 8-27-98; Ord. No. 50-98, §§ 4, 6, 1-7-99)

Sec. 7.5-124. Fire line ordinance.

(a) All fire service lines must be equipped with an appropriate backflow device. As a minimum this device shall be a double check valve installed in a vault at a point on the fire service line as near to the main as practical. Certain fire system configurations may require more extensive backflow prevention measures. Contact the city water department backflow prevention coordinator for a specific determination of backflow prevention requirements of a particular fire service system design.

(b) All fire service systems require the installation of an underwriter approved detector meter installed as a component of the double check assembly or a factory mutual fire line meter immediately upstream of the double check valve assembly.

(1) All detector check assemblies shall utilize a "Neptune Trident" meter equipped with a "Proread" remote reading device.

(2) Factory mutual fire line meter systems shall utilize "Neptune HP Fire Service Turbine" or "Neptune HP Protectus III" meters equipped with "Proread" remote reading devices.

(c) Fire service charges for systems utilizing a detector meter shall be based on a count of sprinkler heads plus a service fee.

(d) Fire service charges for systems utilizing a factory mutual fire meter shall be based on actual water usage and monthly minimums for meter size.

(e) When unauthorized water is used through a detector meter in three (3) or more billing periods in one (1) calendar year, it shall be replaced with a factory mutual fire line meter. Unauthorized use of water is defined as non-fire fighting water and/or water use without prior notification and approval of the city.

(f) All domestic water supply must be metered with a proper meter.

(g) Work to be performed by developer. Installation of detector meters or factory mutual fire line meters as required by this chapter will be handled by the developer under supervision of the city's inspectors. The cost of installation will be the responsibility developer.

(h) The city shall have the authority to cut off water service to buildings whose owners refuse to comply with the provisions of this chapter upon proper notification of sixty (60) days.

(i) The customer shall have ownership and be responsible for maintenance and repairs of the fire service line beginning at the boundary with the public right-of-way. For mains located outside of public right-of-way, the customer's ownership and maintenance responsibility shall begin at the connection to the main.

(Ord. No. 32-98, § 1, 8-27-98)

Sec. 7.5-125. Material specifications.

All materials used in the work including equipment shall be new and unused materials of a reputable U.S. manufacturer conforming to the applicable requirements of the specifications, and no materials shall be used in the work until they have been approved by the city.

(1) *Ductile iron pipe.* Ductile iron pipe shall be designed in accordance with ANSI A21.50 (AWWA C150), latest revision, and manufactured in accordance with ANSI A21.51 (AWWA C151), latest revision. Wall thickness class shall be a minimum Class 50.

Ductile iron pipe shall have an outside asphaltic coating per ANSI A21.51 (AWWA C151), latest revision. Pipe shall have standard cement lining inside with asphaltic seal coat per ANSI A21.4 (AWWA C104), latest revision.

Pipe joints, except where restrained or flange joints are specified, shall be push-on or mechanical joint type conforming to ANSI A21.11 (AWWA C111), latest revision. Pipe shall be in eighteen-foot to twenty-foot nominal lengths with standard deflection pipe sockets. Where restrained joints are shown or specified on pipe larger than twelve-inch diameter the joints shall be "Lok-Fast," "Lok-Ring," or equal. Restrained joints for pipe

sizes twelve (12) inches diameter and smaller requiring restrained joint construction may utilize "Fast Grip" gaskets as manufactured by American Pipe or an approved equal.

Where river crossing pipe is shown or specified, the pipe shall be "Flex-Lok Boltless Ball Joint Pipe" as manufactured by American Pipe or approval equal.

Where specified, flanged pipe shall meet ANSI A21.51 and be used with fittings meeting ANSI A21.53. (AWWA C153).

(2) *PVC pipe.* All PVC pressure pipe used for temporary water mains shall be Class 200, DR 14 pipe rated at two hundred (200) psi working pressure.

(3) *Copper tubing for water service.* House service pipe shall be copper service pipe, type K, soft temper, seamless copper tubing, conforming to Federal Specification WW-T-T00. Compression joints shall be used.

(4) *Steel casing pipe.* Steel casing pipe shall be steel pipe conforming to A.S.T.M. Designation A-139, Grade B, electric fusion welded steel pipe. The pipe shall have a minimum tensile strength of thirty-five thousand (35,000) psi. Both the exterior and interior of the pipe shall have a coal tar varnish coating.

(5) *Pipe fittings.* Fittings shall be ductile iron furnished in accordance with ANSI Specifications A21.53 (AWWA C153), latest revision, and shall have a minimum of two hundred fifty (250) psi pressure class rating. Joints shall be mechanical joint with ductile iron retainer glands conforming to ANSI Specification A21.11 (AWWA C111), latest revision. Ductile iron retainer glands shall be Mega-Lug glands as manufactured by EBAA Iron. All fittings shall be furnished with a cement mortar lining.

(6) *Butterfly valves.*

a. All butterfly valves shall be bubble-tight closing at the rated pressure with flow in either direction, and shall be satisfactory for applications involving throttling service and frequent operations or operations after long periods of inactivity. Valves shall meet the full requirements of AWWA Standard C504, latest revision for one hundred fifty (150) psi working pressure and shall be suitable for above ground or buried service. All interior ferrous surfaces of valves larger than twelve (12) inches shall have a special epoxy coating meeting the requirements of AWWA C550.

Valve bodies shall be equipped with integrally cast mechanical joint ends meeting ANSI A21.11 (AWWA C111). Mechanical joints shall be fitted with retainer glands with set screws on ductile iron pipe. Retainer glands shall be Mega-Lug as manufactured by EBAA Iron. Butterfly valves installed underground shall come equipped with the manual operator specified in the following paragraph.

b. Manual operators shall be of the traveling nut, self-locking type and shall be designed to hold the valve in any intermediate position between fully open and fully closed without creeping or fluttering. Operators shall be equipped with mechanical stop-limiting devices to prevent over travel of the disc in the open and closed positions. Valves shall close with a clockwise rotation. Operators shall be fully enclosed and designed for buried operation. Provide extensions as necessary to bring the operating nut within eighteen (18) inches of the ground surface.

(7) *Gate valves.* Valves twelve (12) inches and smaller shall be gate valves. These valves shall be non-rising stem design, iron body, bronze mounted with a compression, resilient seat manufactured in accordance with AWWA Standard C509, latest revision. Valves shall be designed for a minimum working pressure of two hundred (200) psi and shall have two-inch square operating nuts, except in meter vaults where handwheels shall be installed. Valves shall have non-rising stems, shall open when turned counter-clockwise and shall meet AWWA specifications for Class C valves. Valves with flanged connections shall conform to ANSI B16.1. Mechanical joints shall be fitted with retainer glands and set screws on ductile iron pipe. Retainer glands shall be Mega-Lug as manufactured by EBAA Iron. Gate valves shall be as manufactured by American Darling, Mueller, or M&H. Provide extensions as necessary to bring the operating nut within eighteen (18) inches of the ground surface.

(8) *Valve boxes.* Each valve shall be provided with a valve box. Valve boxes for valves shall be approved standard cast iron, screw type adjustable-shaft boxes having a minimum shaft diameter of five and one-fourth (5 1/4) inches adjustable for the necessary depth. The casting shall be coated with two (2) coats of coal tar pitch varnish. The lids of all boxes shall bear the word "water." Boxes shall be equal to Russco Model 562-S with a five and one-fourth (5 1/4) inch cast iron drop cover. All off-pavement valve boxes shall have concrete collars and valve markers.

(9) *Air and vacuum relief valve assemblies.* Air and vacuum relief valves shall be cast iron body and covers with bronze trim, stainless steel float, Buna-N-Seal, and shall be designed for a minimum working pressure of one hundred fifty (150) psi.

The valve shall be designed to exhaust large quantities of air during the filling period, and small quantities of air which collect in the line while operating under pressure. Acceptable manufactures of air/vacuum valves are Golden-Anderson, APCO or Val-Matic.

Valves between the water main and air relief valve shall be two-inch stainless steel ball valves. All air and vacuum relief valves are to be installed in standard meter boxes with gravel bottoms. Provide a minimum gravel layer thickness of twelve (12) inches.

(10) *Fire hydrants.* All fire hydrants shall be designed and manufactured to comply with the latest specifications of the AWWA. They shall be designed for one hundred fifty (150) pounds working pressure. The hydrants shall be of simple design, easy to operate, effectively and positively drained and protected from damage by freezing, have bronze seat and drain ring and convenient for repairing and replacing parts.

Hydrants shall be equipped with one (1) four-and-one-half-inch diameter pumper nozzle and two (2) two-and-one-half-inch diameter hose connections, which shall have threads meeting the latest requirements of the state fire insurance commission. Hydrants shall have a three-way pentagonal operating nut, and shall open when turned counter-clockwise. Hydrants shall have a safety flange on the barrel and a safety coupling on the valve stem, to prevent damage to barrel and stem in case of traffic accident. Hydrants shall be either Mueller Company's Centurian Traffic Model, M&H Style Traffic Model, or American Darling Mark 73-1.

The construction to the main line shall be with mechanical joint locked hydrant tee equal to American Cast Iron Pipe Company A-10180. All fire hydrant branches shall be valved. Wherever possible the fire hydrant shall be connected to the gate valve by using a locked hydrant adapter equal to American A-10895. The connection at the base of the hydrant shall be mechanical joint with ductile iron retainer gland, for Class 150, centrifugally cast, six-inch ductile iron pipe. The valve opening shall meet the requirements of the AWWA specifications for four-and-one-half-inch hydrant. The valve, valve seat and inner working parts shall be easily accessible. The distance from the ground to the hose nozzle shall not be less than twenty-four (24) inches. The body of each hydrant shall be neatly painted with a safety yellow reflecting paint and the ears and bonnet painted silver.

Each hydrant shall be tested to two hundred (200) psi with the hydrant foot valve in the closed position. A second test will be conducted on the hydrant at system pressure and the hydrant foot valve in the open position. A cap with a bleed off port will be installed on one (1) ear of the hydrant to bleed of air and allow the hydrant barrel to fill with water. The hydrant will then be observed for signs of leakage.

(11) *Service saddles.* Service saddles shall be Ford F202 with CC threads (three-fourths-inch single, one-inch dual.)

(12) *Pipe couplings.* Pipe connections between new pipe and existing pipe shall be made with Dresser Style 90 long steel couplings for pipe sizes two (2) inches and below; use mechanical joint sleeves for pipe sizes above two (2) inches. Field joints shall be made to insure permanently tight joints under all reasonable conditions of expansion, contraction, shifting, etc.

(13) *Yokes.* Yokes for three-fourths-inch services shall include iron bar Ford Y502P, ball valve Ford B94-223WR, dual check valve Ford HHS91-323 Dual.

(14) *Corporation stop.* Corporation stop shall be Ford F1000 (three-fourths-inch single, one-inch dual).

(15) *Branch piece.* One-inch × three-fourths-inch × seven and one-half-inch branch piece shall be Ford U48-43-7 1/2, one-inch compression joint inlet × three-fourths-inch MIP outlet.

(16) *PVC casing pipe.* PVC casing pipe used for long-side services shall be schedule 40, a minimum of one (1) inch larger in diameter than the service line, but no less than two (2) inches in diameter. Detection wire shall be placed on all non-metal casing pipes and service lines.

(17) *Meter boxes.* The meter box shall be plastic and the lid shall be cast iron. The meter box shall be as manufactured by DFW; the lid shall be as manufactured by Kenflow.

(18) *Tapping valves.* Tapping valves shall be M.J. Type, two hundred (200) psi minimum rating, acceptable manufactures include Mueller, M&H, and American Darling.

(19) *Tapping sleeves.* Tapping sleeves shall be Ford Stainless Steel tapping sleeves with carbon steel flange.

(20) *Water meters.* The developer shall install the meter box and yoke on all residential and commercial and industrial services in the three-fourths-inch and one-inch sizes. The city shall provide and install the meter after all fees are paid and service is requested. On larger size commercial and industrial services, the developer shall install the vault and all piping and valves. The city will provide the meter after all fees are paid. No water service will be provided until all required backflow prevention devices are in place.

(21) *Backflow preventers.* Backflow preventers for residential services shall consist of a dual check valve and shall be installed by the developer as part of the yoke assembly. Backflow prevention devices for commercial services, as a minimum, shall consist of an ASSE approved double check backflow preventer installed by the developer immediately downstream of the meter assembly. Contact the city water department backflow prevention coordinator for a specific determination of backflow prevention requirements.

(22) *Valve markers.* Valve markers shall be made of three thousand (3,000) psi concrete, and shall be four (4) feet long and four (4) inches on each side, with four (4) #4 reinforcing bars. The markers shall be set with an even number of feet between the center line of the valve and the center line of the aluminum disc in the top of the marker, and the distance in feet between the valve and marker shall be stamped in the marker at the time of setting.

(23) *Polyethylene encasement.* Polyethylene film shall be manufactured of virgin polyethylene material conforming to ASTM Standard Specifications D-1248-78 Type I, Class A or C, Grade E-1. The polyethylene film shall have a minimum thickness of eight (8) mil. The polyethylene encasement material shall be provided in tube sizes adequate for the various size pipes.

(24) *Insulators for DIP in steel casing.* Insulators shall be as manufactured by Cascade Waterworks Manufacturing Company or approved equal. Insulators for twenty-four-inch DIP carrier pipe shall be CCS-2580 and eight (8) inches in width. Insulators for twelve-inch DIP carrier pipe shall be CCS-1320 and eight (8) inches in width. Insulators for eight-inch DIP carrier pipe shall be CCS-905 and eight (8) inches in width. All insulators shall have a stainless steel shell. Insulators shall be located within two (2) feet of each end of the casing and spaced no more than ten (10) feet apart within the casing. The positioning of the casing insulators shall be centered for water mains.

(Ord. No. 32-98, § 1, 8-27-98; Ord. No. 50-98, § 1, 1-7-99)

Sec. 7.5-126. Water system construction.

(1) *Generally.*

(a) It shall be expressly understood that these specifications are for installation of all underground water mains and appurtenances.

(b) All work shall conform to the applicable provisions of the AWWA specifications of latest revision except as otherwise specified herein.

(2) *Trench excavation.*

(a) Trenches shall have a minimum width of twenty-four (24) inches or the diameter of the outside of the bell of the water main plus twelve (12) inches, (whichever is greater), and the depth thereof shall be such that there shall be a minimum of forty-two (42) inches of cover measured below the roadway surface, natural ground, or proposed grade to the top of the pipe. In cases where water lines cross sanitary sewers, there shall be a minimum of two (2) feet vertical separation between the water and sewer mains. In cases where water mains parallel sewer mains there shall be a minimum of ten (10) feet horizontal separation maintained between the mains.

Trenches shall be dug so that the pipe can be laid to the alignment and depth required, and the trench shall be of such width and shall be braced and drained so that the workmen may work therein safely and efficiently. No chocking under the pipe will be permitted. All joints shall be as specified herein. Excavation must be made under the bell of each pipe so that the entire length of the pipe will lie uniformly on the bottom of the trench and the pipe weight shall not rest on the bells. Trenches shall be free of water during the work.

Water lines shall have a minimum cover of forty-two (42) inches. All changes in grade shall be made gradually. At points of interference with storm sewers and cross drains, pipe will be run under the conflicting utility if the minimum cover cannot be maintained by going over the top of the pipe.

In laying pipe across water courses, railroad crossings, or depressions of any kind, the minimum depth here specified shall be maintained at the bottom of the depression.

Where necessary, the line shall be lowered at valves so that the top of the valve stem is approximately one (1) foot below the finished grade. The trench shall be deepened to provide a gradual approach to all low points of the line.

(b) Wherever rock is encountered in the excavation, it shall be removed by suitable means. If blasting is used for removal of rock, the contractor shall take all proper safety precautions. He shall comply with all rules and regulations for the protection of life and property that may be imposed by any public body having jurisdiction relative to the handling, storing and use of explosives. Before blasting, the contractor shall cover the excavation

with heavy timbers and mats in such a manner as to protect the adjacent property owners from damage. All rock encountered shall be removed six (6) inches below the bottom grade of the trench and the trench built back to the correct grade with suitable material tamped into place. Sides of the trench shall be trimmed of projecting rock that will interfere with backfilling operations. The contractor shall be wholly responsible for any damage resulting from blasting. Rock excavation by blasting shall be at least seventy-five (75) feet in advance of pipe laying.

(c) After the pipe has been laid, backfilling shall be performed in two (2) distinct operations. In general, all backfill beneath, around and to a depth of twenty-four (24) inches above the top of the pipe shall be placed in six-inch layers for the full width of the trench and thoroughly compacted by hand with vibratory equipment. Care shall be taken so that the pipe is not laterally displaced during backfilling operations. The backfill lifts shall be placed by an approved method in accordance with that hereinafter specified. Backfill materials shall be the excavated materials without bricks, stone, foreign matter or corrosive materials, where not otherwise specified or indicated on the plans.

(d) Backfill under permanent concrete or bituminous pavement and as elsewhere specified or indicated on the plans shall be as shown in the standard detail drawings for trenches in paved areas. Mechanical vibrating equipment shall be used to achieve the required compaction.

(e) Backfill under gravel or crushed stone surfaced roadways and low-type bituminous surfaced roadways shall be approved suitable excavated material placed in twelve-inch layers and thoroughly compacted for the full depth and width of the trench, conforming to the compaction, density compaction method and materials as specified in subsection (d) above.

(f) Backfill in unpaved areas shall be compacted with mechanical vibrating equipment to ninety-five (95) percent as determined by the Standard Proctor Test. Trenches shall be compacted so they will not settle. If settlement occurs, trenches are to be refilled, recompacted and regraded. Backfill material from pipe bedding to ground surface shall be excavated earth free from large stones and other debris.

(g) Contractor shall fully restore and replace all pavement, surface structures, grassing, landscaping, etc., removed or disturbed as part of the work to a condition equal to that before the work began. All pavement removal shall be replaced per standard detail drawings.

(h) Where sheeting is used in connection with the work, it is in no case to be withdrawn before the trench is sufficiently filled to prevent damage to banks, road surfaces, adjacent pipes, adjacent structures or adjacent property, public or private.

(3) *Laying pipe.* All pipe shall be laid straight, true to line and grade. Bell and coupling holes shall be dug in the trench and the pipe shall have a continuous bearing with the trench bottom between bell or coupling holes. No shimming or blocking up of the pipe shall be allowed. When the work is not going on, all pipe openings shall be securely closed by the insertion of the proper size plug and caulking so that dirt and debris will not be washed into the pipe in case of rain.

In making the joints with ductile iron pipe, the spigot end of the pipe and the inside of the bell shall be thoroughly cleaned and the gasket inspected to see that it is properly placed; lubricant shall be applied to the spigot end of the pipe and it shall be inserted into the bell of the adjoining pipe to the stop mark on the pipe.

(4) *Thrust restraint for pressure lines.*

(a) *Reaction blocking.*

1. Underground piping laid around curves and at all unsupported changes of direction, all tees, wyes, crosses, plugs and other like fittings shall be solidly and properly blocked with concrete against solid earth to take the reaction of the main pressure and to prevent lateral movement of the pipe or fittings when under pressure. Reaction blocking shall be installed at all locations requiring same and where tie rods and clamps are not called for in the plans. Concrete for reaction blocking shall have a minimum compressive strength of three thousand (3,000) psi at twenty-eight (28) days. The blocking, unless otherwise shown, shall be so placed that the pipe and fitting joints will be accessible for repair. In addition to the concrete blocking specified herein, all mechanical joint fittings shall be installed with Mega-Lug retainer glands.

2. Reaction blocking shall be constructed as per AWWA Standard C600 Section 3.8, latest revision. It shall be constructed in conformance with the Standard Detail Drawings for Reaction Blocking.

(b) *Retainer glands.* Mechanical joint fittings on ductile iron pipe shall be installed with retainer glands. Retainer glands are to be Mega-Lug retainer glands as manufactured by EBBA Iron.

1. Clean the socket and the plain end. Lubrication and additional cleaning should be provided by brushing both the gasket and the plain end with soapy water or an approved pipe lubricant meeting the requirements of ANSI

C111 or AWWA A21.11 just prior to slipping the gland and gasket onto the plain end for joint assembly. Place the gland on the plain end with the lip extension toward the plain end, followed by the gasket.

2. Insert the pipe into the socket and press the gasket firmly and evenly into the gasket recess. Keep the joint straight during assembly.

3. Push the gland toward the socket and center it around the pipe with the gland lip against the gasket. Insert bolts and hand tighten nuts. Make deflection after joint assembly but before tightening bolts.

4. Tighten the bolts to the normal range of bolt torque specified in AWWA C600 while at all times maintaining approximately the same distance between the gland and the face of the flange at all points around the socket.

5. Tighten the torque limiting twist off nuts in a clock-wise direction until all wedges are in firm contact with the pipe surface. Continue tightening in an alternate manner until all of the nuts have been twisted off.

(5) *Setting fire hydrants.* Fire hydrants shall be placed at the locations shown on the plans or as directed by the city. All fire hydrants shall be installed with a resilient seat gate for isolation from the main. Gate valves for fire hydrants shall be connected directly to the main by means of a "Locked Hydrant Tee." Fire hydrants shall be connected to the isolation valve with a locked hydrant adapter. Installations where locked hydrant tees or locked hydrant adapters cannot be utilized, either due to distance from the main or size, shall be restrained with retainers glands and threaded rods. Care shall be exercised that set screws and retainer glands are tightened sufficiently to secure the hydrants before pressure is put on the main. Not less than nine (9) cubic feet of coarse, broken stone shall be placed around the base of the hydrants, as shown in the standard detail drawings, Section 400. Before placing the hydrants, care shall be taken to see that all foreign material is removed from within the body. The stuffing boxes shall be tightened and the hydrant valve opened and closed to see that all parts are in first class working condition. All hydrant openings shall be kept capped, except when hydrant is being worked on. Existing fire hydrants shall not be operated without permission of the city.

When a fire hydrant has been constructed but is not yet in service, the contractor shall provide and attach to the fire hydrant, flags or collars indicating that the fire hydrant is not in service. Said flags or collars shall remain on the fire hydrant until it is put into service.

Whenever an existing fire hydrant is taken out of service, whether temporarily or permanently, it shall be equipped with a flag or collar indicating that it is not in service. The contractor shall provide and install flags or collars as required and shall notify the fire department whenever the operating status of any fire hydrant changes.

Fire hydrants shall not be operated with any tool except a specifically designed fire hydrant wrench. If the contractor observes any other contractor or person operating a fire hydrant with an unapproved fire hydrant wrench, he shall report that fact to the city immediately. It is the contractor's responsibility to insure that all new facilities are maintained in new condition until final completion of the project and acceptance by the city. Fire hydrants with damaged operating nuts shall not be accepted.

(6) *Setting valves and fittings.* Valves shall be set plumb, and shall have cast iron valve boxes. The valve boxes shall be placed directly over the valve and set plumb, the top of the box being brought to the surface of the ground. Provide valve extensions on all valves with operating nuts more than three (3) feet in depth. Valve extensions shall bring the operating nut to within eighteen (18) inches of the surface and shall be keyed into the valve nut. After the boxes are in place, earth shall be filled in the trench and thoroughly tamped around the box. After all settlement has taken place, a precast concrete collar shall be installed for each valve box.

Fittings shall be properly restrained to insure that they will not be blown off or broken loose under the greatest possible working pressure (see standard detail drawings). All fittings shall be mechanical joint and shall be installed with Mega-Lug retainer glands and concrete blocking unless specified otherwise. In situations where there is insufficient undisturbed earth to act as a bearing surface or where otherwise directed by the city, fittings shall be restrained by the use of threaded rods or other method acceptable to the city.

Prior to blocking any joint or fitting with concrete, that joint or fitting shall be wrapped with polyethylene film in such a manner that the concrete will not stick directly to the pipe but that the load bearing capacity of the blocking will not be affected. Care shall be taken to prevent the concrete from covering bolts. Polyethylene film shall be installed at other points along the water main where so directed by the city.

(7) *Placing of steel casing pipe.* Casing pipe shall be installed at the location shown on the plans. Unless directed otherwise, the installation procedure shall be by the dry bore method. The hole is to be mechanically bored and cased through the soil by a cutting head on a continuous auger mounted inside the casing pipe. The installation of the casing and boring of the hole shall be done simultaneously by jacking. Lengths of pipe are to be adequately welded to the preceding section installed. Excavation material will be removed and placed at the top of the working pit. Backfill material and methods of backfilling and tamping shall be as required under backfilling.

Carrier pipe shall be inserted within the casing by use of stainless steel casing spacers. Intervals shall be as detailed in Section 805.24.

(8) *Marking location of valves.*

(a) Each main line water valve shall be marked by cutting a letter "V" in the horizontal surface at the back of the curb. The "V" shall be turned to point toward the valve which may be either in the street or in the grass behind the curb. The letter height shall be four (4) inches to six (6) inches.

(b) Concrete valve markers shall be set for main line water valves with an even number of feet between the center line of the valve and the center line of the aluminum disc in the top of the marker, and the distance in feet between the valve and marker shall be stamped in the marker at the time of setting.

(9) *Dewatering trenches.* The contractor shall do all necessary pumping or bailing, build all drains and do all other work necessary at his own expense to keep the trenches clear of water during the progress of the work.

(10) *Bracing, sheeting, and/or shoring.* Whenever the condition of the ground is such that it is necessary to protect the work, the street, the roadway or the workmen, the sides of the trench shall be supported with suitable bracing, sheeting and/or shoring to be furnished by the contractor at his own expense.

(11) *Rock excavation.* Drilling and blasting operations shall be conducted with due regard for the safety of persons and property in the vicinity and in strict conformity with requirements of all ordinances, laws and regulations governing blasting and the use of explosives. Rock excavation near existing pipelines or other structures shall be conducted with the utmost care to avoid damage. Injury or damage to other structures and properties shall be promptly repaired by the contractor to the satisfaction of the city and property owner. Rock in trenches shall be excavated over the horizontal limits of excavation and to depths as follows:

TABLE INSET:

Size of Pipeline (in inches)	Depth of Excavation Below Bottom of Pipe (in inches)
6 and Less	6
8 to 18	8
18 to 30	10
Over 30	12

The undercut space shall then be brought up to grade by backfilling with size #57 crushed stone material or approved equal.

(12) *Location and protection of existing underground utilities.* It is the responsibility of the contractor to locate the underground utilities and to protect same. Utility lines or services damaged by the contractor shall be repaired by the contractor at his own expense. The contractor is to comply with all federal, state and local laws requiring notification of the utilities protection center prior to excavating.

(13) *Connection to the existing city water system.*

(a) *Requirements for all connections.* All persons desiring to connect a line extension to an existing main must make application at the city at least twenty-one (21) working days prior to the date the connection is to be made. Connection to existing mains will only be allowed for approved projects. All connections must be made with a wet tap using a tapping saddle or tapping sleeve. The contractor has the option of contracting with the city water department to perform the actual tapping of the main or they may contract with an outside private contractor. City approval of private contractor to perform pipe tapping is mandatory. Submit detailed resume and work history with references to establish competency and expertise for performing tap work. A city water department inspector must be present at all times during tapping operations. The contractor shall furnish the following information when making application:

1. Approved plan for the project.
2. Copy of street or highway permit if applicable.
3. Schedule of work to be performed.
4. Resume, work history and references of proposed tapping contractor for taps installed by a private contractor.
5. Payment of cost estimate for connections installed by the city.

(b) *City makes connection.* The city will charge for work at prevailing department rates and schedule the connection to conform to their work schedule and notify the contractor so that he can complete his preparation.

1. The contractor shall furnish the following at site:

- a. Tapping sleeve and valve installed on the line and ready for tapping.
- b. Proper traffic control devices and person(s) to direct traffic if required.
- c. Backhoe or lift capable of handling the tapping machine.
- d. Minimum of three (3) men to assist with the work.

2. The contractor will be billed for making the connection based on material costs and the hourly rates for the city's operator, additional laborers, truck and any other equipment used if made by city forces.

(c) *Private contractor makes connections.*

1. city personnel shall supervise the tap and associated work by private contractor.
2. All taps shall be made on wet lines under pressure.
3. All taps to be made with saddles or tapping sleeves meeting city standard specifications.

(14) *Street cuts.*

(a) All paved roads will be bored and cased. A bore must be attempted before consideration will be given to cutting the street. A permit is required for all utility installations in existing city streets as detailed in subsection 7.5-68(6)(c).

(b) One (1) lane of traffic shall be maintained open at all times.

(c) Construction work shall be limited to the hours between 9:00 a.m. and 4:00 p.m. Other time constraints may be imposed if deemed necessary by the city.

(d) The contractor shall furnish traffic control devices and person(s) to direct traffic, if required.

(e) Compaction and surface replacement to be performed per city standard specifications as detailed in other sections herein.

(15) *Standard drawings.* Installation of fire hydrants, water valves, valve boxes, meters, long side services water lines, etc. shall be made in accordance with applicable standard design drawings in these specifications.

(16) *Clean up.* Prior to requesting the final inspection, the contractor shall do the following:

(a) Remove and dispose of in an acceptable manner all shipping timbers, shipping bands, spacers, excess materials, broken material, crates, boxes and any other material brought to the job site.

(b) Repair or replace any work damaged by the water line construction.

(c) Regarded and smooth all shoulder areas disturbed by the water line construction.

(d) Set precast concrete collars around all valve boxes outside paved areas.

(e) Insure that all fire hydrants are set to grade and that all valves have been located and are fully open.

(17) *Interruption of water supply during construction.* Approval of the city water department must be obtained prior to interrupting water service to an occupied building. A minimum of one (1) business day advance notice shall be given to any occupied building served by a water line which is required to be shut off. Occupants shall be informed of the date, time of cutoff and the duration of stoppage by written notice posted on doorways of all buildings affected. Failure to do so will make the contractor liable for any damages reported to the city office.

(Ord. No. 32-98, § 1, 8-27-98; Ord. No. 50-98, § 8, 1-7-99)

Sec. 7.5-127. Inspection and tests.

(1) *Scope.* This section pertains to the inspection and testing of installed water lines requiring testing for assuring proper operation and service and/or specifically specified to be tested. In general, all lines designed to operate under pressure shall be successfully tested. Tests of installed piping shall consist of a pressure and leakage test. All piping to be tested must satisfactorily comply with the pressure tests before being eligible for acceptance. In general, tests shall be conducted in accordance with AWWA Standard C-600 except as otherwise herein specified.

(2) *Testing.*

(a) After all piping has been placed, each run shall be tested by the contractor in the presence of the inspector and tests shall be continued until all leaks have been made tight to the satisfaction of the inspector. The contractor shall furnish all necessary water, meters, pumps, gauges, bulkheads, and other materials and appliances necessary to conduct the test as herein required. Every precaution must be taken to valve-off or otherwise protect control equipment in or attached to the pipe line to prevent damage or injury thereto. All piping shall be tested at two

hundred (200) psi for a minimum test duration of one (1) hour. The city or its representative may require a twenty-four-hour test if it so desires.

(b) Before applying the specified test pressure, all air shall be expelled from the pipe. If hydrants, blow-offs or air release valves are not available at the high places, the contractor shall make the necessary taps, as per the standard detail for tap construction, at points of highest elevation before the test is made and close the corporation stop after the test has been completed.

(c) Prior to the pressure test, pipe laid in trenches shall be backfilled adequately to secure the pipe during the test. Any observed leakage shall require corrective measures to pipe lines and/or joints as otherwise provided for in these specifications and to the satisfaction of the inspector. During the final pressure test the specified pressure shall be maintained in the pipe being tested for a minimum time of one (1) hour. Test pressure shall be maintained within five (5) psi of the specified test pressure for the duration of the test. Should the pressure drop more than five (5) psi at any time during the test period, the pressure shall be restored to the specified test pressure. An accurate pressure gauge with graduation not greater than five (5) psi shall be used.

(d) The city will furnish the necessary water for testing the lines. However, any water lost through breakage of lines or unnecessary or excessive flushing of line will be charged to the contractor. Each valved section must be flushed and tested at a pressure of two hundred (200) psi for one (1) hour. Lines shall be tested in sections in a manner that assures testing of the tapping valve and all main line valves. When testing at the above specified pressures, the rate of leakage shall not exceed fifteen (15) gallons per twenty-four (24) hours per inch diameter per mile of line. See the table below.

TABLE INSET:

Size of Pipe (in inches)	Leakage Tabulation Gallons/Hour/100 Feet	Gallons/Day/100 Feet
12	0.142	3.409
10	0.118	2.841
8	0.095	2.273
6	0.071	1.704

Any section of the line not meeting the above test shall have the leaks found and corrected at once and re-tested until the leakage falls within the limits specified above. Leakage shall be defined as the sum of the quantity of water that must be pumped into the test section to maintain the pressure within five (5) psi of the specified test pressure for the test duration plus water required to return the line to test pressure at the end of the test.

(e) All fire hydrants shall be flushed to check operations.

(f) All valves shall be located and operation checked.

(3) *Disinfection.* After leakage testing, and all necessary repairs have been made, the lines shall be flushed clean and then disinfected in strict accordance with AWWA Standard For Disinfecting Water Mains, AWWA C651, latest revision subject to the following special conditions:

(a) The method of disinfection shall be the continuous-feed method as follows:

1. Apply chlorine solution to achieve a concentration of at least twenty-five (25) milligrams per liter free chlorine in new line. Retain chlorinated water for twenty-four (24) hours.

2. Chlorine concentration shall be recorded at selected outlets along the line at the beginning and end of the twenty-four-hour period.

3. After twenty-four (24) hours, all samples of water shall contain at least ten (10) milligrams per liter free chlorine. Re-chlorinate if results are not obtained on all samples.

(b) The form of chlorine may be either: (1) a one (1) percent solution made from either sodium hypochlorite or calcium chlorine gas cylinder supplying a vacuum-type chlorinator, or (2) making a solution and pumping it into the pipeline.

(c) The contractor shall dechlorinate the highly-chlorinated water being flushed from the pipeline or otherwise dispose of in a manner complying with state environmental regulations.

(d) The developer shall be responsible for collecting bacteriological samples under city supervision. The city shall perform the initial bacteriological testing of water samples from the disinfected pipeline at no charge. The contractor shall be responsible for charges on all failed tests.

(e) Before any flushing or disinfection work is begun, the contractor shall outline his planned procedures for these tasks and obtain approval of the city.

(4) *Contractor qualifications.*

(a) Licensing and safety. All contractors who work on water systems that will be owned by the city must be licensed in accordance with state law and local ordinance. Compliance with applicable safety regulations is the responsibility of each company engaged in the work; the city assumes no responsibility for the actions of others on the job site. It is the responsibility of those installing water mains and related appurtenances to conform to OSHA regulations, 29 CFR Part 1926, Subpart P, Paragraph 1926.650 through 1926.653. Publications from OSHA can be obtained by contacting OSHA Publications Distribution, Washington, D.C.

(b) Contractors performing water system installations must be approved by the city and should be completely familiar with the procedures and contract requirements associated with this type project.

(c) Unsatisfactory work will cause a contractor not to be given a permit for future work.

(5) *Construction inspection.*

(a) *Responsibility for inspection.* The developer will be responsible for the quality, accuracy and workmanship of his completed work. City personnel will visit the job site on a periodic basis and will make spot checks as they deem appropriate. The city shall have the right to review and inspect all construction and may reject any work that does not meet quality control standards. The contractor shall leave trenches open at critical locations to allow visual inspection of fittings, valves and hydrants prior to backfilling. The city maintains the right to refuse performing inspections at unsafe worksites.

(b) *Access to project.* Authorized representatives of the city, which may include city employees, the city, state or federal agencies, shall have access to the site for inspection at any time.

(c) *Communications during construction.* All written communications regarding water construction shall be directed to the city water department. The developer shall be responsible for scheduling a preconstruction conference between their contractor and utilities and affected city departments prior to any construction activities.

After a preconstruction conference has been held the contractor will notify the city in writing two (2) days before starting construction. The contractor will provide notification by phone any time the work is to be vacated and will provide notice by phone prior to resuming work. The owner/developer shall request the final inspection in writing.

The city inspector may have informal verbal communications with the contractor foreman or superintendent at any time during construction. The city inspector will not direct the actions of contractor's workmen.

(d) *Concealed work.* The contractor shall notify the city and receive inspection approval prior to concealing certain work such as valves, fittings, bends, tees, fire hydrants, pipe bedding, reaction blocking, lot services, or other appurtenances.

(e) *As-built drawings provided by design professional.* As-built drawings will be provided and certified by the design professional who is employed by the developer. As-built drawings shall be submitted showing the horizontal location of the mains, main size, valve, hydrant, and service line and meter location. Locations shall be referenced to a fixed landmark where necessary. Provide detail drawings of crossings with other utilities showing vertical and horizontal clearances.

(f) *Minimum testing.* All costs for testing required by the city shall be paid for by the developer.

1. *Compaction of backfill.* Compaction testing will be required for mains constructed in paved areas or where pavement is planned. A minimum of two (2) tests at each road crossing will be conducted at varying depths as fill is being placed. If any of these tests show failing results, then the failing backfill will be removed, re-compacted and re-tested, and one (1) additional area will be tested as well.

2. *Pressure and disinfection tests.* Pressure and disinfection tests shall be observed until each test is passing.

(6) *Final inspection and conditional acceptance.* Prior to final inspection of the water system the developer shall have previously completed the pressure and disinfection tests. After the developer makes written request for final inspection, the city will schedule a final inspection. The contractor and the developer will be present during this final inspection. This final inspection will generally include spot checks of hydrants, valves and other appurtenances and a complete overview of the project.

After any discrepancies are corrected and approved as built drawings are submitted, the city will issue a letter certifying conditional acceptance of the water system. This letter shall commence the start of the twelve-month warranty period which is required of the contractor. On projects having phased development, this letter will clearly identify portions of the project being accepted.

At the end of twelve (12) months, the subdivision inspection team will again reinspect the entire development. When all discrepancies have been corrected, the city will issue an acceptance letter and will begin perpetual maintenance and operation of the water system.

(7) *Maintenance bond or letter of credit.* The developer shall post a maintenance bond or letter of credit of ten (10) percent of the total project cost on the facility for an eighteen-month period after completion and conditional acceptance of the facility by the city for all projects whose cost exceeds twenty thousand dollars (\$20,000.00).

(8) *Maintenance until final acceptance.* It shall be the developer's obligation to provide all maintenance for a twelve-month period after acceptance of the project by the city. At the end of the twelve-month maintenance period the city shall inspect the water system, and upon correction by the developer of all deficiencies noted by the city, the city will accept the water system for maintenance.

(Ord. No. 32-98, § 1, 8-27-98; Ord. No. 50-98, § 3, 1-7-99; Ord. No. 04-02, § 1, 1-3-02)

Sec. 7.5-128. Standard details.

The construction standard details numbered 5.8.01--5.8.12, attached to the ordinance from which this section derives and referred to in this chapter, are incorporated herein by reference as if fully set out at length. The standard details are on file in the office of the city clerk.

(Ord. No. 32-98, § 1, 8-27-98)

Secs. 7.5-129--7.5-150. Reserved.

ARTICLE VI. FLOODPLAIN MANAGEMENT/FLOOD DAMAGE PREVENTION ORDINANCE*

***Editor's note:** Ord. No. 60-06, adopted August 17, 2006, repealed the former Art. VI, §§ 7.5-151--7.5-156, and enacted a new Art. VI as set out herein. The former Art. VI pertained to flood damage prevention and derived from Ord. No. 32-98, § 1, 8-27-98.

Introduction

It is hereby determined that:

The flood hazard areas of the City of Cartersville are subject to periodic inundation which may result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood relief and protection, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.

Flood hazard areas can serve important stormwater management, water quality, streambank protection, stream corridor protection, wetland preservation and ecological purposes when permanently protected as undisturbed or minimally disturbed areas.

Effective floodplain management and flood hazard protection activities can

- (1) Protect human life and health;
- (2) Minimize damage to private property;
- (3) Minimize damage to public facilities and infrastructure such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains; and
- (4) Minimize expenditure of public money for costly flood control projects associated with flooding and generally undertaken at the expense of the general public.

Article IX, Section II of the Constitution of the State of Georgia and O.C.G.A. § 36-1-20(a) of the Official Code of Georgia Annotated have delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the City of Cartersville, Georgia, does ordain this article and establishes this set of floodplain management and flood hazard reduction policies for the purpose of regulating the use of flood hazard areas. It is determined that the regulation of flood hazard areas and the prevention of flood damage are in the public interest and will minimize threats to public health and safety, as well as to private and public property.

Sec. 7.5-151. General provisions.

(a) *Purpose and intent.* The purpose of this article is to protect, maintain and enhance the public health, safety, environment and general welfare and to minimize public and private losses due to flood conditions in flood hazard areas, as well as to protect the beneficial uses of floodplain areas for water quality protection, streambank and stream corridor protection, wetlands preservation and ecological and environmental protection by provisions designed to:

- (1) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- (2) Restrict or prohibit uses which are dangerous to health, safety and property due to flooding or erosion hazards, or which increase flood heights, velocities, or erosion;
- (3) Control filling, grading, dredging and other development which may increase flood damage or erosion;
- (4) Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands;
- (5) Limit the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of flood waters; and,
- (6) Protect the stormwater management, water quality, streambank protection, stream corridor protection, wetland preservation and ecological functions of natural floodplain areas.

(b) *Applicability.* This article shall be applicable to all areas of special flood hazard within the City of Cartersville.

(c) *Designation of ordinance administrator.* The chief building official, the city engineer or their designee is hereby appointed to administer and implement the provisions of this article.

(d) *Basis for area of special flood hazard--Flood area maps and studies.* For the purposes of this article, the following are adopted by reference:

(1) The flood insurance study (FIS), dated September 29, 1989, with accompanying maps and other supporting data and any revision thereto are hereby adopted by reference. For those land areas acquired by a municipality through annexation, the current effective FIS and data for Bartow County, dated September 29, 1989, with accompanying maps and other supporting data and any revision thereto are hereby adopted by reference.

(2) Other studies which may be relied upon for the establishment of the base flood elevation or delineation of the 100-year floodplain and flood-prone areas include:

a. Any flood or flood-related study conducted by the United States Army Corps of Engineers, the United States Geological Survey or any other local, state or federal agency applicable to the City of Cartersville; or

b. Any base flood study authored by a registered professional engineer in the State of Georgia which has been prepared by FEMA approved methodology and approved by the City of Cartersville.

(3) Other studies which may be relied upon for the establishment of the future-conditions flood elevation or delineation of the future-conditions floodplain and flood-prone areas include:

a. Any flood or flood-related study conducted by the United States Army Corps of Engineers, the United States Geological Survey, or any other local, state or federal agency applicable to the City of Cartersville; or

b. Any future-conditions flood study authored by a registered professional engineer in the State of Georgia which has been prepared by FEMA approved methodology approved by the City of Cartersville.

(4) The repository for public inspection of the FIS, accompanying maps and other supporting data is located at the office of the chief building official.

(e) *Compatibility with other regulations.* This article is not intended to modify or repeal any other ordinance, rule, regulation, statute, easement, covenant, deed restriction or other provision of law. The requirements of this article are in addition to the requirements of any other ordinance, rule, regulation or other provision of law, and where any provision of this article imposes restrictions different from those imposed by any other ordinance, rule, regulation or other provision of law, whichever provision is more restrictive or impose higher protective standards for human health or the environment shall control.

(f) *Severability.* If the provisions of any section, subsection, paragraph, subdivision or clause of this article 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 article.

(g) *Warning and disclaimer of liability.* The degree of flood protection required by this article is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur; flood heights may be increased by manmade or natural causes. This article does not imply that land outside the areas of special flood hazard or uses permitted within such areas will be free from flooding or flood damages. This article shall not create liability on the part of the City of Cartersville or by any officer or employee thereof for any flood damages that result from reliance on this article or any administrative decision lawfully made there under.

(Ord. No. 60-06, 8-17-06)

Sec. 7.5-152. Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Addition (to an existing building) means any walled and roofed expansion to the perimeter of a building in which the addition is connected by a common load-bearing wall other than a fire wall. Any walled and roofed addition which is connected by a fire wall or is separated by an independent perimeter load-bearing wall shall be considered new construction.

Appeal means a request for a review of the (appointed official)'s interpretation of any provision of this article.

Area of shallow flooding means a designated AO or AH zone on a community's flood insurance rate map (FIRM) with base flood depths from one (1) to three (3) feet, and/or where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

Area of special flood hazard is the land subject to a one (1) percent or greater chance of flooding in any given year. This includes all floodplain and floodprone areas at or below the base flood elevation (including A, A1-30, A-99, AE, AO, AH, and AR on the FHBM or the FIRM), all floodplain and floodprone areas at or below the future-conditions flood elevation, and all other floodprone areas as referenced in subsection (d) above. All streams with a drainage area of one hundred (100) acres or greater shall have the area of special flood hazard delineated.

Base flood means the flood having a one (1) percent chance of being equaled or exceeded in any given year, also known as the 100-year flood.

Base flood elevation means the highest water surface elevation anticipated at any given point during the base flood.

Basement means that portion of a building having its floor subgrade (below ground level) on all sides.

Building means any structure built for support, shelter, or enclosure for any occupancy or storage.

Development means any manmade change to improved or unimproved real estate including but not limited to buildings or other structures, mining, dredging, filling, clearing, grubbing, grading, paving, any other installation of impervious cover, excavation or drilling operations or storage of equipment or materials.

Elevated building means a non-basement building built to have the lowest floor of the lowest enclosed area elevated above the ground level by means of fill, solid foundation perimeter walls, pilings, columns, piers, or shear walls adequately anchored so as not to impair the structural integrity of the building during a base flood event.

Existing construction Any structure for which the "start of construction" commenced before September 29, 1989.

Existing manufactured home park or subdivision means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum the installation of utilities, the construction of streets, and final site grading or the pouring of concrete pads) is completed before September 29, 1989.

Expansion to an existing manufactured home park or subdivision means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed, including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads.

FEMA means the Federal Emergency Management Agency.

Flood or *flooding* means a general and temporary condition of partial or complete inundation of normally dry land areas from:

- (a) The overflow of inland or tidal waters; or
- (b) The unusual and rapid accumulation or runoff of surface waters from any source.

Flood hazard boundary map or *FHBM* means an official map of a community, issued by the Federal Insurance Administration, where the boundaries of areas of special flood hazard have been defined as zone A.

Flood insurance rate map or *FIRM* means an official map of a community, issued by the Federal Insurance Administration, delineating the areas of special flood hazard and/or risk premium zones applicable to the community.

Flood insurance study or *FIS* means the official report by the Federal Insurance Administration evaluating flood hazards and containing flood profiles and water surface elevations of the base flood.

Floodplain means any land area susceptible to flooding.

Floodproofing means any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

Floodway or *regulatory floodway* means the channel of a stream or other watercourse and the adjacent areas of the floodplain which is necessary to contain and discharge the base flood flow without cumulatively increasing the base flood elevation more than one (1) foot.

Functionally dependent use means a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water.

Future conditions flood means the flood having a one percent chance of being equaled or exceeded in any given year based on future-conditions hydrology. Also known as the 100-year future-conditions flood.

Future-conditions flood elevation means the flood standard equal to or higher than the base flood elevation. The future-conditions flood elevation is defined as the highest water surface anticipated at any given point during the future-conditions flood.

Future-conditions floodplain means any land area susceptible to flooding by the future-conditions flood.

Future-conditions hydrology means the flood discharges associated with projected land-use conditions based on a community's zoning map, comprehensive land-use plans, and/or watershed study projections, and without consideration of projected future construction of flood detention structures or projected future hydraulic modifications within a stream or other waterway, such as bridge and culvert construction, fill, and excavation.

Highest adjacent grade means the highest natural elevation of the ground surface, prior to construction, adjacent to the proposed foundation of a building.

Historic structure means any structure that is:

- (a) Listed individually in the National Register of Historic Places (a listing maintained by the U.S. Department of Interior) or preliminarily determined by the secretary of the interior as meeting the requirements for individual listing on the National Register;
- (b) Certified or preliminarily determined by the secretary of the interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the secretary to qualify as a registered historic district;
- (c) Individually listed on a state inventory of historic places and determined as eligible by states with historic preservation programs which have been approved by the secretary of the interior; or
- (d) Individually listed on a local inventory of historic places and determined as eligible by communities with historic preservation programs that have been certified either:
 1. By an approved state program as determined by the secretary of the interior; or
 2. Directly by the secretary of the interior in states without approved programs.

Lowest floor means the lowest floor of the lowest enclosed area, including basement. An unfinished or flood resistant enclosure, used solely for parking of vehicles, building access, or storage, in an area other than a basement, is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of other provisions of this article.

Manufactured home means a building, transportable in one (1) or more sections, built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. The term includes any structure commonly referred to as a "mobile home" regardless of the date of manufacture. The term also includes parked trailers, travel trailers and similar transportable structures placed on a site for one hundred eighty (180) consecutive days or longer and intended to be improved property.

Mean sea level means the average height of the sea for all stages of the tide. It is used as a reference for establishing various elevations within the floodplain. For purposes of this article the term is synonymous with National Geodetic Vertical Datum (NGVD) and/or the North American Vertical Datum (NAVD) of 1988.

National Geodetic Vertical Datum (NGVD) as corrected in 1929 is a vertical control used as a reference for establishing varying elevations within the floodplain.

New construction means any structure (see definition) for which the "start of construction" commenced after September 29, 1989 and includes any subsequent improvements to the structure.

New manufactured home park or subdivision means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after September 29, 1989.

North American Vertical Datum (NAVD) of 1988 is a vertical control used as a reference for establishing varying elevations within the floodplain.

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 of Cartersville to the applicant which is required prior to undertaking any development activity.

Recreational vehicle means a vehicle which is:

- (a) Built on a single chassis;
- (b) Four hundred (400) square feet or less when measured at the largest horizontal projection;
- (c) Designed to be self-propelled or permanently towable by light duty truck; and,

(d) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

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

Start of construction means the date the permit was issued, provided the actual start of construction, repair, reconstruction, or improvement was within one hundred eighty (180) days of the permit date. The actual start means the first placement of permanent construction of the structure such as the pouring of slabs or footings, installation of piles, construction of columns, or any work beyond the stage of excavation, and includes the placement of a manufactured home on a foundation. Permanent construction does not include initial land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of buildings appurtenant to the permitted structure, such as garages or sheds not occupied as dwelling units or part of the main structure. (NOTE: accessory structures are not exempt from any ordinance requirements). For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

Structure means a walled and roofed building that is principally above ground, a manufactured home, a gas or liquid storage tank.

Subdivision means the division of a tract or parcel of land resulting in one (1) or more new lots or building sites for the purpose, whether immediately or in the future, of sale, other transfer of ownership or land development, and includes divisions of land resulting from or made in connection with the layout or development of a new street or roadway or a change in an existing street or roadway.

Substantial damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed fifty (50) percent of the market value of the structure before the damage occurred.

Substantial improvement means any combination of repairs, reconstruction, alteration, or improvements to a building, taking place during a ten-year period, in which the cumulative cost equals or exceeds fifty (50) percent of the market value of the structure prior to the improvement. The market value of the building means (1) the appraised value of the structure prior to the start of the initial repair or improvement, or (2) in the case of damage, the value of the structure prior to the damage occurring. This term includes structures which have incurred "substantial damage" regardless of the actual amount of repair work performed. For the purposes of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the building. The term does not, however, include those improvements of a building required to comply with existing health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions, which have been pre-identified by the code enforcement official, and not solely triggered by an improvement or repair project.

Substantially improved existing manufactured home park or subdivision is where the repair, reconstruction, rehabilitation or improvement of the streets, utilities and pads equals or exceeds fifty (50) percent of the value of the streets, utilities and pads before the repair, reconstruction or improvement commenced.

Variance is a grant of relief from the requirements of this article which permits construction in a manner otherwise prohibited by this article.

Violation means the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certificates, or other evidence of compliance required in this article is presumed to be in violation until such time as that documentation is provided.

(Ord. No. 60-06, 8-17-06)

Sec. 7.5-153. Permit procedures and requirements.

(a) *Permit application requirements.* No owner or developer shall perform any development activities on a site where an area of special flood hazard is located without first meeting the requirements of this article prior to commencing the proposed activity.

Unless specifically excluded by this article, any landowner or developer desiring a permit for a development activity shall submit to the City of Cartersville a permit application on a form provided by the City of Cartersville for that purpose.

No permit will be approved for any development activities that do not meet the requirements, restrictions and criteria of this article.

(b) *Floodplain management plan requirements.* An application for a development project with any area of special flood hazard located on the site will be required to include a floodplain management/flood damage prevention plan. This plan shall include the following items:

(1) Site plan drawn to scale, which includes but is not limited to:

- a. Existing and proposed elevations of the area in question and the nature, location and dimensions of existing and/or proposed structures, earthen fill placement, amount and location of excavation material, and storage of materials or equipment;
- b. For all proposed structures, spot ground elevations at building corners and two-foot contour intervals along the foundation footprint, or one foot contour elevations throughout the building site;
- c. Proposed locations of water supply, sanitary sewer, and utilities;
- d. Proposed locations of drainage and stormwater management facilities;
- e. Proposed grading plan;
- f. Base flood elevations and future-conditions flood elevations;
- g. Boundaries of the base flood floodplain and future-conditions floodplain;
- h. If applicable, the location of the floodway; and
- i. Certification of the above by a registered professional engineer or surveyor.
- j. A local bench mark must be provided within the limits of the site.

(2) Building and foundation design detail, including but not limited to:

- a. Elevation in relation to mean sea level (or highest adjacent grade) of the lowest floor, including basement, of all proposed structures;
- b. Elevation in relation to mean sea level to which any non-residential structure will be floodproofed;
- c. Certification that any proposed non-residential floodproofed structure meets the criteria in section 7.5-155(b)(2);
- d. For enclosures below the base flood elevation, location and total net area of foundation openings as required in section 7.5-155(a)(5).
- e. Design plans certified by a registered professional engineer or architect for all proposed structure(s).

(3) Description of the extent to which any watercourse will be altered or relocated as a result of the proposed development;

(4) Hard copies and digital files of computer models, if any, copies of work maps, comparison of pre-and post development conditions base flood elevations, future-conditions flood elevations, flood protection elevations, special flood hazard areas and regulatory floodway widths, flood profiles and all other computations and other information similar to that presented in the FIS;

(5) Copies of all applicable state and federal permits necessary for proposed development; and

(6) All appropriate certifications required under this article. The approved floodplain management/flood damage prevention plan shall contain certification by the applicant that all development activities will be done according to the plan or previously approved revisions. Any and all development permits and/or use and occupancy certificates or permits may be revoked at any time if the construction and development activities are not in strict accordance with approved plans.

(c) *Construction stage submittal requirements.* For all new construction and substantial improvements on sites with a floodplain management/flood damage prevention plan, the permit holder shall provide to the ordinance administrator a certified as-built elevation certificate or floodproofing certificate for non-residential construction including the lowest floor elevation or flood-proofing level immediately after the lowest floor or flood-proofing is completed. A final elevation certificate shall be provided after completion of construction including final grading of the site. Any lowest floor certification made relative to mean sea level shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by same. When flood-proofing is utilized for non-residential structures, said certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same.

Any work undertaken prior to approval of these certifications shall be at the permit holder's risk. The ordinance administrator shall review the above referenced certification data submitted. Deficiencies detected by such review

shall be corrected by the permit holder immediately and prior to further work being allowed to proceed. Failure to submit certification or failure to make the corrections required hereby shall be cause to issue a stop work order for the project.

(d) *Duties and responsibilities of the administrator.* Duties of the ordinance administrator shall include, but shall not be limited to:

- (1) Review all development applications and permits to assure that the requirements of this article have been satisfied and to determine whether proposed building sites will be reasonably safe from flooding;
- (2) Require that copies of all necessary permits from governmental agencies from which approval is required by federal or state law, including but not limited to Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334, be provided and maintained on file;
- (3) When base flood elevation data or floodway data have not been provided, then the ordinance administrator shall require the applicant to obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal, state or other sources in order to meet the provisions of sections 7.5-154 and 7.5-155;
- (4) Review and record the actual elevation in relation to mean sea level (or highest adjacent grade) of the lowest floor, including basement, of all new or substantially improved structures;
- (5) Review and record the actual elevation, in relation to mean sea level to which any substantially improved structures have been flood-proofed;
- (6) When flood-proofing is utilized for a non-residential structure, the ordinance administrator shall obtain certification of design criteria from a registered professional engineer or architect;
- (7) Notify affected adjacent communities and the Georgia Department of Natural Resources prior to any alteration or relocation of a watercourse and submit evidence of such notification to the Federal Emergency Management Agency (FEMA);
- (8) Where interpretation is needed as to the exact location of boundaries of the areas of special flood hazard (e.g., where there appears to be a conflict between a mapped boundary and actual field conditions) the ordinance administrator shall make the necessary interpretation. Any person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this article. Where floodplain elevations have been defined, the floodplain shall be determined based on flood elevations rather than the area graphically delineated on the floodplain maps; and,
- (9) All records pertaining to the provisions of this article shall be maintained in the office of the ordinance administrator and shall be open for public inspection.

(Ord. No. 60-06, 8-17-06)

Sec. 7.5-154. Standards for development.

(a) *Definition of floodplain boundaries.*

(1) Studied "A" zones, as identified in the FIS, shall be used to establish base flood elevations whenever available.

(2) For all streams with a drainage area of one hundred (100) acres or greater, the future-conditions flood elevations shall be provided by the City of Cartersville. If future-conditions elevation data is not available from the City of Cartersville, then it shall be determined by a registered professional engineer using a method approved by FEMA and the City of Cartersville.

(b) *Definition of floodway boundaries.*

(1) The width of a floodway shall be determined from the FIS or FEMA approved flood study. For all streams with a drainage area of one hundred (100) acres or greater, the regulatory floodway shall be provided by the City of Cartersville. If floodway data is not available from the City of Cartersville, then it shall be determined by a registered professional engineer using a method approved by FEMA and the City of Cartersville.

(c) *General standards.*

(1) No development shall be allowed within the future-conditions floodplain that could result in any of the following:

- a. Raising the base flood elevation or future-conditions flood elevation equal to or more than 0.01 foot;
- b. Reducing the base flood or future-conditions flood storage capacity;
- c. Changing the flow characteristics as to the depth and velocity of the waters of the base flood or future-conditions flood as they pass both the upstream and the downstream boundaries of the development area; or
- d. Creating hazardous or erosion-producing velocities, or resulting in excessive sedimentation.

(2) Any development within the future-conditions floodplain allowed under (1) above shall also meet the following conditions:

a. Compensation for storage capacity shall occur between the average ground water table elevation and the base flood elevation for the base flood, and between the average ground water table elevation and the future-condition flood elevation for the future-conditions flood, and lie either within the boundaries of ownership of the property being developed and shall be within the immediate vicinity of the location of the encroachment. Acceptable means of providing required compensation include lowering of natural ground elevations within the floodplain, or lowering of adjoining land areas to create additional floodplain storage. In no case shall any required compensation be provided via bottom storage or by excavating below the elevation of the top of the natural (pre-development) stream channel unless such excavation results from the widening or relocation of the stream channel;

b. Cut areas shall be stabilized and graded to a slope of no less than 2.0 percent;

c. Effective transitions shall be provided such that flow velocities occurring on both upstream and downstream properties are not increased or decreased;

d. Verification of no-rise conditions (0.01 foot or less), flood storage volumes, and flow characteristics shall be provided via a step-backwater analysis meeting the requirements of section 7.5-154(d);

e. Public utilities and facilities, such as water, sanitary sewer, gas, and electrical systems, shall be located and constructed to minimize or eliminate infiltration or contamination from flood waters; and

f. Any significant physical changes to the base flood floodplain shall be submitted as a conditional letter of map revision (CLOMR) or conditional letter of map amendment (CLOMA), whichever is applicable. The CLOMR submittal shall be subject to approval by the City of Cartersville using the community consent forms before forwarding the submittal package to FEMA for final approval. The responsibility for forwarding the CLOMR to FEMA and for obtaining the CLOMR approval shall be the responsibility of the applicant. Within six months of the completion of construction, the applicant shall submit as-built surveys for a final letter of map revision (LOMR).

(d) *Engineering study requirements for floodplain encroachments.* An engineering study is required, as appropriate to the proposed development activities on the site, whenever a development proposes to disturb any land within the future-conditions floodplain, except for a residential single-lot development on streams without established base flood elevations and/or floodways for which the provisions of section 7.5-154(d) apply. This study shall be prepared by a currently registered professional engineer in the State of Georgia and made a part of the application for a permit. This information shall be submitted to and approved by the City of Cartersville prior to the approval of any permit which would authorize the disturbance of land located within the future-conditions floodplain. Such study shall include:

(1) Description of the extent to which any watercourse or floodplain will be altered or relocated as a result of the proposed development;

(2) Step-backwater analysis, using a FEMA-approved methodology approved by the City of Cartersville. Cross-sections (which may be supplemented by the applicant) and flow information will be obtained whenever available. Computations will be shown duplicating FIS results and will then be rerun with the proposed modifications to determine the new base flood profiles, and future-conditions flood profiles;

(3) Floodplain storage calculations based on cross-sections (at least one every one hundred (100) feet) showing existing and proposed floodplain conditions to show that base flood floodplain and future-conditions floodplain storage capacity would not be diminished by the development;

(4) The study shall include a preliminary plat, grading plan, or site plan, as appropriate, which shall clearly define all future-conditions floodplain encroachments.

(e) *Floodway encroachments.* Located within areas of special flood hazard are areas designated as floodway. A floodway may be an extremely hazardous area due to velocity flood waters, debris or erosion potential. In addition, floodways must remain free of encroachment in order to allow for the discharge of the base flood without increased flood heights. Therefore the following provisions shall apply:

(1) Encroachments are prohibited, including earthen fill, new construction, substantial improvements or other development within the regulatory floodway, except for activities specifically allowed in subsection (2) below.

(2) Encroachments for bridges, culverts, roadways and utilities within the regulatory floodway may be permitted provided it is demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the encroachment shall not result in any increase to the pre-project base flood elevations,

floodway elevations, or floodway widths during the base flood discharge. A registered professional engineer must provide supporting technical data and certification thereof; and,

(3) If the applicant proposes to revise the floodway boundaries, no permit authorizing the encroachment into or an alteration of the floodway shall be issued by the City of Cartersville until an affirmative conditional letter of map revision (CLOMR) is issued by FEMA and no-rise certification is approved by the City of Cartersville.

(f) *Maintenance requirements.* The property owner shall be responsible for continuing maintenance as may be needed within an altered or relocated portion of a floodplain on his property so that the flood-carrying or flood storage capacity is not diminished. The City of Cartersville may direct the property owner (at no cost to the city) to restore the flood-carrying or flood storage capacity of the floodplain if the owner has not performed maintenance as required by the approved floodplain management plan on file with the City of Cartersville.

(Ord. No. 60-06, 8-17-06)

Sec. 7.5-155. Provisions for flood damage reduction.

(a) *General standards.* In all areas of special flood hazard the following provisions apply:

(1) New construction of principal buildings (residential or non-residential), including manufactured homes, shall not be allowed within the limits of the future-conditions floodplain, unless all requirements of sections 7.5-154(c), (d), and (e) have been met;

(2) New construction or substantial improvements of existing structures shall be anchored to prevent flotation, collapse or lateral movement of the structure;

(3) New construction or substantial improvements of existing structures shall be constructed with materials and utility equipment resistant to flood damage;

(4) New construction or substantial improvements of existing structures shall be constructed by methods and practices that minimize flood damage;

(5) *Elevated buildings.* All new construction and substantial improvements of existing structures that include any fully enclosed area located below the lowest floor formed by foundation and other exterior walls shall be designed so as to be an unfinished and flood resistant enclosure. The enclosure shall be designed to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwater.

a. Designs for complying with this requirement must either be certified by a professional engineer or architect or meet the following minimum criteria:

1. Provide a minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding;

2. The bottom of all openings shall be no higher than one (1) foot above grade; and,

3. Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwater in both directions.

b. So as not to violate the "lowest floor" criteria of this article, the unfinished and flood resistant enclosure shall solely be used for parking of vehicles, limited storage of maintenance equipment used in connection with the premises, or entry to the elevated area; and,

c. The interior portion of such enclosed area shall not be partitioned or finished into separate rooms.

(6) All heating and air conditioning equipment and components (including ductwork), all electrical, ventilation, plumbing, and other service facilities shall be designed and/or located four (4) feet above the base flood elevation or two (2) feet above the future-conditions flood elevation, whichever is higher, so as to prevent water from entering or accumulating within the components during conditions of flooding;

(7) Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This standard shall be in addition to and consistent with applicable state requirements for resisting wind forces;

(8) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;

(9) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters;

(10) On-site waste disposal systems shall be located and constructed to avoid impairment to them, or contamination from them, during flooding; and,

(11) Any alteration, repair, reconstruction or improvement to a structure which is not compliant with the provisions of this article, shall be undertaken only if the non- conformity is not furthered, extended or replaced.

(12) If the proposed development is located in multiple flood zones or multiple base flood elevation cross the proposed site, the higher or more restrictive base flood elevation or future condition elevation and development standards shall take precedence.

(b) *Building standards for structures and buildings within the future- conditions floodplain.* The following provisions, in addition to those in section 7.5-155(a), shall apply:

(1) *Residential buildings.*

a. *New construction.* New construction of principal buildings, including manufactured homes shall not be allowed within the limits of the future-conditions floodplain unless all requirements of sections 7.5-154(c), (d) and (e) have been met. If all of the requirements of sections 7.5-154(c), (d) and (e) have been met, all new construction shall have the lowest floor, including basement, elevated no lower than four (4) feet above the base flood elevation or two (2) feet above the future-conditions flood elevation, whichever is higher. Should solid foundation perimeter walls be used to elevate the structure, openings sufficient to equalize the hydrologic flood forces on exterior walls and to facilitate the unimpeded movements of floodwaters shall be provided in accordance with standards of section 7.5-155(a)(5).

b. *Substantial improvements.* Substantial improvement of any principal structure or manufactured home shall have the lowest floor, including basement, elevated no lower than four (4) feet above the base flood elevation or two (2) feet above the future-conditions flood elevation, whichever is higher. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to equalize the hydrologic flood forces on exterior walls and to facilitate the unimpeded movements of flood waters shall be provided in accordance with standards of section 7.5-155(a)(5).

(2) *Non-residential buildings.*

a. *New construction.* New construction of principal buildings, including manufactured homes shall not be allowed within the limits of the future-conditions floodplain unless all requirements of sections 7.5-154(c), (d) and (e) have been met. New construction that has met all of the requirements of sections 7.5-154(c), (d) and (e) may be flood-proofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be watertight to two (2) feet above the base flood elevation, or at least as high as the future-conditions flood elevation, whichever is higher, with walls substantially impermeable to the passage of water and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above, and shall provide such certification to the ordinance administrator.

b. *Substantial improvements.* Substantial improvement of any principal non-residential structure located in A1-30, AE, or AH zones, may be authorized by the ordinance administrator to be flood-proofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be watertight to two (2) feet above the base flood elevation, or at least as high as the future-conditions flood elevation, whichever is higher, with walls substantially impermeable to the passage of water, and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above, and shall provide such certification to the ordinance administrator.

(3) *Accessory structures and facilities.* Accessory structures and facilities (i.e., barns, sheds, gazebos, detached garages, parking lots, recreational facilities and other similar non-habitable structures and facilities) which are permitted to be located within the limits of the floodplain shall be constructed of flood-resistant materials and designed to pass all floodwater in accordance with section 7.5-155(a)(5) and be anchored to prevent flotation, collapse or lateral movement of the structure.

(4) *Standards for recreational vehicles.* All recreational vehicles placed on sites must either:

a. Be on the site for fewer than one hundred eighty (180) consecutive days and be fully licensed and ready for highway use, (a recreational vehicle is ready for highway use if it is licensed, on its wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached structures or additions); or

b. The recreational vehicle must meet all the requirements for residential buildings--substantial improvements (section 7.5-155(b)(1)b.), including the anchoring and elevation requirements.

(5) *Standards for manufactured homes.*

a. New manufactured homes shall not be allowed to be placed within the limits of the future-conditions floodplain unless all requirements of sections 7.5-154(c), (d) and (e) have been met.

b. Manufactured homes placed and/or substantially improved in an existing manufactured home park or subdivision shall be elevated so that either:

1. The lowest floor of the manufactured home is elevated no lower than four (4) feet above the level of the base flood elevation, or two (2) feet above the future-conditions flood elevation, whichever is higher; or

2. The manufactured home chassis is elevated and supported by reinforced piers (or other foundation elements of at least an equivalent strength) of no less than 36 inches in height above grade.

c. All manufactured homes must be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement in accordance with standards of section 7.5-155(a)(7).

(c) *Building standards for structures and buildings authorized adjacent to the future-conditions floodplain.*

(1) *Residential buildings.* For new construction or substantial improvement of any principal residential building or manufactured home, the elevation of the lowest floor, including basement and access to the building, shall be at least four (4) feet above the base flood elevation or two (2) feet above the future-conditions flood elevation, whichever is higher.

(2) *Non-residential buildings.* For new construction or substantial improvement of any principal non-residential building, the elevation of the lowest floor, including basement and access to the building, shall be at least two (2) feet above the level of the base flood elevation or at least as high as the future-conditions flood elevation, whichever is higher.

(d) *Building standards for residential single-lot developments on streams without established base flood elevations and/or floodway (A-zones).* For a residential single-lot development not part of a subdivision that has areas of special flood hazard, where streams exist but no base flood data have been provided (A-zones), the ordinance administrator shall review and reasonably utilize any available scientific or historic flood elevation data, base flood elevation and floodway data, or future-conditions flood elevation data available from a federal, state, local or other source, in order to administer the provisions and standards of this article.

If data are not available from any of these sources, the following provisions shall apply:

(1) No encroachments, including structures or fill material, shall be located within an area equal to twice the width of the stream or fifty (50) feet from the top of the bank of the stream, whichever is greater.

(2) In special flood hazard areas without base flood or future-conditions flood elevation data, new construction and substantial improvements of existing structures shall have the lowest floor of the lowest enclosed area (including basement) elevated no less than four (4) feet above the highest adjacent grade at the building site. Openings sufficient to facilitate the unimpeded movements of floodwaters shall be provided in accordance with section 7.5-155(a)(5).

(e) *Building standards for areas of shallow flooding (AO-zones).* Areas of special flood hazard may include designated "AO" shallow flooding areas. These areas have base flood depths of one (1) to three (3) feet above ground, with no clearly defined channel. In these areas the following provisions apply:

(1) All substantial improvements of residential and non-residential structures shall have the lowest floor, including basement, elevated to no lower than two (2) feet above the flood depth number in feet specified on the flood insurance rate map (FIRM), above the highest adjacent grade. If no flood depth number is specified, the lowest floor, including basement, shall be elevated at least four (4) feet above the highest adjacent grade. Openings sufficient to facilitate the unimpeded movements of flood waters shall be provided in accordance with standards of section 7.5-155(a)(5).

(2) Substantial improvement of a non-residential structure may be flood-proofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be watertight to the specified FIRM flood level plus two (2) feet above the highest adjacent grade, with walls substantially impermeable to the passage of water, and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice; and,

(3) Drainage paths shall be provided to guide floodwater around and away from any proposed structure.

(f) *Standards for subdivisions.*

(1) All subdivision proposals shall identify the special flood hazard area and provide base flood elevation data and future-conditions flood elevation data;

- (2) All residential lots in a subdivision proposal shall have sufficient buildable area outside of the future-conditions floodplain such that encroachments into the future-conditions floodplain for residential structures will not be required;
 - (3) All subdivision plans will provide the elevations of proposed structures in accordance with section 7.5-153(b);
 - (4) All subdivision proposals shall be consistent with the need to minimize flood damage;
 - (5) All subdivision proposals shall have public utilities and facilities such as water, sanitary sewer, gas, and electrical systems located and constructed to minimize or eliminate infiltration of flood waters, and discharges from the systems into flood waters; and
 - (6) All subdivision proposals shall include adequate drainage and stormwater management facilities per the requirements of the City of Cartersville to reduce potential exposure to flood hazards.
- (Ord. No. 60-06, 8-17-06)

Sec. 7.5-156. Variance procedures.

The following variance and appeals procedures shall apply to an applicant who has been denied a permit for a development activity or to an owner or developer who has not applied for a permit because it is clear that the proposed development activity would be inconsistent with the provisions of this article. A request for a variance may be submitted by an applicant who has been denied a permit by the City of Cartersville or by an owner or developer who has not previously applied for a permit for the reasons stated herein above.

- (1) Requests for variances from the requirements of this article shall be submitted to the City of Cartersville. All such requests shall be heard and decided in accordance with procedures to be published in writing by the City of Cartersville. At a minimum, such procedures shall include notice to all affected parties and the opportunity to be heard.
- (2) Any person adversely affected by any decision of the City of Cartersville shall have the right to appeal such decision to the board of zoning appeals (BZA) as established by City of Cartersville in accordance with procedures to be published in writing by the BZA. At a minimum, such procedures shall include notice to all affected parties and the opportunity to be heard.
- (3) Any person aggrieved by the decision of the BZA may appeal such decision in the following sequence: Mayor and city council; Superior Court of Bartow County.
- (4) Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure, and the variance issued shall be the minimum necessary to preserve the historic character and design of the structure.
- (5) Variances may be issued for development necessary for the conduct of a functionally dependent use, provided the criteria of this section are met, no reasonable alternative exists, and the development is protected by methods that minimize flood damage during the base flood and create no additional threats to public safety.
- (6) Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
- (7) In reviewing such requests, the City of Cartersville and the BZA shall consider all technical evaluations, relevant factors, and all standards specified in this and other sections of this article.
- (8) Conditions for variances:
 - a. A variance shall be issued only when there is:
 1. A finding of good and sufficient cause;
 2. A determination that failure to grant the variance would result in exceptional hardship; and
 3. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, or the creation of a nuisance.
 - b. The provisions of this article are minimum standards for flood loss reduction; therefore, any deviation from the standards must be weighed carefully. Variances shall only be issued upon determination that the variance is the minimum necessary, considering the flood hazard, to afford relief; and, in the instance of a historic structure, a determination that the variance is the minimum necessary so as not to destroy the historic character and design of the building.
 - c. Any person to whom a variance is granted shall be given written notice specifying the difference between the base flood elevation and the elevation of the proposed lowest floor and stating that the cost of flood insurance will be commensurate with the increased risk to life and property resulting from the reduced lowest floor elevation.

d. The ordinance administrator shall maintain the records of all appeal actions and report any variances to the Federal Emergency Management Agency upon request.

(9) Any person requesting a variance shall, from the time of the request until the time the request is acted upon, submit such information and documentation as the City of Cartersville and the BZA shall deem necessary to the consideration of the request.

(10) Upon consideration of the factors listed above and the purposes of this article, the City of Cartersville and the BZA may attach such conditions to the granting of variances as they deem necessary or appropriate, consistent with the purposes of this article.

(11) Variances shall not be issued "after the fact."

(Ord. No. 60-06, 8-17-06)

Sec. 7.5-157. Violations, enforcement and penalties.

Any action or inaction which violates the provisions of this article 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.

(1) *Notice of violation.* If the City of Cartersville 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 article, 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 article 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:

- a. The name and address of the owner or the applicant or the responsible person;
- b. The address or other description of the site upon which the violation is occurring;
- c. A statement specifying the nature of the violation;
- d. A description of the remedial measures necessary to bring the action or inaction into compliance with the permit, the stormwater management plan or this article and the date for the completion of such remedial action;
- e. A statement of the penalty or penalties that may be assessed against the person to whom the notice of violation is directed; and
- f. A statement that the determination of violation may be appealed to the City of Cartersville 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).

(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 (1) 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 of Cartersville 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 of Cartersville may take any one (1) or more of the following actions or impose any one (1) or more of the following penalties:

- a. *Stop work order.* The City of Cartersville may issue a stop work order which 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.
- b. *Withhold certificate of occupancy.* The City of Cartersville 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.

c. *Suspension, revocation or modification of permit.* The City of Cartersville may suspend, revoke or modify the permit authorizing the 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 of Cartersville may deem necessary) to enable the applicant or other responsible person to take the necessary remedial measures to cure such violations.

d. *Civil penalties.* In the event the applicant or other responsible person fails to take the remedial measures set forth 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 of Cartersville 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 of Cartersville has taken one (1) or more of the actions described above, the City of Cartersville may impose a penalty not to exceed one thousand dollars (\$1,000.00) (depending on the severity of the violation) for each day the violation remains un-remedied after receipt of the notice of violation.

e. *Criminal penalties.* For intentional and flagrant violations of this article, the City of Cartersville may issue a citation to the applicant or other responsible person, requiring such person to appear in municipal court to answer charges for such violation. Upon conviction, such person shall be punished by a fine not to exceed one thousand dollars (\$1,000.00) 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.

(Ord. No. 60-06, 8-17-06)

Secs. 7.5-158--7.5-180. Reserved.

ARTICLE VII. SOIL EROSION AND SEDIMENT CONTROL*

***Editor's note:** Ord. No. 11-10, adopted May 6, 2010, repealed Art. VII, §§ 7.5-181--7.5-189 in their entirety and replaced them with similar provisions as set out herein. Formerly, such sections derived from Ord. No. 53-04, 8-5-04; Ord. No. 61-00, 12-21-00; Ord. No. 32-98, § 1, 8-27-98.

Sec. 7.5-181. Title.

This article will be known as “City of Cartersville Soil Erosion and Sediment Control Ordinance.” (Ord. No. 11-10, 5-6-10)

Sec. 7.5-182. Definitions.

The following definitions shall apply in the interpretation and enforcement of this ordinance, unless otherwise specifically stated:

Best Management Practices (BMP's): These include sound conservation and engineering practices to prevent and minimize erosion and resultant sedimentation, which are consistent with, and no less stringent than, those practices contained in the ‘Manual for Erosion and Sediment Control in Georgia’ published by the Commission as of January 1 of the year in which the land-disturbing activity was permitted.

Board: The Board of Natural Resources.

Buffer: The area of land immediately adjacent to the banks of state waters in its natural state of vegetation, which facilitates the protection of water quality and aquatic habitat.

Certified Personnel: A person who has successfully completed the appropriate certification course approved by the Georgia Soil and Water Conservation Commission.

Commission: The Georgia Soil and Water Conservation Commission (GSWCC).

CPESC: Certified Professional in Erosion and Sediment Control with current certification by Certified Profession in Erosion and Sediment Control Inc., a corporation registered in North Carolina, which is also referred to as CPESC or CPESC, Inc.

Cut: A portion of land surface or area from which earth has been removed or will be removed by excavation; the depth below original ground surface to excavated surface.(Also known as excavation.)

Department: The Georgia Department of Natural Resources (DNR).

Design Professional: A professional licensed by the State of Georgia in the field of: engineering, architecture, landscape architecture, forestry, geology, or land surveying; or a person that is a Certified Professional in Erosion and Sediment Control (CPESC) with a current certification by Certified Professional in Erosion and Sediment Control Inc.

Director: The Director of the Environmental Protection Division or an authorized representative.

District: The Coosa River Soil and Water Conservation District.

Division: The Environmental Protection Division (EPD) of the Department of Natural Resources.

Drainage Structure: A device composed of a virtually nonerodible material such as concrete, steel, plastic or other such material that conveys water from one place to another by intercepting the flow and carrying it to a release point for storm-water management, drainage control, or flood control purposes.

Erosion: The process by which land surface is worn away by the action of wind, water, ice or gravity.

Erosion and Sedimentation Control Plan: A plan required by the Erosion and Sedimentation Act, O.C.G.A. Chapter 12-7, that includes, as a minimum protections at least as stringent as the State General Permit, best management practices, and requirements in section 7.5-185 (c) of this ordinance.

Fill: A portion of land surface to which soil or other solid material has been added; the depth above the original ground surface or an excavation.

Final Stabilization: All soil disturbing activities at the site have been completed, and that for unpaved areas and areas not covered by permanent structures and areas located outside the waste disposal limits of a landfill cell that has been certified by EPD for waste disposal, 100% of the soil surface is uniformly covered in permanent vegetation with a density of 70% or greater, or equivalent permanent stabilization measures (such as the use of rip rap, gabions, permanent mulches or geo-textiles) have been used. Permanent vegetation shall consist of: planted trees, shrubs, perennial vines; a crop of perennial vegetation appropriate for the time of year and region; or a crop of annual vegetation and a seeding of target crop perennials appropriate for the region. Final stabilization applies to each phase of construction.

Finished Grade: The final elevation and contour of the ground after cutting or filling and conforming to the proposed design.

Grading: Altering the shape of ground surfaces to a predetermined condition; this includes stripping, cutting, filling, stockpiling and shaping or any combination thereof and shall include the land in its cut or filled condition.

Ground Elevation: The original elevation of the ground surface prior to cutting or filling.

Land-Disturbing Activity: Any activity which may result in soil erosion from water or wind and the movement of sediments into state waters or onto lands within the state, including, but not limited to, clearing, dredging, grading, excavating, transporting, and filling of land but not including agricultural practices as described in Section 7.5-183.

Larger Common Plan of Development or Sale: A contiguous area where multiple separate and distinct construction activities are occurring under one plan of development or sale. For the purposes of this paragraph, “plan” means an announcement; piece of documentation such as a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, or computer design; or physical demarcation such as boundary signs, lot stakes, or surveyor markings, indicating that construction activities may occur on a specific plot.

Local Issuing Authority: The City of Cartersville, Georgia, which is certified pursuant to O.C.G.A. §12-7-8.

Metropolitan River Protection Act (MRPA): A state law referenced as O.C.G.A. §12-5-440 et.seq., which addresses environmental and developmental matters in certain metropolitan river corridors and their drainage basins.

Natural Ground Surface: The ground surface in its original state before any grading, excavation or filling.

Nephelometric Turbidity Units (NTU): Numerical units of measure based upon photometric analytical techniques for measuring the light scattered by finely divided particles of a substance in suspension. This technique is used to estimate the extent of turbidity in water in which colloiddally dispersed particles are present.

NOI: A Notice of Intent form provided by EPD for coverage under the State General Permit.

NOT: A Notice of Termination form provided by EPD to terminate coverage under the State General Permit.

Operator: The party or parties that have: (A) operational control of construction project plans and specifications, including the ability to make modifications to those plans and specifications; or (B) day-to-day operational control of those activities that are necessary to ensure compliance with an erosion, sedimentation and pollution control plan for the site or other permit conditions, such as a person authorized to direct workers at a site to carry out activities required by the erosion, sedimentation and pollution control plan or to comply with other permit conditions.

Outfall: The location where storm water in a discernible, confined and discrete conveyance, leaves a facility or site or, if there is a receiving water on site, becomes a point source discharging into that receiving water.

Permit: The authorization necessary to conduct a land-disturbing activity under the provisions of this ordinance.

Person: Any individual, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, state agency, municipality or other political subdivision of this State, any interstate body or any other legal entity.

Phase or Phased: Sub-parts or segments of construction projects where the sub-part or segment is constructed and stabilized prior to completing construction activities on the entire construction site.

Project: The entire proposed development project regardless of the size of the area of land to be disturbed.

Properly Designed: Designed in accordance with the design requirements and specifications contained in the "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the Georgia Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted and amendments to the Manual as approved by the Commission up until the date of NOI submittal.

Roadway Drainage Structure: A device such as a bridge, culvert, or ditch, composed of a virtually nonerrodible material such as concrete, steel, plastic, or other such material that conveys water under a roadway by intercepting the flow on one side of a traveled roadway consisting of one or more defined lanes, with or without shoulder areas, and carrying water to a release point on the other side.

Sediment: Solid material, both organic and inorganic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, ice, or gravity as a product of erosion.

Sedimentation: The process by which eroded material is transported and deposited by the action of water, wind, ice or gravity.

Soil and Water Conservation District Approved Plan: An erosion and sedimentation control plan approved in writing by the Coosa River Soil and Water Conservation District.

Stabilization: The process of establishing an enduring soil cover of vegetation by the installation of temporary or permanent structures for the purpose of reducing to a minimum the erosion process and the resultant transport of sediment by wind, water, ice or gravity.

State General Permit: The National Pollutant Discharge Elimination System (NPDES) general permit or permits for storm-water runoff from construction activities as is now in effect or as may be amended or reissued in the future pursuant to the state's authority to implement the same through federal delegation under the Federal Water Pollution Control Act, as amended, 33 U.S.C. §1251, et.seq., and subsection (f) of Code §12-5-30.

State Waters: Any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs, wells, and other bodies of surface or subsurface water, natural or artificial, lying within or forming a part of the boundaries of Georgia which are not entirely confined and retained completely upon the property of a single individual, partnership, or corporation.

Structural Erosion and Sedimentation Control Practices: Practices for the stabilization of erodible or sediment-producing areas by utilizing the mechanical properties of matter for the purpose of either hanging the surface of the land or storing, regulating or disposing of runoff to prevent excessive sediment loss. Examples of structural erosion and sediment control practices are riprap, sediment basins, dikes, level spreaders, waterways or outlets, diversions, grade stabilization structures, and sediment traps, etc. Such practices can be found in the publication *Manual for Erosion and Sediment Control in Georgia*.

Trout Streams: All streams or portions of streams within the watershed as designated by the Game and Fish Division of the Georgia Department of Natural Resources under the provisions of the Georgia Water Quality Control Act, O.C.G.A. §12-5-20, in the rules and regulations for Water Quality Control, Chapter 391-3-6 at www.gaepd.org. Streams designated as primary trout waters are defined as water supporting a self-sustaining population of rainbow, brown or brook trout. Streams designated as secondary trout waters are those in which there is no evidence of natural trout reproduction, but are capable of supporting trout throughout the year. First order trout waters are streams into which no other streams flow except springs.

Vegetative Erosion and Sedimentation Control Measures: Measures for the stabilization of erodible or sediment producing areas by covering the soil with:

- (1) Permanent seeding, sprigging or planting, producing long-term vegetative cover; or
- (2) Temporary seeding, producing short-term vegetative cover; or
- (3) Sodding, covering areas with a turf of perennial sod-forming grass. Such measures can be found in the publication *Manual for Erosion and Sediment Control in Georgia*.

Watercourse: Any natural or artificial watercourse, stream, river, creek, channel, ditch, canal, conduit, culvert, drain, waterway, gully, ravine, or wash in which water flows either continuously or intermittently and which has a definite channel, bed and banks, and including any area adjacent thereto subject to inundation by reason of overflow or floodwater.

Wetlands: Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

(Ord. No. 11-10, 5-6-10)

Sec. 7.5-183. Exemptions.

This article shall apply to any land-disturbing activity undertaken by any person on any land except for the following:

1. Surface mining, as the same is defined in O.C.G.A. 12-4-72, "The Georgia Surface Mining Act of 1968".
2. Granite quarrying and land clearing for such quarrying;
3. Such minor land-disturbing activities as home gardens and individual home landscaping, repairs, maintenance work, fences, and other related activities, which result in minor soil erosion;
4. The construction of single-family residences, when such construction disturbs less than one (1) acre and is not a part of a larger common plan of development or sale with a planned disturbance of equal to or greater than one (1) acre and not otherwise exempted under this paragraph; provided, however, that construction of any such residence shall conform to the minimum requirements as set forth in O.C.G.A. 12-7-6 and this paragraph. For single-family residence construction covered by the provisions of this paragraph, there shall be a buffer zone between the residence and any state waters classified as trout streams pursuant to Article 2 of Chapter 5 of the Georgia Water Quality Control Act. In any such buffer zone, no land-disturbing activity shall be constructed between the residence and the point where vegetation has been wrested by normal stream flow or wave action from the banks of the trout waters. For primary trout waters, the buffer zone shall be at least 50 horizontal feet, and no variance to a smaller buffer shall be granted. For secondary trout waters, the buffer zone shall be at least 50 horizontal feet, but the Director may grant variances to no less than 25 feet. Regardless of whether a trout stream is primary or secondary, for first order trout waters, which are streams into which no other streams flow except for springs, the buffer shall be at least 25 horizontal feet, and no variance to a smaller buffer shall be granted. The minimum requirements of subsection (b) of O.C.G.A. 12-7-6 and the buffer zones provided by this paragraph shall be enforced by the Local Issuing Authority;
5. Agricultural operations as defined in O.C.G.A. §1-3-3, "definitions", to include raising, harvesting or storing of products of the field or orchard; feeding, breeding or managing livestock or poultry; producing or storing feed for use in the production of livestock, including but not limited to cattle, calves, swine, hogs, goats, sheep, and rabbits or for use in the production of poultry, including but not limited to chickens, hens and turkeys; producing plants, trees, fowl, or animals; the production of aqua culture, horticultural, dairy, livestock, poultry, eggs and apiarian products; farm buildings and farm ponds;
6. Forestry land management practices, including harvesting; provided, however, that when such exempt forestry practices cause or result in land-disturbing or other activities otherwise prohibited in a buffer, as established in Section 7.5-184(c.) (15) and (16) of this article, no other land-disturbing activities, except for normal forest management practices, shall be allowed on the entire property upon which the forestry practices were conducted for a period of three (3) years after completion of such forestry practices;
7. Any project carried out under the technical supervision of the Natural Resources Conservation Service of the United States Department of Agriculture;
8. Any project involving less than one acre of disturbed area; provided, however, that this exemption shall not apply to any land-disturbing activity within a larger common plan of development or sale with a planned disturbance of equal to or greater than one acre or within 200 feet of the bank of any state waters, and for purposes of this paragraph, "State Waters" excludes channels and drainageways which have water in them only during and immediately after rainfall events and intermittent streams which do not have water in them year- round; provided, however, that any person responsible for a project which involves less than one acre, which involves land-disturbing activity, and which is within 200 feet of any such excluded channel or drainage way, must prevent sediment from moving beyond the boundaries of the property on which such project is located and provided, further, that nothing contained herein shall

prevent the Local Issuing Authority from regulating any such project which is not specifically exempted by Section 7.5-183 of this article;

9. Construction or maintenance projects, or both, undertaken or financed in whole or in part, or both, by the Department of Transportation, the Georgia Highway Authority, or the State Tollway Authority; or any road construction or maintenance project, or both, undertaken by any county or municipality; provided, however, that construction or maintenance projects of Department of Transportation or State Tollway Authority which disturb one or more contiguous acres of land shall be subject to provisions of Code Section §12-7-7.1; except where the Department of Transportation, the Georgia Highway Authority, or the State Road and Tollway Authority is a secondary permittee for a project located within a larger common plan of development or sale under the state general permit, in which a copy of a notice of intent under the state general permit shall be submitted to the Local Issuing Authority, the Local Issuing Authority shall enforce compliance with the minimum requirements set forth in O.C.G.A. §12-7-6 as if a permit had been issued, and violations shall be subject to the same penalties as violations by permit holders;
10. Any land-disturbing activities conducted by any electric membership corporation or municipal electrical system or any public utility under the regulatory jurisdiction of the Public Service Commission, any utility under the regulatory jurisdiction of the Federal Energy Regulatory Commission, any cable television system as defined in O.C.G.A. §36-18-1, or any agency or instrumentality of the United States engaged in the generation, transmission, or distribution of power; except where an electric membership corporation or municipal electrical system or any public utility under the regulatory jurisdiction of the Public Service Commission, any utility under the regulatory jurisdiction of the Federal Energy Regulatory Commission, any cable television system as defined in O.C.G.A. §36-18-1, or any agency or instrumentality of the United States engaged in the generation, transmission, or distribution of power is a secondary permittee for a project located within a larger common plan of development or sale under the state general permit, in which case the Local Issuing Authority shall enforce compliance with the minimum requirements set forth in O.C.G.A. §12-7-6 as if a permit had been issued, and violations shall be subject to the same penalties as violations by permit holders; and

11. Any public water system reservoir.

(Ord. No. 11-10, 5-6-10)

Sec. 7.5-184. Minimum requirements for erosion and sedimentation control using best management.

(a.) General Provisions. Excessive soil erosion and resulting sedimentation can take place during land-disturbing activities if requirements of the ordinance and the NPDES General Permit are not met. Therefore, plans for those land-disturbing activities which are not exempted by this ordinance shall contain provisions for application of soil erosion, sedimentation and pollution control measures and practices. The provisions shall be incorporated into the erosion, sedimentation and pollution control plans. Soil erosion, sedimentation and pollution control measures and practices shall conform to the minimum requirements of Section 7.5-184 (b.) & (c.) of this ordinance. The application of measures and practices shall apply to all features of the site, including street and utility installations, drainage facilities and other temporary and permanent improvements. Measures shall be installed to prevent or control erosion, sedimentation and pollution during all stages of any land-disturbing activity in accordance with requirements of this ordinance and the NPDES General Permit.

(b.) BMP's

(1.) Best management practices, as set forth in Section 7.5-184 of this article shall be required for all land-disturbing activities. Proper design, installation, and maintenance of best management practices shall constitute a complete defense to any action by the Director or to any other allegation of noncompliance with paragraph (2) of this subsection or any substantially similar terms contained in a permit for the discharge of stormwater issued pursuant to subsection (f) of O.C.G.A. §12-5-30, the "Georgia Water

Quality Control Act". As used in this subsection the terms "proper design" and "properly designed" mean designed in accordance with the hydraulic design specifications contained in the "Manual for Erosion and Sediment Control in Georgia" specified in O.C.G.A. §12-7-6 subsection (b).

(2.) A discharge of stormwater runoff from disturbed areas where best management practices have not been properly designed, installed, and maintained shall constitute a separate violation of any land-disturbing permit issued by a Local Issuing Authority or of any state general permit issued by the Division pursuant to subsection (f) of O.C.G.A. §12-5-30, the "Georgia Water Quality Control Act", for each day on which such discharge results in the turbidity of receiving waters being increased by more than twenty-five (25) nephelometric turbidity units for waters supporting warm water fisheries or by more than ten (10) nephelometric turbidity units for waters classified as trout waters. The turbidity of the receiving waters shall be measured in accordance with guidelines to be issued by the Director. This paragraph shall not apply to any land disturbance associated with the construction of single-family homes, which are not part of a larger common plan of development or sale unless the planned disturbance for such construction is equal to or greater than five (5) acres.

(3.) Failure to properly design, install, or maintain best management practices shall constitute a violation of any land-disturbing permit issued by a Local Issuing Authority or any state general permit issued by the Division pursuant to subsection (f) of Code Section §12-5-30, the "Georgia Water Quality Control Act", for each day on which such failure occurs.

(4.) The Director may require, in accordance with regulations adopted by the Board, reasonable and prudent monitoring of the turbidity level of receiving waters into which discharges from land disturbing activities occur.

(5.) The LIA may set more stringent buffer requirements than stated in section 7.5-184 (c). 15. and 16., in light of O.C.G.A. § 12-7-6 (c).

(c.) The rules and regulations, ordinances, or resolutions adopted pursuant to this chapter for the purpose of governing land-disturbing activities shall require, as a minimum, protections at least as stringent as the state general permit; and best management practices, including sound conservation and engineering practices to prevent and minimize erosion and resultant sedimentation, which are consistent with, and no less stringent than, those practices contained in the *Manual for Erosion and Sediment Control in Georgia* published by the Georgia Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted, as well as the following:

- (1) Stripping of vegetation, re-grading and other development activities shall be conducted in a manner so as to minimize erosion;
- (2) Cut-fill operations must be kept to a minimum;
- (3) Development plans must conform to topography and soil type so as to create the lowest practical erosion potential;
- (4) Whenever feasible, natural vegetation shall be retained, protected and supplemented;
- (5) The disturbed area and the duration of exposure to erosive elements shall be kept to a practicable minimum;
- (6) Disturbed soil shall be stabilized as quickly as practicable;
- (7) Temporary vegetation or mulching shall be employed to protect exposed critical areas during development;

- (8) Permanent vegetation and structural erosion control practices shall be installed as soon as practicable;
- (9) To the extent necessary, sediment in run-off water must be trapped by the use of debris basins, sediment basins, silt traps, or similar measures until the disturbed area is stabilized. As used in this paragraph, a disturbed area is stabilized when it is brought to a condition of continuous compliance with the requirements of O.C.G.A. §12-7-1 et.seq.;
- (10) Adequate provisions must be provided to minimize damage from surface water to the cut face of excavations or the sloping of fills;
- (11) Cuts and fills may not endanger adjoining property;
- (12) Fills may not encroach upon natural watercourses or constructed channels in a manner so as to adversely affect other property owners;
- (13) Grading equipment must cross flowing streams by means of bridges or culverts except when such methods are not feasible, provided, in any case, that such crossings are kept to a minimum;
- (14) Land-disturbing activity plans for erosion and sedimentation control shall include provisions for treatment or control of any source of sediments and adequate sedimentation control facilities to retain sediments on-site or preclude sedimentation of adjacent waters beyond the levels specified in Section 7.5-184(b.) (2.) of this article;
- (15) Except as provided in paragraph (16) of this subsection, there is established a 25 foot buffer along the banks of all state waters, as measured horizontally from the point where vegetation has been wrested by normal stream flow or wave action, except where the Director determines to allow a variance that is at least as protective of natural resources and the environment, where otherwise allowed by the Director pursuant to O.C.G.A. §12-2-8, or where a drainage structure or a roadway drainage structure must be constructed, provided that adequate erosion control measures are incorporated in the project plans and specifications, and are implemented; provided, however, the buffers of at least 25 feet established pursuant to part 6 of Article 5, Chapter 5 of Title 12, the "Georgia Water Quality Control Act", shall remain in force unless a variance is granted by the Director as provided in this paragraph. The following requirements shall apply to any such buffer:
 - a. No land-disturbing activities shall be conducted within a buffer and a buffer shall remain in its natural, undisturbed state of vegetation until all land-disturbing activities on the construction site are completed. Once the final stabilization of the site is achieved, a buffer may be thinned or trimmed of vegetation as long as a protective vegetative cover remains to protect water quality and aquatic habitat and a natural canopy is left in sufficient quantity to keep shade on the stream bed; provided, however, that any person constructing a single-family residence, when such residence is constructed by or under contract with the owner for his or her own occupancy, may thin or trim vegetation in a buffer at any time as long as protective vegetative cover remains to protect water quality and aquatic habitat and a natural canopy is left in sufficient quantity to keep shade on the stream bed; and
 - b. The buffer shall not apply to the following land-disturbance activities, provided that they occur at an angle, as measured from the point of crossing, within 25 degrees of perpendicular to the stream; cause a width of disturbance of not more than 50 feet within the buffer; and adequate erosion control measures are incorporated into the project plans and specifications and are implemented: (i) Stream crossings for water lines; or (ii) Stream crossings for sewer lines; and

(16) There is established a 50 foot buffer as measured horizontally from the point where vegetation has been wrested by normal stream flow or wave action, along the banks of any state waters classified as "trout streams" pursuant to Article 2 of Chapter 5 of Title 12, the "Georgia Water Quality Control Act", except where a roadway drainage structure must be constructed; provided, however, that small springs and streams classified as trout streams which discharge an average annual flow of 25 gallons per minute or less shall have a 25 foot buffer or they may be piped, at the discretion of the landowner, pursuant to the terms of a rule providing for a general variance promulgated by the Board, so long as any such pipe stops short of the downstream landowner's property and the landowner complies with the buffer requirement for any adjacent trout streams. The Director may grant a variance from such buffer to allow land-disturbing activity, provided that adequate erosion control measures are incorporated in the project plans and specifications and are implemented. The following requirements shall apply to such buffer:

- a. No land-disturbing activities shall be conducted within a buffer and a buffer shall remain in its natural, undisturbed, state of vegetation until all land-disturbing activities on the construction site are completed. Once the final stabilization of the site is achieved, a buffer may be thinned or trimmed of vegetation as long as a protective vegetative cover remains to protect water quality and aquatic habitat and a natural canopy is left in sufficient quantity to keep shade on the stream bed: provided, however, that any person constructing a single-family residence, when such residence is constructed by or under contract with the owner for his or her own occupancy, may thin or trim vegetation in a buffer at any time as long as protective vegetative cover remains to protect water quality and aquatic habitat and a natural canopy is left in sufficient quantity to keep shade on the stream bed; and
- b. The buffer shall not apply to the following land disturbing activities, provided that they occur at an angle, as measured from the point of crossing, within 25 degrees of perpendicular to the stream; cause a width disturbance of not more than 50 feet within the buffer; and adequate erosion control measures are incorporated into the project plans and specifications and are implemented: (i) Stream crossings for water lines; (ii) Stream crossings for sewer lines.

(d) Nothing contained in this chapter shall prevent a Local Issuing Authority from adopting rules and regulations, ordinances, or resolutions, which contain requirements that exceed the minimum requirements in Section 7.5-184(b.)(2) and (3) of this article.

(e) The fact that land-disturbing activity for which a permit has been issued results in injury to the property of another shall neither constitute proof of nor create a presumption of a violation of the standards provided for in this ordinance or the terms of the permit.
(Ord. No. 11-10, 5-6-10)

Sec. 7.5-185. Application/permit process.

(a.) General: The property owner, developer and designated planners and engineers shall design and review before submittal the general development plans. The Local Issuing Authority shall review the tract to be developed and the area surrounding it. They shall consult the zoning ordinance, storm water management ordinance, subdivision ordinance, flood damage prevention ordinance, this ordinance, and any other ordinances, rules, regulations or permits, which regulate the development of land within the jurisdictional boundaries of the Local Issuing Authority. However, the owner and/or operator are the only parties who may obtain a permit.

(b.) Application Requirements:

- (1) No person shall conduct any land- disturbing activity within the jurisdictional boundaries of the City of Cartersville without first obtaining a permit from the City of Cartersville Planning and Development Department to perform such activity and providing a copy of Notice of Intent submitted to EPD if applicable.

- (2) The application for a permit shall be submitted to the City of Cartersville Planning and Development Department and must include the applicant's erosion and sedimentation control plan with supporting data, as necessary. Said plans shall include, as a minimum, the data specified in Section 7.5-184(c.) of this ordinance. Erosion, sedimentation and pollution control plans, together with supporting data, must demonstrate affirmatively that the land disturbing activity proposed will be carried out in such a manner that the provisions of Section 7.5-184(c.) of this ordinance will be met. Applications for a permit will not be accepted unless accompanied by two (2) copies of the applicant's erosion, sedimentation and pollution control plans. All applications shall contain a certification stating that the plan preparer or the designee thereof visited the site prior to creation of the plan in accordance with EPD Rule 391-3-7-.10. The plan preparer must also agree to visit the site under construction at least once per month and submit an inspection report suitable in format to the Local Issuing Authority.
- (3.) The following fees shall be assessed:
 - a. Initial Application Fee: \$500.00;
 - b. Re-Application Fee: \$50.00 each occurrence;
 - c. Land Disturbance Permit: \$250.00
 - d. Plus the following additional fee:
 - a) For residential development-\$15.00 per lot in the project area;
 - b) For commercial development - \$25.00 per acre or fraction thereof in the project area;
 - c) For industrial development - \$50.00 per acre or fraction thereof in the project area;
 - d) All other development - \$20.0 per acre or fraction thereof in the project area.
 - e) In addition to the local permitting fees, fees will also be assessed pursuant to paragraph (5) subsection (a) of O.C.G.A. §12-5-23, provided that such fees shall not exceed \$80.00 per acre of land-disturbing activity, and these fees shall be calculated and paid by the primary permittee as defined in the state general permit for each acre of land-disturbing activity included in the planned development or each phase of development. All applicable fees shall be paid prior to issuance of the land disturbance permit. In a jurisdiction that is certified pursuant to subsection (a) of O.C.G.A. §12-7-8 half of such fees levied shall be submitted to the division; except that any and all fees due from an entity which is required to give notice pursuant to paragraph (9) or (10) of O.C.G.A. §12-7-17 shall be submitted in full to the Division; regardless of the existence of a Local Issuing Authority in the jurisdiction.
- (4.) Immediately upon receipt of an application and plan for a permit, the Local Issuing Authority shall refer the application and plan to the District for its review and approval or disapproval concerning the adequacy of the erosion and sedimentation control plan. A District shall approve or disapprove a plan within 35 days of receipt. Failure of a District to act within 35 days shall be considered an approval of the pending plan. The results of the District review shall be forwarded to the Local Issuing Authority. No permit will be issued unless the plan has been approved by the District, and any variances required by Section 7.5-184(c.) (15) and (16) and bonding, if required as per Section 7.5-185(b)(6) have been obtained. Such review will not be required if the Local Issuing Authority and the District have entered into an agreement which allows the Local Issuing Authority to conduct such review and approval of the plan without referring the application and plan to the District. The Local Issuing Authority with plan review authority shall approve or disapprove a revised Plan submittal within 35 days of receipt. Failure of the Local Issuing Authority with plan review authority to act within 35 days shall be considered an approval of the revised Plan submittal.
- (5) If a permit applicant has had two or more violations of previous permits, this ordinance section, or the Erosion and Sedimentation Act, as amended, within three years prior to the date of filing of the application under consideration, the Local Issuing Authority may deny the permit application.

- (6) The Local Issuing Authority shall require the permit applicant to post a bond in the form of government security, cash, irrevocable letter of credit, or any combination thereof up to, but not exceeding, \$3,000.00 per acre or fraction thereof of the proposed land-disturbing activity, prior to issuing the permit. If the applicant does not comply with this ordinance or with the conditions of the permit after issuance, the Local Issuing Authority may call the bond or any part thereof to be forfeited and may use the proceeds to hire a contractor to stabilize the site of the land-disturbing activity and bring it into compliance. These provisions shall not apply unless there is in effect an ordinance or statute specifically providing for hearing and judicial review of any determination or order of the Local Issuing Authority with respect to alleged permit violations.
- (7) A mandatory pre-construction meeting shall be required prior to the issuance of Land Disturbance Permits on projects subject to the rules and regulations of this ordinance. Points of discussion in the pre-construction meeting will include but are not limited to the following:
 1. NOI on file.
 2. Proof of NOI fee payment on file.
 3. Design Professional 7-day inspection letter.
 4. State Waters, buffers and floodplains on site.
 5. Erosion and Sediment Control Performance Bond.
 6. Inspection Procedures.
 7. Fourteen (14)-day waiting period on NOI.

(c) Plan Requirements:

- (1) Plans must be prepared to meet the minimum requirements as contained in Section 7.5-184 (b.) and (c.) of this ordinance, or through the use of more stringent, alternate design criteria which conform to sound conservation and engineering practices. The *Manual for Erosion and Sediment Control in Georgia* is hereby incorporated by reference into this ordinance. The plan for the land-disturbing activity shall consider the interrelationship of the soil types, geological and hydrological characteristics, topography, watershed, vegetation, proposed permanent structures including roadways, constructed waterways, sediment control and storm water management facilities, local ordinances and State laws. Maps, drawings and supportive computations shall bear the signature and seal of the certified design professional. Persons involved in land development design, review, permitting, construction, monitoring, or inspections or any land disturbing activity shall meet the education and training certification requirements, dependent on his or her level of involvement with the process, as developed by the Commission and in consultation with the Division and the Stakeholder Advisory Board created pursuant to O.C.G.A. 12-7-20.
- (2) Data Required for Site Plan shall include all the information required from the appropriate Erosion, Sedimentation and Pollution Control Plan Review Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted.

(d) Permits

- (1) Permits shall be issued or denied as soon as practicable but in any event not later than forty-five (45) days after receipt by the Local Issuing Authority of a completed application, providing variances and bonding are obtained, where necessary.
- (2) No permit shall be issued by the Local Issuing Authority unless the erosion and sedimentation control plan has been approved by the District and the Local Issuing Authority has affirmatively determined that the plan is in compliance with this ordinance, any variances required by Section 7.5-184 (c.) (15) and (16) are obtained, bonding requirements, if necessary, as per Section 7.5-185 (b.) (6) are met and all ordinances and rules and regulations in effect within the jurisdictional boundaries of the Local Issuing Authority are met. If the permit is denied, the reason for denial shall be furnished to the applicant.

- (3) Any land-disturbing activities by a local issuing authority shall be subject to the same requirements of this ordinance, and any other ordinances relating to land development, as are applied to private persons and the division shall enforce such requirements upon the local issuing authority.
- (4) If the tract is to be developed in phases, then a separate permit shall be required for each phase.
- (5) The permit may be suspended, revoked, or modified by the Local Issuing Authority, as to all or any portion of the land affected by the plan, upon finding that the holder or his successor in the title is not in compliance with the approved erosion and sedimentation control plan or that the holder or his successor in title is in violation of this ordinance. A holder of a permit shall notify any successor in title to him as to all or any portion of the land affected by the approved plan of the conditions contained in the permit.
- (6) The LIA may reject a permit application if the applicant has had two or more violations of previous permits or the Erosion and Sedimentation Act permit requirements within three years prior to the date of the application, in light of O.C.G.A. 12-7-7 (f) (1).

(Ord. No. 11-10, 5-6-10)

Sec. 7.5-186. Inspection and enforcement.

- A. The City of Cartersville Public Works Director, Chief Building Official, or their designee will periodically inspect the sites of land-disturbing activities for which permits have been issued to determine if the activities are being conducted in accordance with the plan and if the measures required in the plan are effective in controlling erosion and sedimentation. Also the Local Issuing Authority shall regulate both primary and secondary permittees as such terms are defined in the state general permit. Primary permittees shall be responsible of installation and maintenance of best management practices where the primary permittee is conducting land-disturbing activities. Secondary permittees shall be responsible for installation and maintenance of best management practices where the secondary permittee is conducting land-disturbing activities. If, through inspection, it is deemed that a person engaged in land - disturbing activities as defined herein has failed to comply with the approved plan, with permit conditions, or with the provisions of this ordinance, a written notice to comply shall be served upon that person. The notice shall set forth the measures necessary to achieve compliance and shall state the time within which such measures must be completed. If the person engaged in the land-disturbing activity fails to comply within the time specified, he shall be deemed in violation of this ordinance.
- B. The Local Issuing Authority must amend its ordinances to the extent appropriate within twelve (12) months of any amendments to the Erosion and Sedimentation Act of 1975.
- C. The City of Cartersville Public Works Director, Chief Building Official, or their designee shall have the power to conduct such investigations as it may reasonably deem necessary to carry out duties as prescribed in this ordinance, and for this purpose to enter at reasonable times upon any property, public or private, for the purpose of investigation and inspecting the sites of land-disturbing activities.
- D. No person shall refuse entry or access to any authorized representative or agent of the Issuing Authority, the Commission, the District, or Division who requests entry for the purposes of inspection, and who presents appropriate credentials, nor shall any person obstruct, hamper or interfere with any such representative while in the process of carrying out his official duties.

- E. The Districts or the Commission or both shall periodically review the actions of counties and municipalities that have been certified as Local Issuing Authorities pursuant to O.C.G.A. §12-7-8 (a). The Districts or the Commission or both may provide technical assistance to any county or municipality for the purpose of improving the effectiveness of the county's or municipality's erosion and sedimentation control program. The Districts or the Commission shall notify the Division and request investigation by the Division if any deficient or ineffective local program is found.

- F. The Division may periodically review the actions of counties and municipalities which have been certified as Local Issuing Authorities pursuant to Code Section 12-7-8 (a). Such review may include, but shall not be limited to, review of the administration and enforcement of a governing authority's ordinance and review of conformance with an agreement, if any, between the district and the governing authority. If such review indicates that the governing authority of any county or municipality certified pursuant to O.C.G.A. 12-7-8 (a) has not administered or enforced its ordinances or has not conducted the program in accordance with any agreement entered into pursuant to O.C.G.A. 12-7-7 (e), the Division shall notify the governing authority of the county or municipality in writing. The governing authority of any county or municipality so notified shall have 90 days within which to take the necessary corrective action to retain certification as a Local Issuing Authority. If the county or municipality does not take necessary corrective action within 90 days after notification by the division, the division shall revoke the certification of the county or municipality as a Local Issuing Authority.

- G. From time to time City-owned or City-County joint projects are permitted within the confines of this ordinance. During the construction phases of these type projects, the City will solicit assistance from the Division to provide a minimum of two construction site overviews on these projects to insure that proper inspection and enforcement protocols are being carried out by the City. Proper record keeping concerning these site overviews will be the responsibility of the City of Cartersville as Local Issuing Authority.

(Ord. No. 11-10, 5-6-10)

Sec. 7.5-187. Penalties and incentives.

A. *FAILURE TO OBTAIN A PERMIT FOR LAND-DISTURBING ACTIVITIES:*

If any person commences any land-disturbing activity requiring a land-disturbing permit as prescribed in this ordinance without first obtaining said permit, the person shall be subject to revocation of his business license, work permit or other authorization for the conduct of a business and associated work activities within the jurisdictional boundaries of the Issuing Authority.

B. *STOP-WORK ORDERS:*

a. For the first and second violations of the provisions of this ordinance, the Director or the Local Issuing Authority shall issue a written warning to the violator. The violator shall have five days to correct the violation. If the violation is not corrected within five days, the Director or the Local Issuing Authority shall issue a stop-work order requiring that land-disturbing activities be stopped until necessary corrective action or mitigation has occurred; provided, however, that, if the violation presents an imminent threat to public health or waters of the state or if the land-disturbing activities are conducted without obtaining the necessary permit, the Director or Local Issuing Authority shall issue an immediate stop-work order in lieu of a warning;

b. For a third and each subsequent violation, the Director or the Local Issuing Authority shall issue an immediate stop-work order; and;

c. All stop-work orders shall be effective immediately upon issuance and shall be in effect until the necessary corrective action or mitigation has occurred.

d. When a violation in the form of taking action without a permit, failure to maintain a stream buffer, or significant amounts of sediment, as determined by the Local Issuing Authority or by the director or his or her designee, have been or are being discharged into state waters and where best management practices have not been properly designed, installed, and maintained, a stop work order shall be issued by the Local Issuing Authority or by the director or his or her designee. All such stop work orders shall be effective immediately upon issuance and shall be in effect until the necessary corrective action or mitigation has occurred. Such stop work orders shall apply to all land-disturbing activity on the site with the exception of the installation and maintenance of temporary or permanent erosion and sediment controls.

C. *BOND FORFEITURE:*

If, through inspection, it is determined that a person engaged in land-disturbing activities has failed to comply with the approved plan, a written notice to comply shall be served upon that person. The notice shall set forth the measures necessary to achieve compliance with the plan and shall state the time within which such measures must be completed. If the person engaged in the land-disturbing activity fails to comply within the time specified, he shall be deemed in violation of this ordinance and, in addition to other penalties, shall be deemed to have forfeited his performance bond (in the form of government security, cash or an irrevocable letter of credit), if required to post one under the provisions of Section 7.5-185 (b.) (6.) The Issuing Authority may call the bond or any part thereof to be forfeited and may use the proceeds to hire a contractor to stabilize the site of the land-disturbing activity and bring it into compliance.

D. *MONETARY PENALTIES:*

a. Any person who violates any provisions of this ordinance, or any permit condition or limitation established pursuant to this ordinance or who negligently or intentionally fails or refuses to comply with any final or emergency order of the Director issued as provided in this ordinance shall be liable for a civil penalty not to exceed \$2,500.00 per day. For the purpose of enforcing the provisions of this ordinance, notwithstanding any provisions in any City charter to the contrary, municipal courts shall be authorized to impose penalty not to exceed \$2,500.00 for each violation. Notwithstanding any limitation of law as to penalties which can be assessed for violations or any other court of competent jurisdiction trying cases brought as violations of this ordinance under city ordinances approved under this ordinance shall be authorized to impose penalties for such violations not to exceed \$2,500.00 for each violation. Each day during which violation or failure or refusal to comply continues shall be a separate violation.

b. Any person who violates any provision of this ordinance, the rules and regulations adopted or who negligently or intentionally fails to comply with any final or emergency order issued as provided in the ordinance, may be held liable for a sentence of imprisonment not to exceed 60 days in jail or monetary penalty of \$2,500 per day or both.

(Ord. No. 11-10, 5-6-10)

Sec. 7.5-188. Education and certification.

A. Persons involved in land development design, review, permitting, construction, monitoring, or inspection or any land-disturbing activity shall meet the education and training certification requirements, dependent on their level of involvement with the process, as developed by the commission in consultation with the division and the stakeholder advisory board created pursuant to O.C.G.A. 12-7-20.

- B. For each site on which land-disturbing activity occurs, each entity or person acting as either a primary, secondary, or tertiary permittee, as defined in the state general permit, shall have as a minimum one person who is in responsible charge of erosion and sedimentation control activities on behalf of said entity or person and meets the applicable education or training certification requirements developed by the Commission present on site whenever land-disturbing activities are conducted on that site. A project site shall herein be defined as any land-disturbance site or multiple sites within a larger common plan of development or sale permitted by an owner or operator for compliance with the state general permit.
- C. Persons or entities involved in projects not requiring a state general permit but otherwise requiring certified personnel on site may contract with certified persons to meet the requirements of this ordinance.
- D. If a state general permittee who has operational control of land-disturbing activities for a site has met the certification requirements of paragraph (1) of subsection (b) of O.C.G.A. 12-7-19, then any person or entity involved in land-disturbing activity at that site and operating in a subcontractor capacity for such permittee shall meet those educational requirements specified in paragraph (4) of subsection (b) of O.C.G.A. 12-7-19 and shall not be required to meet any educational requirements that exceed those specified in said paragraph.

(Ord. No. 11-10, 5-6-10)

Sec. 7.5-189. Administrative appeal judicial review.

- (a) Administrative Remedies: The suspension, revocation, modification or grant with condition of a permit by the Issuing Authority upon finding that the holder is not in compliance with the approved erosion and sediment control plan; or that the holder is in violation of permit conditions; or that the holder is in violation of any ordinance; shall entitle the person submitting the plan or holding the permit to a hearing before the Mayor and City Council within thirty (30) days after receipt by the Issuing Authority of written notice of appeal.
- (b) Judicial Review: Any person, aggrieved by a decision or order of the Issuing Authority, after exhausting his administrative remedies, shall have the right to appeal denovo to the Superior Court of Bartow County, Georgia.

(Ord. No. 11-10, 5-6-10)

Sec. 7.5-190. Affectivity, validity and liability.

- (a.) Effectivity: This ordinance shall become effective on the *6th day of May 2010*.
- (b.) Validity: If any section, paragraph, clause, phrase, or provision of this ordinance shall be adjudged invalid or held unconstitutional, such decisions shall not effect the remaining portions of this ordinance.
- (c.) Liability:
 - (1) Neither the approval of a plan under the provisions of this ordinance, nor the compliance with provisions of this ordinance shall relieve any person from the responsibility for damage to any person or property otherwise imposed by law nor impose any liability upon the Issuing Authority or District for damage to any person or property.

(2) The fact that a land-disturbing activity for which a permit has been issued results in injury to the property of another shall neither constitute proof of nor create a presumption of a violation of the standards provided for in this ordinance or the terms of the permit.

(3) No provision of this ordinance shall permit any persons to violate the Georgia Erosion and Sedimentation Act of 1975, the Georgia Water Quality Control Act or the rules and regulations promulgated and approved there under or pollute any Waters of the State as defined thereby.

(Ord. No. 11-10, 5-6-10)

Secs. 7.5-191--7.5-200. Reserved.

ARTICLE VIII. STREAM BUFFER PROTECTION

Sec. 7.5-201. Title.

This article shall be known as the "City of Cartersville Stream Buffer Protection Ordinance."
(Ord. No. 52-06, 8-3-06)

Sec. 7.5-202. Findings and purposes.

(a) *Findings.* Whereas, the City of Cartersville finds that buffers adjacent to streams provide numerous benefits including:

- (1) Protecting, restoring and maintaining the chemical, physical and biological integrity of streams and their water resources.
- (2) Removing pollutants delivered in urban stormwater.
- (3) Reducing erosion and controlling sedimentation.
- (4) Protecting and stabilizing stream banks.
- (5) Providing for infiltration of stormwater runoff.
- (6) Maintaining base flow of streams.
- (7) Contributing organic matter that is a source of food and energy for the aquatic ecosystem.
- (8) Providing tree canopy to shade streams and promote desirable aquatic habitat.
- (9) Providing riparian wildlife habitat.
- (10) Furnishing scenic value and recreational opportunity.
- (11) Providing opportunities for the protection and restoration of greenspace.

(b) *Purposes.* It is the purpose of this article is to protect the public health, safety, environment and general welfare; to minimize public and private losses due to erosion, siltation and water pollution; and to maintain stream water quality by provisions designed to:

- (1) Create buffer zones along the streams of City of Cartersville for the protection of water resources; and
- (2) Minimize land development within such buffers by establishing buffer zone requirements and by requiring authorization for any such activities.

(Ord. No. 52-06, 8-3-06)

Sec. 7.5-203. Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Buffer means, with respect to a stream, a natural or enhanced vegetated area (established by section 7.5-205(a)(1)), lying adjacent to the stream.

City means the City of Cartersville, Georgia a municipal corporation of the State of Georgia.

Designated official means the chief building official, the city engineer, or their designee.

Floodplain means any land area susceptible to flooding, which would have at least a one percent probability of flooding occurrence in any calendar year based on the basin being fully developed as shown on the current land use plan; i.e., the regulatory flood.

Impervious cover means any manmade paved, hardened or structural surface regardless of material. Impervious cover includes but is not limited to rooftops, buildings, streets, roads, decks, swimming pools and any concrete or asphalt.

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

Land development activity means those actions or activities which comprise, facilitate or result in land development.

Land disturbance means any land or vegetation change, including, but not limited to, clearing, grubbing, stripping, removal of vegetation, dredging, grading, excavating, transporting and filling of land, that do not involve construction, paving or any other installation of impervious cover.

Land disturbance activity means those actions or activities which comprise, facilitate or result in land disturbance.

Parcel means any plot, lot or acreage shown as a unit on the latest county tax assessment records.

Permit means the permit issued by the City of Cartersville required for undertaking any land development activity.

Person means 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.

Protection area, or stream protection area means, with respect to a stream, the combined areas of all required buffers and setbacks applicable to such stream.

Riparian means belonging or related to the bank of a river, stream, lake, pond or impoundment.

Setback means, with respect to a stream, the area established by section 7.5-205(a)(2) extending beyond any buffer applicable to the stream.

Stream means any stream, beginning at:

- (1) The location of a spring, seep, or groundwater outflow that sustains streamflow; or
- (2) A point in the stream channel with a drainage area of twenty-five (25) acres or more; or
- (3) Where evidence indicates the presence of a stream in a drainage area of other than twenty-five (25) acres, the City of Cartersville may require field studies to verify the existence of a stream.

Stream bank means the sloping land that contains the stream channel and the normal flows of the stream.

Stream channel means the portion of a watercourse that contains the base flow of the stream.

Watershed means the land area that drains into a particular stream.

(Ord. No. 52-06, 8-3-06)

Sec. 7.5-204. Applicability.

This article shall apply to all land development activity on property containing a stream protection area as defined in section 7.5-203 of this article. These requirements are in addition to, and do not replace or supersede, any other applicable buffer requirements established under state law and approval or exemption from these requirements do not constitute approval or exemption from buffer requirements established under state law or from other applicable local, state or federal regulations.

(1) *Provisions relating to pre-existing activities, permits or developments.* This article shall not apply to the following activities:

- a. Work consisting of the repair or maintenance of any lawful use of land that is zoned and approved for such use on or before the effective date of this article.
- b. Existing development and on-going land disturbance activities including but not limited to existing agriculture, silviculture, landscaping, gardening and lawn maintenance, except that new development or land disturbance activities on such properties will be subject to all applicable buffer requirements.
- c. Any land development activity that is under construction, fully approved for development, scheduled for permit approval or has been submitted for approval as of the effective date of this article.
- d. Land development activity that has not been submitted for approval, but that is part of a larger master development plan, such as for an office park or other phased development that has been previously approved within two (2) years of the effective date of this article.

(2) *Exemptions.* The following specific activities are exempt from this article. Exemption of these activities does not constitute an exemption for any other activity proposed on a property.

- a. Activities for the purpose of building one of the following:
 - A stream crossing by a driveway, transportation route or utility line;
 - Public water supply intake or public wastewater outfall structures;
 - Intrusions necessary to provide access to a property;
 - Public access facilities that must be on the water including boat ramps, docks, foot trails leading directly to the river, fishing platforms and overlooks;
 - Unpaved foot trails and paths;
 - Activities to restore and enhance stream bank stability, vegetation, water quality and/or aquatic habitat, so long as native vegetation and bioengineering techniques are used.

- b. Public sewer line easements paralleling the creek, except that all easements (permanent and construction) and land disturbance should be at least twenty-five (25) feet from the top of the bank. This includes such impervious cover as is necessary for the operation and maintenance of the utility, including but not limited to manholes, vents and valve structures. This exemption shall not be construed as allowing the construction of roads, bike paths or other transportation routes in such easements, regardless of paving material, except for access for the uses specifically cited in section 7.5-204(2)a. above.
- c. Land development activities within a right-of-way existing at the time this article takes effect or approved under the terms of this article.
- d. Within an easement of any utility existing at the time this article takes effect or approved under the terms of this article, land disturbance activities and such impervious cover as is necessary for the operation and maintenance of the utility, including but not limited to manholes, vents and valve structures.
- e. Emergency work necessary to preserve life or property. However, when emergency work is performed under this section, the person performing it shall report such work to the (review and permitting authority) on the next business day after commencement of the work. Within ten (10) days thereafter, the person shall apply for a permit and perform such work within such time period as may be determined by the (review and permitting authority) to be reasonably necessary to correct any impairment such emergency work may have caused to the water conveyance capacity, stability or water quality of the protection area.
- f. Forestry and silviculture activities on land that is zoned for forestry, silvicultural or agricultural uses and are not incidental to other land development activity. If such activity results in land disturbance in the buffer that would otherwise be prohibited, then no other land disturbing activity other than normal forest management practices will be allowed on the entire property for three (3) years after the end of the activities that intruded on the buffer.

After the effective date of this article, it shall apply to new subdividing and platting activities.

Any land development activity within a buffer established hereunder or any impervious cover within a setback established hereunder is prohibited unless a variance is granted pursuant to section 7.5-205(b), below.
(Ord. No. 52-06, 8-3-06)

Sec. 7.5-205. Land development requirements.

(a) *Buffer and setback requirements.* All land development activity subject to this article shall meet the following requirements:

- (1) An undisturbed natural vegetative buffer shall be maintained for fifty (50) feet, measured horizontally, on both banks (as applicable) of the stream as measured from the top of the stream bank.
- (2) An additional setback shall be maintained for twenty-five (25) feet, measured horizontally, beyond the undisturbed natural vegetative buffer, in which all impervious cover shall be prohibited. Grading, filling and earthmoving shall be minimized within the setback.
- (3) No septic tanks or septic tank drain fields shall be permitted within the buffer or the setback.

(b) *Variance procedures.* Variances from the above buffer and setback requirements may be granted in accordance with the following provisions:

(1) Where a parcel was platted prior to the effective date of this article, and its shape, topography or other existing physical condition prevents land development consistent with this article, and the City of Cartersville finds and determines that the requirements of this article prohibit the otherwise lawful use of the property by the owner, the board of appeals (BA) of the City of Cartersville may grant a variance from the buffer and setback requirements hereunder, provided such variance require mitigation measures to offset the effects of any proposed land development on the parcel.

(2) Except as provided above, the BA of the City of Cartersville shall grant no variance from any provision of this article without first conducting a public hearing on the application for variance and authorizing the granting of the variance by an affirmative vote of the BA. The City of Cartersville shall give public notice of each such public hearing in a newspaper of general circulation within the city. The City of Cartersville shall require that the applicant post a sign giving notice of the proposed variance and the public hearing. The sign shall be of a size and posted in such a location on the property as to be clearly visible from the primary adjacent road right-of-way.

Variances will be considered only in the following cases:

- a. When a property's shape, topography or other physical conditions existing at the time of the adoption of this article prevents land development unless a buffer variance is granted.

b. Unusual circumstances when strict adherence to the minimal buffer requirements in the ordinance would create an extreme hardship.

Variances will not be considered when, following adoption of this article, actions of any property owner of a given property have created conditions of a hardship on that property.

(3) At a minimum, a variance request shall include the following information:

- a. A site map that includes locations of all streams, wetlands, floodplain boundaries and other natural features, as determined by field survey;
- b. A description of the shape, size, topography, slope, soils, vegetation and other physical characteristics of the property;
- c. A detailed site plan that shows the locations of all existing and proposed structures and other impervious cover, the limits of all existing and proposed land disturbance, both inside and outside the buffer and setback. The exact area of the buffer to be affected shall be accurately and clearly indicated;
- d. Documentation of unusual hardship should the buffer be maintained;
- e. At least one alternative plan, which does not include a buffer or setback intrusion, or an explanation of why such a site plan is not possible;
- f. A calculation of the total area and length of the proposed intrusion;
- g. A stormwater management site plan, if applicable; and
- h. Proposed mitigation, if any, for the intrusion. If no mitigation is proposed, the request must include an explanation of why none is being proposed.

(4) The following factors will be considered in determining whether to issue a variance:

- a. The shape, size, topography, slope, soils, vegetation and other physical characteristics of the property;
- b. The locations of all streams on the property, including along property boundaries;
- c. The location and extent of the proposed buffer or setback intrusion; and
- d. Whether alternative designs are possible which require less intrusion or no intrusion;
- e. The long-term and construction water-quality impacts of the proposed variance;
- f. Whether issuance of the variance is at least as protective of natural resources and the environment.

(Ord. No. 52-06, 8-3-06)

Sec. 7.5-206. Compatibility with other buffer regulations and requirements.

This article is not intended to interfere with, abrogate or annul any other ordinance, rule or regulation, statute or other provision of law. The requirements of this article should be considered minimum requirements, and where any provision of this article imposes restrictions different from those imposed by any other ordinance, rule, regulation or other provision of law, whichever provisions are more restrictive or impose higher protective standards for human health or the environment shall be considered to take precedence.

(Ord. No. 52-06, 8-3-06)

Sec. 7.5-207. Additional information requirements for development on buffer zone properties.

Any permit applications for property requiring buffers and setbacks hereunder must include the following:

(1) A site plan showing:

- a. The location of all streams on the property;
- b. Limits of required stream buffers and setbacks on the property;
- c. Buffer zone topography with contour lines at no greater than two-foot contour intervals;
- d. Delineation of forested and open areas in the buffer zone; and
- e. Detailed plans of all proposed land development in the buffer and of all proposed impervious cover within the setback.

(2) A description of all proposed land development within the buffer and setback; and

(3) Any other documentation that the city may reasonably deem necessary for review of the application and to insure that the buffer zone ordinance is addressed in the approval process.

All buffer and setback areas must be recorded on the final plat of the property following plan approval.

(Ord. No. 52-06, 8-3-06)

Sec. 7.5-208. Responsibility.

Neither the issuance of a development permit nor compliance with the conditions thereof, nor with the provisions of this article shall relieve any person from any responsibility otherwise imposed by law for damage to persons or property; nor shall the issuance of any permit hereunder serve to impose any liability upon the City of Cartersville, its officers or employees, for injury or damage to persons or property.
(Ord. No. 52-06, 8-3-06)

Sec. 7.5-209. Inspection.

The City of Cartersville may cause inspections of the work in the buffer or setback to be made periodically during the course thereof and shall make a final inspection following completion of the work. The permittee shall assist the City of Cartersville in making such inspections. The City of Cartersville shall have the authority to conduct such investigations as it may reasonably deem necessary to carry out its duties as prescribed in this article, and for this purpose to enter at reasonable time upon any property, public or private, for the purpose of investigating and inspecting the sites of any land development activities within the protection area.

No person shall refuse entry or access to any authorized representative or agent who requests entry for purposes of inspection, and who presents appropriate credentials, nor shall any person obstruct, hamper or interfere with any such representative while in the process of carrying out official duties.
(Ord. No. 52-06, 8-3-06)

Sec. 7.5-210. Violations, enforcement and penalties.

Any action or inaction which violates the provisions of this article or the requirements of an approved site 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.

(1) *Notice of violation.* If the City of Cartersville determines that an applicant or other responsible person has failed to comply with the terms and conditions of a permit, an approved site plan or the provisions of this article, 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 article without having first secured the appropriate permit therefor, 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:

- a. The name and address of the owner or the applicant or the responsible person;
- b. The address or other description of the site upon which the violation is occurring;
- c. A statement specifying the nature of the violation;
- d. A description of the remedial measures necessary to bring the action or inaction into compliance with the permit, the approved site plan or this article and the date for the completion of such remedial action;
- e. A statement of the penalty or penalties that may be assessed against the person to whom the notice of violation is directed; and
- f. A statement that the determination of violation may be appealed to the City of Cartersville 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).

(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 (1) 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 of Cartersville 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 of Cartersville may take any one (1) or more of the following actions or impose any one (1) or more of the following penalties:

a. *Stop work order.* The City of Cartersville may issue a stop work order which 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 necessary remedial measures to cure such violation or violations.

b. *Withhold certificate of occupancy.* The City of Cartersville 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.

c. *Suspension, revocation or modification of permit.* The City of Cartersville 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.

d. *Civil penalties.* In the event the applicant or other responsible person fails to take the remedial measures set forth 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 of Cartersville 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 of Cartersville has taken one (1) or more of the actions described above, the city may impose a penalty not to exceed one thousand dollars (\$1,000.00) (depending on the severity of the violation) for each day the violation remains unremedied after receipt of the notice of violation. If said penalty is not paid within the time presented by the city, the city has the right to enforce said claim in a court of competent jurisdiction and/or in the alternative to pursue the criminal penalties detailed in e. below. Additionally, the penalty shall become a special assessment against the property and shall constitute a lien on the property in the amount of the special assessment.

e. *Criminal penalties.* For intentional and flagrant violations of this article, the City of Cartersville may issue a citation to the applicant or other responsible person, requiring such person to appear in municipal court to answer charges for such violation. Upon conviction, such person shall be punished by a fine not to exceed one thousand dollars (\$1,000.00) 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.

(Ord. No. 52-06, 8-3-06)

Sec. 7.5-211. Administrative appeal and judicial review.

(a) *Administrative appeal.* Any person aggrieved by a decision or order of City of Cartersville, may appeal in writing within thirty (30) days after the issuance of such decision or order to the designated official of City of Cartersville and shall be entitled to a hearing before the BA of City of Cartersville within thirty (30) days of receipt of the written appeal.

(b) *Judicial review.* Any person aggrieved by a decision or order of the City of Cartersville, after exhausting all administrative remedies, shall have the right to appeal de novo to the Superior Court of Bartow County.

(Ord. No. 52-06, 8-3-06)

Secs. 7.5-212--7.5-220. Reserved.

ARTICLE IX. POST-DEVELOPMENT STORMWATER MANAGEMENT FOR NEW DEVELOPMENT AND REDEVELOPMENT

Sec. 7.5-221. 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 which provide stormwater management quality and quantity benefits.

Localities in the State of Georgia are required to comply with a number of both state and federal laws, regulations and permits which require a locality to address the impacts of post-development stormwater runoff quality and nonpoint source pollution.

Therefore, the City of Cartersville 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.

(Ord. No. 61-06, § 1, 8-17-06)

Sec. 7.5-222. General provisions.

(a) *Purpose and intent.* The purpose of this article 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 article 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 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 county'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.

(b) *Applicability.*

(1) This article shall be applicable to all land development, including, but not limited to, 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 (1) 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, or that involves other land development activities of one (1) acre or more;

b. Redevelopment that includes the creation, addition or replacement of five thousand (5,000) square feet or more of impervious cover, or that involves other land development activity of one (1) acre or more;

c. Any new development or redevelopment, regardless of size, that is defined by the ordinance administrator 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 article:

a. Individual single-family or duplex residential lots that are not part of a subdivision or phased development project;

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 ordinance administrator.

(c) *Designation of ordinance administrator.* The city engineer or their designee is hereby appointed to administer and implement the provisions of this article.

(d) *Compatibility with other regulations.* This article is not intended to modify or repeal any other ordinance, rule, regulation or other provision of law. The requirements of this article are in addition to the requirements of any other ordinance, rule, regulation or other provision of law, and where any provision of this article 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.

(e) *Severability.* If the provisions of any section, subsection, paragraph, subdivision or clause of this article 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 article.

(f) *Stormwater design manual.* The City of Cartersville will utilize the policy, criteria and information including technical specifications and standards in the latest edition of the Georgia Stormwater Management Manual and any relevant local addenda, for the proper implementation of the requirements of this article. The manual may be updated and expanded periodically, based on improvements in science, engineering, monitoring and local maintenance experience.

(Ord. No. 61-06, § 1, 8-17-06)

Sec. 7.5-223. Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

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 Cartersville, Georgia, a municipal corporation of the State of Georgia.

Conservation easement means an agreement between a land owner and the City of Cartersville 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 (4) 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 which 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.

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.

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 which comprise, facilitate or result in land development.

Land development project means a discrete land development undertaking.

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-year through twenty-five-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 of Cartersville to the applicant which is required for undertaking any land development activity.

Person means, except to the extent exempted from this article, 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 article.

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 means the division of a tract or parcel of land resulting in one (1) or more new lots or building sites for the purpose, whether immediately or in the future, of sale, other transfer of ownership or land development, and includes divisions of land resulting from or made in connection with the layout or development of a new street or roadway or a change in an existing street or roadway.

(Ord. No. 61-06, § 1, 8-17-06)

Sec. 7.5-224. Permit procedures and requirements.

(a) *Permit application requirements.* No owner or developer shall perform any land development activities without first meeting the requirements of this article prior to commencing the proposed activity.

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

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

- (1) Stormwater concept plan and consultation meeting certification in accordance with section 7.5-224(b);
- (2) Stormwater management plan in accordance with section 7.5-224(c);
- (3) Inspection and maintenance agreement in accordance with section 7.5-224(d), if applicable;
- (4) Performance bond in accordance with section 7.5-224(e), if applicable; and,
- (5) Permit application and plan review fees in accordance with section 7.5-224(f).

(b) *Stormwater concept plan and consultation meeting.* Before any stormwater management permit application is submitted, it is required that the land owner or developer shall meet with the City of Cartersville for a consultation meeting on a concept plan for the post-development stormwater management system to be utilized in the proposed land development project. This consultation meeting should shall take place at the time of the preliminary plan of subdivision or other early step in the development process. The purpose of this meeting is to discuss the post-development stormwater management measures necessary for the proposed project, as well as to discuss and assess constraints, opportunities and potential ideas for stormwater management designs before the formal site design engineering is commenced.

To accomplish this goal the following information shall be included in the concept plan which shall be submitted in advance of the meeting:

(1) *Existing conditions/proposed site plans.* Existing conditions and proposed site layout sketch plans, which illustrate at a minimum: existing and proposed topography; perennial and intermittent streams; mapping of predominant soils from soil surveys (when available); boundaries of existing predominant vegetation and proposed limits of clearing and grading; and location of existing and proposed roads, buildings, parking areas and other impervious surfaces.

(2) *Natural resources inventory.* A written or graphic inventory of the natural resources at the site and surrounding area as it exists prior to the commencement of the project. This description should include a discussion of soil conditions, forest cover, topography, wetlands, and other native vegetative areas on the site, as well as the location and boundaries of other natural feature protection and conservation areas such as wetlands, lakes, ponds, floodplains, stream buffers and other setbacks (e.g., drinking water well setbacks, septic setbacks, etc.). Particular attention should be paid to environmentally sensitive features that provide particular opportunities or constraints for development.

(3) *Stormwater management system concept plan.* A written or graphic concept plan of the proposed post-development stormwater management system including: preliminary selection and location of proposed structural stormwater controls; location of existing and proposed conveyance systems such as grass channels, swales, and storm drains; flow paths; location of floodplain/floodway limits; relationship of site to upstream and downstream

properties and drainages; and preliminary location of proposed stream channel modifications, such as bridge or culvert crossings.

Local watershed plans, the Bartow County Greenspace Projection Plan (if applicable) and any relevant resource protection plans will be consulted in the discussion of the concept plan.

(c) *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 article, including the performance criteria set forth in section 7.5-225 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 article 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:

(1) *Common address and legal description of site.*

(2) *Vicinity map.*

(3) *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 sub basin 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.

(4) *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 sub basin affected by the project; calculations for determining the runoff volumes that need to be addressed for each sub basin for the development project to meet the post-development stormwater management performance criteria in section 7.5-225; 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 fifty (50) percent of the site area for the entire site, then the performance criteria in section 7.5-225 must be met for the stormwater runoff from the entire site.

(5) *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 7.5-225; 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.

(6) *Post-development downstream analysis.* A downstream peak flow analysis which 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.

(7) *Construction-phase erosion and sedimentation control plan.* An erosion and sedimentation control plan in accordance with the Georgia Erosion and Sedimentation Control Act or 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.

(8) *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.

(9) *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, 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.

(10) *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.

(11) *Inspection and maintenance agreements.* Unless an on-site stormwater management facility or practice is dedicated to and accepted by the City of Cartersville as provided in section 7.5-224(d) 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 7.5-224(d).

(12) *Evidence of acquisition of applicable local and non-local permits.* The applicant shall certify and provide documentation to the City of Cartersville that all other applicable environmental permits have been acquired for the site prior to approval of the stormwater management plan.

(d) *Stormwater management inspection and maintenance agreements.* Prior to the issuance of any permit for a land development activity requiring a stormwater management facility or practice hereunder and for which the City of Cartersville 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 of Cartersville, execute an inspection and maintenance agreement, and/or a conservation easement, if applicable, that shall be binding on all subsequent owners of the site.

The inspection and maintenance agreement, if applicable, must be approved by the City of Cartersville 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 of Cartersville may also enforce all of the provisions for ongoing inspection and maintenance in section 7.5-227 of this article.

The City of Cartersville, in lieu of an inspection and maintenance agreement, may accept dedication of any existing or future stormwater management facility for maintenance, provided such facility meets all the requirements of this article and includes adequate and perpetual access and sufficient area, by easement or otherwise, for inspection and regular maintenance.

(e) *Performance and maintenance bonds.* The City of Cartersville may insert provisions under this section requiring the posting of bonds or other security to guarantee performance and payment of construction and/or maintenance obligations hereunder.

(f) *Application procedure.*

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

(2) Permit applications shall include the items set forth in section 7.5-224(a) above (two (2) copies of the stormwater management plan and the inspection maintenance agreement, if applicable, shall be included).

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

(4) If either the permit application, stormwater management plan or inspection and maintenance agreement are disapproved, the City of Cartersville shall 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 re-submittal.

(5) Upon a finding by the City of Cartersville that the permit application, stormwater management plan and inspection and maintenance agreement, if applicable, meet the requirements of this article, the City of Cartersville 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 article 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 of Cartersville 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 of Cartersville; 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 7.5-226(b).

(g) *Application review fees.* The fee for review of any stormwater management application shall be based on the fee structure established by the City of Cartersville and shall be made prior to the issuance of any building permit for the development.

(h) *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 of Cartersville which 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 of Cartersville 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.

(Ord. No. 61-06, 8-17-06)

Sec. 7.5-225. Post-development stormwater management performance criteria.

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

(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:

- a. It is sized to treat the prescribed water quality treatment volume from the site, as defined in the Georgia Stormwater Management Manual;
- b. Appropriate structural stormwater controls or nonstructural practices are selected, designed, constructed or preserved, and maintained according to the specific criteria in the Georgia Stormwater Management Manual; and
- c. Runoff from hotspot land uses and activities identified by the City of Cartersville are adequately treated and addressed through the use of appropriate structural stormwater controls, nonstructural practices and pollution prevention practices.

(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 (3) approaches:

- a. Preservation, restoration and/or reforestation (with native vegetation) of the applicable stream buffer;
- b. Twenty-four-hour extended detention storage of the one-year, twenty-four-hour return frequency storm event; (This requirement may be adjusted or waived by the City of Cartersville for sites that discharge directly into larger streams, rivers, wetlands, or lakes, or to a manmade channel or conveyance system where the reduction in these flows will not have an impact on upstream or downstream stream bank or channel integrity.)
- c. Erosion prevention measures such as energy dissipation and velocity control.

(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 twenty-five-year, twenty-four-hour return frequency storm event. If control of the one-year, twenty-four-hour storm under section 7.5-225(2)b. is exempted, then peak discharge rate attenuation of the two-year through the twenty-five-year return frequency storm event must be provided. (This requirement may be adjusted or waived by the City of Cartersville for sites where the post-development downstream analysis 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.)

(4) *Extreme flooding protection.* Extreme flood and public safety protection shall be provided by controlling and safely conveying the one hundred-year, twenty-four-hour return frequency storm event such that flooding is not exacerbated. (This requirement may be adjusted or waived by the City of Cartersville for sites where the post-development downstream analysis 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.)

(5) *Structural stormwater controls.* All structural stormwater management facilities shall be selected and designed using the appropriate criteria from the Georgia Stormwater Management Manual. All structural stormwater controls must be designed appropriately to meet their intended function. For other structural stormwater controls not included in the Georgia Stormwater Management 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 of Cartersville 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 of Cartersville 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 Georgia Stormwater Management Manual for guidance on the factors that determine site design feasibility when selecting and locating a structural stormwater control.

(6) *Stormwater credits for nonstructural measures.* The use of one (1) or more site design measures by the applicant may allow for a reduction in the water quality treatment volume required under section 7.5-225(1). The applicant may, if approved by the City of Cartersville, 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 which 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 Georgia Stormwater Management Manual.

(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, gutter, 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 than one parcel, existing or proposed, shall meet the following requirements:

- a. Methods to calculate stormwater flows shall be in accordance with the stormwater design manual;
- b. 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
- c. Design and construction of stormwater conveyance facilities shall be in accordance with the criteria and specifications found in the stormwater design manual.

(8) *Dam design guidelines.* Any land disturbing activity that involves a site which proposes a dam shall comply with the Georgia Safe Dams Act and Rules for Dam Safety as applicable.

(Ord. No. 61-06, 8-17-06)

Sec. 7.5-226. Construction inspections of post-development stormwater management system.

(a) *Inspections to ensure plan compliance during construction.* Periodic inspections of the stormwater management system construction shall be conducted by the staff of the City of Cartersville or conducted and certified by a professional engineer who has been approved by the City of Cartersville. Construction inspections shall utilize the approved stormwater management plan for establishing compliance.

All inspections shall be documented with written reports that contain the following information:

- (1) The date and location of the inspection;
- (2) Whether construction is in compliance with the approved stormwater management plan;
- (3) Variations from the approved construction specifications; and,
- (4) 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.

(b) *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 final construction are 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 of Cartersville is required before the release of any performance securities can occur.

(Ord. No. 61-06, 8-17-06)

Sec. 7.5-227. Ongoing inspection and maintenance of stormwater facilities and practices.

(a) *Long-term maintenance inspection of stormwater facilities and practices.* Stormwater management facilities and practices included in a stormwater management plan which is 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 article.

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 of Cartersville 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 of Cartersville, may correct the violation as provided in subsection 7.5-227(d) hereof.

Inspection programs by the City of Cartersville 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.

(b) *Right-of-entry for inspection.* The terms of the inspection and maintenance agreement shall provide for the City of Cartersville 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 article is occurring or has occurred and to enter when necessary for abatement of a public nuisance or correction of a violation of this article.

(c) *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 of Cartersville.

(d) *Failure to maintain.* If a responsible person fails or refuses to meet the requirements of the inspection and maintenance agreement, the City of Cartersville, 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 of Cartersville may assess the owner(s) of the facility for the cost of repair work which shall be a lien on the property, and may be placed on the ad valorem tax bill for such property and collected in the ordinary manner for such taxes.

(Ord. No. 61-06, 8-17-06)

Sec. 7.5-228. Violations, enforcement and penalties.

Any action or inaction which violates the provisions of this article 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.

(1) *Notice of violation.* If the City of Cartersville 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 article, 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 article 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:

- a. The name and address of the owner or the applicant or the responsible person;
- b. The address or other description of the site upon which the violation is occurring;
- c. A statement specifying the nature of the violation;
- d. A description of the remedial measures necessary to bring the action or inaction into compliance with the permit, the stormwater management plan or this article and the date for the completion of such remedial action;
- e. A statement of the penalty or penalties that may be assessed against the person to whom the notice of violation is directed; and
- f. A statement that the determination of violation may be appealed to the City of Cartersville 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).

(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 (1) 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 of Cartersville 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 of Cartersville may take any one (1) or more of the following actions or impose any one (1) or more of the following penalties.

a. *Stop work order.* The City of Cartersville may issue a stop work order which 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.

b. *Withhold certificate of occupancy.* The City of Cartersville 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.

c. *Suspension, revocation or modification of permit.* The City of Cartersville 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 of Cartersville may deem necessary to enable the applicant or other responsible person to take the necessary remedial measures to cure such violations.

d. *Civil penalties.* In the event the applicant or other responsible person fails to take the remedial measures set forth 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 of Cartersville 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 of Cartersville has taken one (1) or more of the actions described above, the City of Cartersville may impose a penalty not to exceed one thousand dollars (\$1,000.00) (depending on the severity of the violation) for each day the violation remains un-remedied after receipt of the notice of violation. If said penalty is not paid within the time presented by the city, the city has the right to enforce said claim in a court of competent jurisdiction and/or in the alternative to pursue the criminal penalties detailed in subsection e. below. Additionally, the penalty shall become a special assessment against the property and shall constitute a lien on the property in the amount of the assessment.

e. *Criminal penalties.* For intentional and flagrant violations of this article, the City of Cartersville may issue a citation to the applicant or other responsible person, requiring such person to appear in municipal court to answer charges for such violation. Upon conviction, such person shall be punished by a fine not to exceed one thousand dollars (\$1,000.00) 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.

(Ord. No. 61-06, 8-17-06)

Secs. 7.5-228--7.5-240. Reserved.

ARTICLE X. MODEL ILLICIT DISCHARGE AND ILLEGAL CONNECTION

Sec. 7.5-241. Introduction.

It is hereby determined that:

Discharges to the municipal separate storm sewer system that are not composed entirely of stormwater runoff contribute to increased nonpoint source pollution and degradation of receiving waters.

These non-stormwater discharges occur due to spills, dumping and improper connections to the municipal separate storm sewer system from residential, industrial, commercial or institutional establishments.

These non-stormwater discharges not only impact waterways individually, but geographically dispersed, small volume non-stormwater discharges can have cumulative impacts on receiving waters.

The impacts of these discharges adversely affect public health and safety, drinking water supplies, recreation, fish and other aquatic life, property values and other uses of lands and waters.

These impacts can be minimized through the regulation of spills, dumping and discharges into the municipal separate storm sewer system.

Localities in the State of Georgia are required to comply with a number of state and federal laws, regulations and permits which require a locality to address the impacts of stormwater runoff quality and nonpoint source pollution due to improper non-stormwater discharges to the municipal separate storm sewer system.

Therefore, the City of Cartersville adopts this article to prohibit such non-stormwater discharges to the municipal separate storm sewer system. It is determined that the regulation of spills, improper dumping and discharges to the municipal separate storm sewer system is in the public interest and will prevent threats to public health and safety, and the environment.

(Ord. No. 51-06, § 1, 8-3-06)

Sec. 7.5-242. General provisions.

(a) *Purpose and intent.* The purpose of this article is to protect the public health, safety, environment and general welfare through the regulation of non-stormwater discharges to the municipal separate storm sewer system to the maximum extent practicable as required by federal law. This article establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process. The objectives of this article are to:

- (1) Regulate the contribution of pollutants to the municipal separate storm sewer system by any person;
- (2) Prohibit illicit discharges and illegal connections to the municipal separate storm sewer system;
- (3) Prevent non-stormwater discharges, generated as a result of spills, inappropriate dumping or disposal, to the municipal separate storm sewer system; and
- (4) To establish legal authority to carry out all inspection, surveillance, monitoring and enforcement procedures necessary to ensure compliance with this article.

(b) *Applicability.* The provisions of this article shall apply throughout the corporate limits of the City of Cartersville.

(c) *Compatibility with other regulations.* This article is not intended to modify or repeal any other ordinance, rule, regulation, other provision of law. The requirements of this article are in addition to the requirements of any other ordinance, rule, regulation, or other provision of law, and where any provision of this article 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.

(d) *Severability.* If the provisions of any section, subsection, paragraph, subdivision or clause of this article 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 article.

(e) *Responsibility for administration.* The City of Cartersville shall administer, implement, and enforce the provisions of this article. The city manager shall designate the administrator of this article.

(Ord. No. 51-06, § 1, 8-3-06)

Sec. 7.5-243. Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Accidental discharge means a discharge prohibited by this article which occurs by chance and without planning or thought prior to occurrence.

City means the City of Cartersville, Georgia, a municipal corporation of the State of Georgia.

Clean Water Act means the Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.

Construction activity means activities subject to the Georgia Erosion and Sedimentation Control Act or NPDES General Construction Permits. These include construction projects resulting in land disturbance. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

Illicit discharge means any direct or indirect non-stormwater discharge to the municipal separate storm sewer system, except as exempted in section 7.5-244(a)(1)--(3) of this article.

Illegal connection means either of the following:

(a) Any pipe, open channel, drain or conveyance, whether on the surface or subsurface, which allows an illicit discharge to enter the storm drain system including but not limited to any conveyances which allow any non-stormwater discharge including sewage, process wastewater, and wash water to enter the storm drain system, regardless of whether such pipe, open channel, drain or conveyance has been previously allowed, permitted, or approved by an authorized enforcement agency; or

(b) Any pipe, open channel, drain or conveyance connected to the municipal separate storm sewer system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

Industrial activity means activities subject to NPDES Industrial Permits as defined in 40 CFR, Section 122.26 (b)(14).

National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit means a permit issued by the Georgia EPD under authority delegated pursuant to 33 USC § 1342(b) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

Municipal separate storm sewer system (MS4) means any facility designed or used for collecting and/or conveying stormwater, including but not limited to any roads with drainage systems, highways, municipal streets, curbs, gutters, inlets, catch basins, piped storm drains, pumping facilities, structural stormwater controls, ditches, swales, natural and manmade or altered drainage channels, reservoirs, and other drainage structures, and which is:

(a) Owned or maintained by the City of Cartersville;

(b) Not a combined sewer; and

(c) Not part of a publicly-owned treatment works.

Non-stormwater discharge means any discharge to the storm drain system that is not composed entirely of stormwater.

Person means, except to the extent exempted from this article, 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.

Pollutant means anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; petroleum hydrocarbons; automotive fluids; cooking grease; detergents (biodegradable or otherwise); degreasers; cleaning chemicals; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; liquid and solid wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; concrete and cement; and noxious or offensive matter of any kind.

Pollution means the contamination or other alteration of any water's physical, chemical or biological properties by the addition of any constituent and includes but is not limited to, a change in temperature, taste, color, turbidity, or odor of such waters, or the discharge of any liquid, gaseous, solid, radioactive, or other substance into any such waters as will or is likely to create a nuisance or render such waters harmful, detrimental

or injurious to the public health, safety, welfare, or environment, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life.

Premises mean any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

State waters means any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs, wells, and other bodies of surface and subsurface water, natural or artificial, lying within or forming a part of the boundaries of the State of Georgia which are not entirely confined and retained completely upon the property of a single person.

Stormwater runoff or *stormwater* means any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such 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.

(Ord. No. 51-06, § 1, 8-3-06)

Sec. 7.5-244. Prohibitions.

(a) *Prohibition of illicit discharges.* No person shall throw, drain, or otherwise discharge, cause, or allow others under its control to throw, drain, or otherwise discharge into the municipal separate storm sewer system any pollutants or waters containing any pollutants, other than stormwater.

The following discharges are exempt from the prohibition provision above:

(1) Water line flushing performed by a government agency, other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising ground water, ground water infiltration to storm drains, uncontaminated pumped ground water, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, natural riparian habitat or wetland flows, and any other water source not containing pollutants.

(2) Discharges or flows from fire fighting, and other discharges specified in writing by the City of Cartersville as being necessary to protect public health and safety.

(3) The prohibition provision above shall not apply to any non-stormwater discharge permitted under an NPDES permit or order issued to the discharger and administered under the authority of the State and the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the municipal separate storm sewer system.

(b) *Prohibition of illegal connections.* The construction, connection, use, maintenance or continued existence of any illegal connection to the municipal separate storm sewer system is prohibited.

(1) This prohibition expressly includes, without limitation, illegal connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

(2) A person violates this article if the person connects a line conveying sewage to the municipal separate storm sewer system, or allows such a connection to continue.

(3) Improper connections in violation of this article must be disconnected and redirected, if necessary, to an approved onsite wastewater management system or the sanitary sewer system upon approval of the City of Cartersville Sewer Department.

(4) Any drain or conveyance that has not been documented in plans, maps or equivalent, and which may be connected to the storm sewer system, shall be located by the owner or occupant of that property upon receipt of written notice of violation from the City of Cartersville requiring that such locating be completed. Such notice will specify a reasonable time period within which the location of the drain or conveyance is to be completed, that the drain or conveyance be identified as storm sewer, sanitary sewer or other, and that the outfall location or point of connection to the storm sewer system, sanitary sewer system or other discharge point be identified. Results of these investigations are to be documented and provided to the City of Cartersville.

(Ord. No. 51-06, § 1, 8-3-06)

Sec. 7.5-245. Industrial or construction activity discharges.

Any person subject to an industrial or construction activity NPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the City of Cartersville prior to allowing discharges to the municipal separate storm sewer system. (Ord. No. 51-06, § 1, 8-3-06)

Sec. 7.5-246. Access and inspection of properties and facilities.

The City of Cartersville shall be permitted to enter and inspect properties and facilities at reasonable times as often as may be necessary to determine compliance with this article.

(1) If a property or facility has security measures in force which require proper identification and clearance before entry into its premises, the owner or operator shall make the necessary arrangements to allow access to representatives of the City of Cartersville.

(2) The owner or operator shall allow the City of Cartersville ready access to all parts of the premises for the purposes of inspection, sampling, photography, videotaping, examination and copying of any records that are required under the conditions of an NPDES permit to discharge stormwater.

(3) The City of Cartersville shall have the right to set up on any property or facility such devices as are necessary in the opinion of the City of Cartersville to conduct monitoring and/or sampling of flow discharges.

(4) The City of Cartersville may require the owner or operator to install monitoring equipment and perform monitoring as necessary, and make the monitoring data available to the City of Cartersville. This sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the owner or operator at his/her own expense. All devices used to measure flow and quality shall be calibrated to ensure their accuracy.

(5) Any temporary or permanent obstruction to safe and easy access to the property or facility to be inspected and/or sampled shall be promptly removed by the owner or operator at the written or oral request of the City of Cartersville and shall not be replaced. The costs of clearing such access shall be borne by the owner or operator.

(6) Unreasonable delays in allowing the City of Cartersville access to a facility is a violation of this article.

(7) If the City of Cartersville has been refused access to any part of the premises from which stormwater is discharged, and the City of Cartersville is able to demonstrate probable cause to believe that there may be a violation of this article, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this article or any order issued hereunder, or to protect the overall public health, safety, environment and welfare of the community, then the City of Cartersville may seek issuance of a search warrant from any court of competent jurisdiction.

(Ord. No. 51-06, § 1, 8-3-06)

Sec. 7.5-247. Notification of accidental discharges and spills.

Notwithstanding other requirements of law, as soon as any person responsible for a facility, activity or operation, or responsible for emergency response for a facility, activity or operation has information of any known or suspected release of pollutants or non-stormwater discharges from that facility or operation which are resulting or may result in illicit discharges or pollutants discharging into stormwater, the municipal separate storm sewer system, state waters, or waters of the U.S., said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release so as to minimize the effects of the discharge.

Said person shall notify the authorized enforcement agency in person or by phone, facsimile or in person no later than twenty-four (24) hours of the nature, quantity and time of occurrence of the discharge. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the City of Cartersville within three (3) business days of the phone or in person notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three (3) years. Said person shall also take immediate steps to ensure no recurrence of the discharge or spill.

In the event of such a release of hazardous materials, emergency response agencies and/or other appropriate agencies shall be immediately notified.

Failure to provide notification of a release as provided above is a violation of this article.

(Ord. No. 51-06, § 1, 8-3-06)

Sec. 7.5-248. Violations, enforcement and penalties.

(a) *Violations.* It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this article. Any person who has violated or continues to violate the provisions of this article, may be subject to the enforcement actions outlined in this section or may be restrained by injunction or otherwise abated in a manner provided by law.

In the event the violation constitutes an immediate danger to public health or public safety, the City of Cartersville is authorized to enter upon the subject private property, without giving prior notice, to take any and all measures necessary to abate the violation and/or restore the property. The City of Cartersville is authorized to seek costs of the abatement as outlined in section 7.5-248(b)(5).

(b) *Notice of violation.* Whenever the City of Cartersville finds that a violation of this article has occurred, the City of Cartersville may order compliance by written notice of violation.

(1) The notice of violation shall contain:

- a. The name and address of the alleged violator;
- b. The address when available or a description of the building, structure or land upon which the violation is occurring, or has occurred;
- c. A statement specifying the nature of the violation;
- d. A description of the remedial measures necessary to restore compliance with this article and a time schedule for the completion of such remedial action;
- e. A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed; and
- f. A statement that the determination of violation may be appealed to the City of Cartersville by filing a written notice of appeal within thirty (30) days of service of notice of violation.

(2) Such notice may require without limitation:

- a. The performance of monitoring, analyses, and reporting;
- b. The elimination of illicit discharges and illegal connections;
- c. That violating discharges, practices, or operations shall cease and desist;
- d. The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;
- e. Payment of costs to cover administrative and abatement costs; and
- f. The implementation of pollution prevention practices.

(3) *Appeal of notice of violation.* Any person receiving a notice of violation may appeal the determination of the City of Cartersville. The notice of appeal must be received within thirty (30) days from the date of the notice of violation. Hearing on the appeal before the code enforcement officer or his/her designee shall take place within fifteen (15) days from the date of receipt of the notice of appeal. The decision of the appropriate authority or their designee shall be final.

(4) *Enforcement measures after appeal.* If the violation has not been corrected pursuant to the requirements set forth in the notice of violation, or, in the event of an appeal, within five (5) days of the decision of the code enforcement officer of the City of Cartersville, then representatives of the City of Cartersville may enter upon the subject private property and are authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the government agency or designated contractor to enter upon the premises for the purposes set forth above.

(5) *Costs of abatement of the violation.* Within ten (10) days after abatement of the violation, the owner of the property will be notified of the cost of abatement, including administrative costs. The property owner may file a written protest objecting to the assessment or to the amount of the assessment within five (5) days of such notice. If the amount due is not paid within thirty (30) days after receipt of the notice, or if an appeal is taken, within thirty (30) days after a decision on said appeal, the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment.

Any person violating any of the provisions of this article shall become liable to the City of Cartersville by reason of such violation.

(6) *Civil penalties.* In the event the alleged violator fails to take the remedial measures set forth 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 of Cartersville shall deem appropriate, after the City of Cartersville has taken one (1) or more of the actions described above, the City of Cartersville) may impose a penalty not to exceed one thousand dollars (\$1,000.00) (depending on the severity of the violation) for each day the violation remains unremedied after receipt of the notice of violation. If said penalty is not paid within the time presented by the city, the city has the right to enforce said claim in a court of competent jurisdiction and/or in the alternative to pursue the criminal penalties detailed in (8) below. Additionally, the penalty shall become a special assessment against the property and shall constitute a lien on the property in the amount of the assessment.

(7) *Criminal penalties.* For intentional and flagrant violations of this article, the City of Cartersville may issue a citation to the alleged violator requiring such person to appear in municipal court to answer charges for such violation. Upon conviction, such person shall be punished by a fine not to exceed one thousand dollars (\$1,000.00) 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.

(8) *Violations deemed a public nuisance.* In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of this article is a threat to public health, safety, welfare, and environment and is declared and deemed a nuisance, and may be abated by injunctive or other equitable relief as provided by law.

(9) *Remedies not exclusive.* The remedies listed in this article are not exclusive of any other remedies available under any applicable federal, state or local law and the City of Cartersville may seek cumulative remedies.

(10) *Expenses.* The City of Cartersville may recover attorney's fees, court costs, and other expenses associated with enforcement of this article, including sampling and monitoring expenses.

(Ord. No. 51-06, § 1, 8-3-06)

Secs. 7.5-249--7.5-260. Reserved.