

Environmental Protection Agency
National Pollutant Discharge
Elimination System

Palm Beach County MS4
Permit No. FLS000018

Annual Report
Appendix C

City of Belle Glade
Co-Permittee

August 1998

EPA/NPDES

Chapter 8

DRAINAGE*

- Art. I. Drainage Facilities, §§ 8-1-8-29
- Art. II. Use and Control of Drainage System, §§ 8-30-8-41

*Cross reference—Buildings and building regulations, Ch. 7.
State law reference—Drainage and water control, F.S. Ch. 298.

ARTICLE I. DRAINAGE FACILITIES

Sec. 8-1. Title, scope.

This chapter shall be known and may be cited as the "City of Belle Glade Drainage Ordinance" and shall relate to storm and surface water drainage within the jurisdiction of the city. (Code 1967, § 7½-1)

Sec. 8-2. General provisions.

All subdivisions must have comprehensive storm drainage facilities which convey stormwaters through easements to publicly dedicated and maintained drainage canals or natural watercourses. The design data of the drainage system shall be submitted along with the construction plans in a report form prepared by the developer's engineer indicating the method of control of stormwater and groundwater, including the method of drainage, existing water elevations, recurring high-water elevations, proposed design water elevations, drainage structures, canals, ditches, and any other pertinent information pertaining to the system. The drainage system shall be designed for long life, low maintenance cost and ease of maintenance by normal maintenance methods. The criteria to be used in the design of drainage systems shall be as stated in this chapter. The storm system shall be designed so that elevation of the hydraulic gradient is never higher than the grade elevation of any inlet in the system. The drainage pipes shall be sloped and structures channeled to develop self-cleaning velocities but not to develop souring of pipes or waterways. (Code 1967, § 7½-12)

Sec. 8-3. Master drainage map.

The engineer shall include in the construction plans a master drainage map showing all existing and proposed features. The map is to be prepared on twenty-four-inch by thirty-six-inch sheets at a scale not less than one (1) inch equals two hundred (200) feet. Listed below are the features that are to be included on the drainage map:

- (1) Drainage ridge closure:
 - a. All areas draining to the proposed subdivision;

- b. All areas tributary to existing structures;
 - c. All areas tributary to proposed structures.
- (2) Sufficient topographical information with sufficient elevations to verify the location of all ridges, streams, and other pertinent features;
 - (3) High-water data on existing structures upstream and downstream from the subdivision;
 - (4) Notes indicating sources of high-water data;
 - (5) Notes pertaining to existing standing water, areas of heavy seepage, or springs;
 - (6) Existing drainage features (ditches, roadways, ponds, etc.);
 - (7) Proposed subdivision layout with horizontal and vertical controls.
- (Code 1967, § 7½-13)

Sec. 8-4. Storm sewer design.

In subdivisions where storm sewers are planned, the construction plans shall include storm sewer tabulations that include:

- (1) Location and type of structure;
 - (2) Type and length of line;
 - (3) Drainage area;
 - (4) Runoff factor;
 - (5) Time of concentration to structure;
 - (6) Rainfall intensity;
 - (7) Total runoff;
 - (8) Hydraulic gradient control elevation;
 - (9) Hydraulic grade line, crown elevation, and flow line of each pipe;
 - (10) Physical drop in pipe;
 - (11) Hydraulic gradient loss;
 - (12) Diameter of pipe;
 - (13) Hydraulic gradient slope;
 - (14) Velocity.
- (Code 1967, § 7½-14)

- (12) *Ditch bottom or grade inlets.* Ditch bottom or grade inlets shall conform to the standard details incorporated in this chapter.
- (13) *Conflicting structures.* Where it is necessary to allow a sanitary line or other utility to pass through a manhole, inlet, or junction box, because of no reasonable alternate the utility shall be cast iron, steel or other suitable material and maintained in the upper half of the storm sewer opening. A minimum clearance of one (1) foot between the shell of the utility and invert of a culvert, entrance or discharge point, shall be provided.
- (14) *Headwalls.* Headwalls may be required in special cases by the city. Concrete and sand cement headwalls, when called for, shall conform to the standard details incorporated in this chapter. Where headwalls are not provided hydraulic analysis of entrance and exit losses shall be submitted. Headwalls shall be constructed of Class NS (non-stress) concrete or sand cement rip-rap in accordance with the standard details incorporated in this chapter.
- (15) *Excavation.* Muck and other unstable material below storm sewer pipe and structures shall be completely removed to a depth of three (3) feet below such pipe structure or to the depth where sand or other acceptable material is encountered. The trench shall be backfilled with clean approved material and shall be compacted to one hundred (100) percent of maximum dry density.

(Code 1967, § 7½-15)

Sec. 8-6. Outfall ditches and canals.

(a) *Generally.* All runoff from each individual unit must be handled to a point of positive outfall. No design of an individual unit shall be dependent upon the ultimate installation of a future unit. Where an existing outfall is being utilized and the capacity to handle any additional runoff is in question, data to support the design shall be included in the drainage analysis. All swales, ditches or canals shall have sufficient drainage

right-of-way provided to allow for the installation of the ditch.

(b) *Maintenance berm and property setback.* All swales, ditches or canals shall have a minimum maintenance berm of eighteen (18) feet and a fifteen-foot property setback adjacent to the installation.

(c) *Grading adjacent to ditches and canals.* Areas adjacent to the ditches and canals shall be graded in such manner as to preclude the entrance of excessive runoff, except at locations provided.

(d) *Maximum sideslopes.* The maximum sideslopes allowed shall be two and one-tenth (2.1) with the top ditch bank rounded off.

(e) *Bottom width.* The minimum bottom width shall be four (4) feet.

(f) *Size.* All ditches shall be sized using accepted engineering practices. In all cases, sufficient engineering data giving drainage area, velocity, and depth of flow is to be included in the drainage analysis.

(g) *Velocity.* Unless unstable or highly erosive soil conditions indicate a lower design velocity is desirable, or unless erosion protection is provided, the maximum allowable velocity shall be five (5) feet per second.

(h) *Outfall ditch grades.*

- (1) *Minimum.* The minimum required to provide for design flow.
- (2) *Maximum.* Unless unstable or highly erosive soil conditions indicate a flatter slope is desirable, or unless otherwise authorized by the city, the maximum allowable grade will be that which will produce a velocity of five (5) feet per second.
- (3) *Ditch protection.* Unless otherwise approved by the city, the following minimum requirements shall be provided:

<i>Ditch grade</i>	<i>Protection required</i>
0.1 to 1.0 percent	Grassing and mulching
1.0 to 2.0 percent	Sodding

or right-of-way conforming substantially with the line of such watercourse and of such further width or construction or both as will be adequate for the purpose.

(Code 1967, § 742-19)

Sec. 8-10. Exceptions.

(a) Where local conditions mandate a deviation from the foregoing specifications, standards or approved plans, such deviations must be approved by the project engineer and the city inspector before the developer can proceed with construction of the project.

(b) Where local conditions prevent compliance with the approved plans and specifications the proposed remedy as to work, service, material, and specifications must be approved by the project engineer and the city inspector before such remedy is implemented. The project shall not be accepted by the city unless such approval is given. (Code 1967, § 742-20)

Secs. 8-11—8-29. Reserved.

ARTICLE II. USE AND CONTROL OF DRAINAGE SYSTEM

Sec. 8-30. Purpose and intent.

It is the purpose of the provisions of article II of this chapter to provide for the use and control of the city stormwater drainage system so as to meet the intended purpose of complying with mandated federal and state law and regulations applicable to the system.

(Ord. No. 93-2, § II, 6-28-93)

Sec. 8-31. Definitions.

[For the purposes of this article, the following words and phrases shall have the meanings respectively ascribed to them by this section:]

Authorized official means the city manager, the public works director and city employees designated in writing by the city manager to administer one (1) or more of the provisions of this article.

Director means the director of public works.

Discharge means entry into the city drainage system of any solid, liquid or gaseous matter.

Person means any one (1) or more of the following, to wit: Any natural individual, legal entity, partnership or association of any one (1) or more of the foregoing.

Site of industrial activity means any area or facility used for manufacturing, processing or storage or any combination thereof of any products as defined in 40 Code of Federal Regulations (CFR), Section 122.26(a)(14), as amended.

Stormwater means any runoff and drainage, or either of them, of surface waters into the drainage system.

Stormwater system means that portion of the drainage system consisting of each part of it used for the collecting, conveying, storing, transporting, treating and discharging stormwater. (Ord. No. 93-2, § II, 6-28-93)

Sec. 8-32. Pollutant quality control.

The authorized official, upon written request of the director, may impose, in writing, reasonable limitations as to the quality of stormwater discharged into the stormwater system from sites of industrial activity.

(Ord. No. 93-2, § II, 6-28-93)

Sec. 8-33. NPDES permits.

Any person who holds a national pollutant discharge elimination system (NPDES) permit authorizing discharge of stormwater into the stormwater system shall provide a copy of such permit to the director not later than the later of sixty (60) calendar days from the effective date of this article or sixty (60) calendar days after the issue date of the permit. The director shall keep all such copies in a separate file.

(Ord. No. 93-2, § II, 6-28-93)

Sec. 8-34. Monitoring; authority.

The authorized official may establish, at the point or points of discharge, from any property in the city to the stormwater system such devices as the authorized official deems appropriate to determine the quality and quantity of discharges to

permit imposed by this article, any applicable statute, ordinance, rule or regulation referred to in this article or any combination of the foregoing. (Ord. No. 93-2, § II, 6-28-93)

Sec. 8-39. Penalties.

In addition to the penalties provided in and the provisions of section 1-10 of the City Code, the city, for violation of any of the provisions of this article may use any one (1) or combination of the following:

- (1) Submit the matter to the code enforcement board for enforcement as provided in division 3, [article V], chapter 2 of the Code of Ordinances; and
- (2) The city may seek and utilize any administrative equitable and legal remedies available through any forum having jurisdiction.
- (3) Take such emergency action as may be appropriate to protect persons from imminent peril or injury.

(Ord. No. 93-2, § II, 6-28-93)

Sec. 8-40. Exemptions.

Discharge of materials to the stormwater system are exempt from the requirements of this article under the following conditions:

- (1) Municipal water line flushing.
- (2) Flows from firefighting activities.
- (3) Potable water discharges.
- (4) Home, landscape irrigation and lawn watering discharges.
- (5) Direct infiltration to the stormwater system.
- (6) Rising groundwaters.
- (7) Air conditioning condensation.
- (8) Domestic water well discharges.
- (9) Discharges from residential use of potable water such as motor vehicle washing, pet washing, window cleaning, sidewalk and driveway flushing and similar domestic activities.

- (10) De-chlorinated swimming pool contributions.
- (11) Discharges occasioned by reason of water or sewer main ruptures.
- (12) Effluent discharges where the effluent quality complies with all applicable federal, state and municipal statutes, ordinances, rules and regulations pertaining to the discharge of water to surface waters.

(Ord. No. 93-2, § II, 6-28-93)

Sec. 8-41. Application.

This article shall apply to all discharges to the stormwater system of the city.

(Ord. No. 93-2, § II, 6-28-93)