

**COLLIER COUNTY  
GROWTH MANAGEMENT PLAN**

**PUBLIC FACILITIES ELEMENT  
Drainage Sub-Element**

Prepared for  
**COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS**  
Adopted, October 1997

**AMENDMENTS TO COLLIER COUNTY GROWTH MANAGEMENT PLAN  
PUBLIC FACILITIES ELEMENT  
DRAINAGE SUB-ELEMENT**

<b>Symbol</b>	<b>Date Amended</b>	<b>Ordinance No.</b>
**	May 9, 2000	**Ordinance No. 2000-25
***	May 9, 2000	***Ordinance No. 2000-26
(I)	May 9, 2000	Ordinance No. 2000-27
(II)	January 25, 2007	****Ordinance No. 2007-11

\*\*\*\* Based on 2004 EAR, Evaluation and Appraisal Report

\*\*\* Ordinance No. 2000-26, amended Ordinance No. 89-05, as amended, the Collier County Growth Management Plan, having the effect of rescinding certain EAR-based (1996 EAR) objectives and policies at issue in Administration Commission Case No. ACC-99-02 (DOAH Case No. 98-0324GM), more specifically portions of the Intergovernmental Coordination Element (Ord. No. 98-56), Natural Groundwater Aquifer Recharge Element (Ord. No. 97-59) and Drainage (Ord. No. 97-61) sub-elements of the Public Facilities Element, Housing Element (Ord. No. 97-63), Golden Gate Area Master Plan (Ord. No. 97-64), Conservation and Coastal Management Element (Ord. No. 97-66), and the Future Land Use Element and Future Land Use Map (Ord. No. 97-67); and re-adopts Policy 2.2.3 of the Golden Gate Area Master Plan.

\*\* Ordinance No. 2000-25, rescinded and repealed in its entirety Collier County Ordinance No. 99-63, which had the effect of rescinding certain EAR-based (1996 EAR) objectives and policies at issue in Administration Commission Case No. ACC-99-02 (DOAH Case No. 98-0324GM).

\* Indicates adopted portions

Note: the support document will be updated as current information becomes available.

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**\*INDICATES ADOPTED PORTIONS**

## **I. INTRODUCTION**

- (II)** This portion of the Collier County Growth Management Plan inventories both the natural conditions and stormwater management activities within unincorporated Collier County. In Collier County, there are two (2) primary service providers with regard to the provision of stormwater management services. The County's Transportation Services Division maintains drainage systems associated with County and State Roadways as well as the Secondary Drainage System. The Big Cypress Basin Board, an arm of the South Florida Water Management District (SFWMD), maintains the larger, regional surface water management systems within Collier County. The regional drainage system is also referred to as the Primary Drainage System.
- (II)** However, management of stormwater is concerned not only with flood prevention (a quantity issue), but also with the removal of various pollutants picked up by the stormwater as it flows across the County's developed land areas (a quality issue). Such pollutants can include oils, greases, heavy metals, pesticides, fertilizers and other substances, which can have a deleterious impact on the County's natural systems and, above all, its groundwater quality. Note that, in this respect, there is overlap in the intended purpose between the Drainage and Natural Groundwater Aquifer Recharge Sub-elements: both seek to protect aquifer recharge areas. However, the emphasis of the Drainage Sub-element is on surface water protection, whereas the emphasis of the Natural Groundwater Aquifer Recharge Sub-element is on groundwater protection.
- (II)** The term "stormwater management" refers to a set of comprehensive strategies for dealing with both stormwater quantity and stormwater quality issues. The primary component of these strategies is the need to ensure that the volume, rate, timing and pollutant load of stormwater runoff after development is similar to that which occurred prior to development. To accomplish this task, stormwater management entities employ a combination of structural and non-structural techniques. Non-structural techniques emphasize preservation or restoration of natural drainage features to promote infiltration, filtering and slowing of runoff. Structural techniques include the variety of manmade channels and control structures maintained within the primary and secondary drainage systems. The objective of stormwater management is to develop a combination of techniques which provide for adequate pollutant removal and flood protection in the most economical manner.
- (II)** One of the key principles of current stormwater management techniques is recognition of the need for basin-wide (or watershed basin) planning. The stormwater management system has to be designed so as to ensure that the final outlet point has adequate capacity to handle all discharges from the upstream portion of the watershed under conditions present at the time of design. Subsequent development upstream must then utilize stormwater management techniques and systems, which will maintain predevelopment run-off conditions so that the capacity of the downstream portion of the watershed is not exceeded. In this respect, there is an overlap between the intended purpose of the Drainage Sub-element and Goal 2 of the Conservation and Coastal Management Element, including the Watershed Management Plans discussed under Objective 2.1 of the CCME.

**GOAL, OBJECTIVES AND POLICIES  
DRAINAGE SUB-ELEMENT**

- (II) GOAL:**  
**COLLIER COUNTY SHALL PROVIDE DRAINAGE AND FLOOD PROTECTION FOR EXISTING AND FUTURE DEVELOPMENT, MINIMIZE THE DEGRADATION OF QUALITY OF RECEIVING WATERS AND SURROUNDING NATURAL AREAS AND PROTECT THE FUNCTIONS OF NATURAL GROUNDWATER AQUIFER RECHARGE AREAS.**
- (II) OBJECTIVE 1 (CAPITAL FACILITY PLANNING FOR DRAINAGE SYSTEMS):**  
The County shall utilize the Annual Update and Inventory Report on Public Facilities (AUIR) process to update the Drainage Atlas Maps and Channel/Structure Inventory components of the adopted Water Management Master Plan and to verify the existing watershed basin boundaries within Collier County. The County will also verify the design storm capacity of the drainage facilities within each basin, and determine the costs necessary to maintain the facility capacities to selected design storm standards. This information shall be used to program operational funds in the Annual County Budget and to identify necessary capital projects and basin studies in the Annual Capital Improvement Element Update and Amendment.
- (II) Policy 1.1:**  
The County shall update and revise stormwater management maintenance procedures and capital projects based on continual facilities performance monitoring activities. Consideration will be given to natural systems as identified in Policy 2.1.4 of the Conservation and Coastal Management Element, existing developments and proposed developments.
- (II) Policy 1.2:**  
County drainage system capital facility planning shall be designed to implement procedures and projects in a manner to ensure that adequate stormwater management facility capacity is available at the time a development permit is issued, or that such capacity will be available when needed to serve the development.
- (II) Policy 1.3:**  
The County shall continue to develop public drainage facilities, which maintain the groundwater table as a source of recharge for the County's potable water aquifers, provide a source of irrigation water for agricultural, horticultural and golf course operations and provide water to native vegetation.
- (II) Policy 1.4:**  
The County shall continue to evaluate structural and non-structural measures for restoring historical hydroperiods in impacted watersheds where possible and for reducing the impacts of canal and stormwater discharges to estuaries. Selected measures will be implemented through the watershed management planning process identified within Goal 2 of the Conservation and Coastal Management Element of the Growth Management Plan.
- (II) Policy 1.5:**  
Watershed Management Plans will be undertaken as set forth in Objective 2.1 of the Conservation and Coastal Management Element (CCME). After each plan is completed, the results will be made available to the property owners located within the basin's boundaries for their use in petitioning the Board of County Commissioners to create a taxing/assessment

unit to fund the proposed implementation of the plan's recommendations. Until the Watershed Management Plans are completed, the County shall apply the interim standards for development as contained in CCME Objective 2.1.

**(II) OBJECTIVE 2:**

The County shall maintain adopted drainage level of service standards for basins and sub-basins identified in the Water Management Master Plan. Maintenance of the drainage level of service (LOS) identified for each basin will be implemented through the watershed management planning process identified within Goal 2 of the Conservation and Coastal Management Element of this Growth Management Plan.

**(II) Policy 2.1:**

The following levels of service for drainage are hereby adopted for the purpose of issuing development permits. Upon completion of each associated Watershed Management Plan, the level of service will be modified, if warranted.

- A. Future "private" developments - water quantity and quality standards as specified in Collier County Ordinance Numbers 74-50, 90-10 and 2001-27, and Land Development Code Ordinance Number 2004-41, as amended.
- B. Existing "private" developments and existing or future public drainage facilities - those existing Levels of Service identified (by design storm return frequency event) by the completed Water Management Master Plan as follows:

**LEVELS OF SERVICE ATTAINED BY BASINS**

<b>BASIN</b>	<b>LEVEL OF SERVICE</b>
<b>MAIN GOLDEN GATE SYSTEM</b>	
Main Golden Gate Canal Basin	D
Cypress Canal Basin	D
Harvey Canal Basin	D
I-75 Canal Basin	D
Green Canal Basin	C
Airport Road Canal South Basin	D
Corkscrew Canal Basin	D
Orange Tree Canal Basin	D
951 Canal Central Basin	C
<b>DISTRICT NO. 6 SYSTEM</b>	
Rock Creek Basin	D
C-4 Canal Basin	C
Lely Main Canal Basin	D
Lely Canal Branch Basin	D
Lely Manor Canal Basin	D
Haldeman Creek Basin	D
Winter Park Outlet Basin	D
<b>COCOHATCHEE RIVER SYSTEM</b>	
Cocohatchee River Basin	D
Pine Ridge Canal Basin	C
Palm River Canal Basin	D
West Branch Cocohatchee River Basin	C
East Branch Cocohatchee River Basin	D
Airport Road Canal North Basin	D
951 Canal North Basin	D
<b>GORDON RIVER EXTENSION</b>	
Gordon River Extension Basin	D
Goodlette-Frank Road Ditch Basin	D
<b>HENDERSON CREEK BASIN</b>	
Henderson Creek Basin	D

**LEVELS OF SERVICE ATTAINED BY BASINS**

**BASIN**

**LEVEL OF SERVICE**

**FAKA-UNION SYSTEM**

Faka-Union Canal Basin	D
Miller Canal Basin	D
Merritt Canal Basin	C
Prairie Canal Basin	C

**SOUTHERN COASTAL BASIN**

US-41 Outfall Swale No. 1 Basin	D
US-41 Outfall Swale No. 2 Basin	D
Seminole Park Outlet Basin	C

**BARRON RIVER SYSTEM**

Okaloacoochee Slough Basin	D
Barron River Canal North Basin	C
Urban Immokalee Basin	C

**MISCELLANEOUS INTERIOR WETLAND SYSTEMS**

Corkscrew Slough Basin	D
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**(II) Policy 2.2:**

The County's Water Management Master Plan shall include recommendations for changing Levels of Service together with an analysis of capital requirements.

**(II) OBJECTIVE 3:**

The County shall maintain and annually update a five-year schedule of capital improvements for water management facilities in conformance with the annual review process described within the Capital Improvement Element of the Growth Management Plan.

**(II) Policy 3.1:**

The County shall develop and maintain procedures to annually update water management facility demand and capacity information.

**(II) Policy 3.2:**

The County shall prepare annual summaries of capacity and demand information for each water management facility and service area.

**(II) Policy 3.3:**

Collier County shall evaluate and rank water management capital improvement projects in accordance with the priorities stated in the Capital Improvement Element of this plan.

**(II) Policy 3.4:**

County improvements to, and maintenance of, existing drainage facilities shall be a priority over new construction projects in the urban and estates designated areas (exclusive of Southern Golden Gate Estates).

**(II) OBJECTIVE 4:**

The County shall develop and maintain policies and programs to correct existing deficiencies and to provide for future facility needs in accordance with the annual work program referenced in the adopted Water Management Master Plan.

**(II) Policy 4.1:**

Water management projects shall be undertaken in accordance with the schedule provided in the Capital Improvements Element of this plan. These projects shall be undertaken in coordination with the Big Cypress Basin/South Florida Water Management District 5 Year Plan.

**(II) Policy 4.2:**

Collier County shall correct existing deficiencies and provide for future water management facility needs through the formulation and implementation of an annual work programs. In order to implement the annual work program, the County shall encourage the use of innovative funding mechanisms including, but not limited to special taxing or assessment districts.

**(II) Policy 4.3:**

The County shall develop and maintain a stormwater management public awareness program, which will include, but not necessarily be limited to, a Collier County Stormwater Management website. The primary purpose of this program shall be to provide information regarding the County's stormwater management programs to the general public including, but not limited to, the environmental enhancements that will result from the use of total water management concepts within the existing drainage network.

**(II) OBJECTIVE 5:**

The County shall continue to regulate land use and development in a manner that protects the functions of natural drainage features and natural groundwater aquifer recharge areas. Implementation of this Objective will be consistent with the Watershed Management Planning process identified within Goal 2 of the Conservation and Coastal Management Element of the Growth Management Plan, and with relevant provisions contained within the adopted Land Development Code (Ordinance Number 2004-41, as amended).

**(II) Policy 5.1:**

Collier County shall periodically review all appropriate Water Management Ordinances and regulations to determine their effectiveness in protecting the functions of natural drainage features and natural groundwater aquifer recharge areas.

**(II) Policy 5.2:**

Based upon the periodic review described in Policy 5.1, the County shall develop any appropriate new ordinances and regulations that are necessary to ensure protection of the functions of natural drainage features and natural groundwater aquifer recharge areas.

**(I)(II) OBJECTIVE 6:**

The County shall protect the functions of natural drainage features through the application of standards that address the quality and quantity of discharge from stormwater management systems. Implementation of this Objective will be consistent with the watershed management planning process identified within Goal 2 and Objective 2.1 of the Conservation and Coastal Management Element of the Growth Management Plan. This objective is made measurable through the following policies:



**(I)(II) Policy 6.1:**

Projects shall be designed and operated so that off-site discharges will meet State water quality standards, as set forth in Chapter 62-302.300, F.A.C., as it existed at the date of project approval.

**(I)(II) Policy 6.2:**

Collier County's retention and detention requirements shall be the same as those provided in the South Florida Water Management District's Basis of Review, as it existed at the time of project approval.

**(I)(II) Policy 6.3:**

Allowable off-site discharge rates shall be computed using a storm event of 3 day duration and 25 year return frequency. The allowable off-site discharge rates are as follows:

a. Airport Road North Sub-Basin (North of Vanderbilt Beach Road)	0.04 cfs/acre
b. Airport Road South Sub-basin (South of Vanderbilt Beach Road)	0.06 cfs/acre
c. Cocohatchee Canal Basin	0.04 cfs/acre
d. Lely Canal Basin	0.06 cfs/acre
e. Harvey Basin	0.055 cfs/acre
f. Wiggins Pass Basin	0.13 cfs/acre
g. All other areas	0.15 cfs/acre

The County may exempt projects from these allowable off-site discharge rates if any of the following applies:

1. The project is exempt from allowable off-site discharge limitations pursuant to Section 40E-400.315, FAC.
2. The project is part of an existing SFWMD permit, which allows discharge rates different than those listed above.
3. It can be documented that the project currently discharges off-site at a rate higher than those listed above. The documentation required for this purpose shall be prepared by a registered professional engineer, and will consist of an engineering study which utilizes the applicable criteria in the "SFWMD Basis of Review for Environmental Resource Permit Applications". The study shall be subject to review and approval by the County and SFWMD staff. The study shall include the following site-specific information:
  - a. Topography
  - b. Soil types and soil storage volume
  - c. Vegetation types
  - d. Antecedent conditions
  - e. Design rainfall hydrograph

- f. Depression storage capacity
- g. Receiving water hydrograph, and
- h. Other relevant hydrologic and hydraulic data.

Using the above information, a hydrologic and hydraulic model shall be developed which demonstrates the higher off-site discharge rate.