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## INFRASTRUCTURE - STORMWATER MANAGEMENT (SWM) GOALS, OBJECTIVES AND POLICIES

### PURPOSE

Stormwater management is “the planned control of surface runoff in natural and urban systems to prevent flooding and pollution” (*Model Local Government Stormwater Management Program*, DEP, 1993). The Stormwater Management section of the Infrastructure element guides Charlotte County’s existing stormwater management programs and provides a framework for future programs. Stormwater management is very important to the County because it controls surface runoff in the urban and rural environments to prevent flooding and water pollution. The development of land for human use through the construction of homes, structures, and other impervious surfaces tends to increase the volume and rate of runoff from storm events, and prevents water from seeping into the ground. The increase in stormwater runoff may result in flooding, soil erosion, and water pollution on a development site as well as downstream. A sound stormwater management program will reduce the damage caused to our environment from land development.

All references to any ordinances, statutes or regulations contained herein shall, unless otherwise noted, be deemed to be those in effect as of the date of adoption of this element and thereafter as amended, renumbered or otherwise revised.

### GOALS, OBJECTIVES AND POLICIES

#### SWM GOAL 1: STORMWATER MANAGEMENT

**Implement best management practices of both a structural and a non-structural nature to reduce the impact of stormwater on receiving water bodies.**

##### **SWM Objective 1.1: Master Stormwater Management Plan**

To implement the developed Master Stormwater Management Plan (MSMP) and implement the capital improvement projects identified as a result of the areas originally studied.

##### **SWM Policy 1.1.1: Implementation of MSMP**

The County shall program Phase II of the MSMP through its Capital Improvements Plan. Full implementation is anticipated to be completed by 2022. Basins that are less dependent on structural controls will be improved through the Primary Ditch Maintenance Program.

##### **SWM Policy 1.1.2: Construction and Maintenance**

The County shall employ a system of Municipal Services Benefit Units (MSBUs), Municipal Services Taxing Units (MSTUs), a stormwater utility, or other funding

mechanisms for stormwater management in order to fund the construction and maintenance of stormwater management infrastructure and associated lands.

**SWM Policy 1.1.3: Coordination**

The County Public Works Department and Growth Management Department, or their successors, shall coordinate in reviewing development plans to ensure consistency with the MSMP.

**SWM Policy 1.1.4: Prioritization**

The County shall establish the following prioritization in the maintenance of existing stormwater maintenance facilities and construction of new ones:

1. The reduction of flooding in buildings and structures;
2. The reduction of pollutants in impaired water bodies;
3. The reduction of flooding of highways;
4. The reduction of pollutants where studies show a statistically significant increase in pollutants;
5. The reduction of other types of flooding.

The priorities shall also reflect the Smart Growth Principles established in FLU Goal 1: Smart Growth Framework and the following Future Land Use element policies:

1. FLU Policy 1.2.3: Service Area Delineation
2. FLU Policy 1.2.4: Urban Service Area
3. FLU Policy 3.2.4: Limitation on the Extension of Urban Infrastructure
4. FLU Policy 4.1.8: Priority for the Provision of Urban Services

**SWM GOAL 2: LEVELS OF SERVICE**

**Ensure that stormwater management facilities are in place and available to serve all new development, whether provided by the County or by those creating the new development.**

**SWM Objective 2.1: Level of Service Standards**

To maintain the Stormwater Management System to meet or exceed the established Level of Service (LOS) standards, both quantitatively and qualitatively.

**SWM Policy 2.1.1: Flooding LOS Standards**

The County shall adopt the following flooding LOS standards for stormwater management:

1. New arterial roadways will be designed and constructed to remain flood-free in the 100-year rainfall event distributed in accordance with

methodologies approved by the appropriate Water Management District (WMD).

2. New and improved collector roadways will be designed and constructed to enable not less than one lane of traffic in each direction above the design high water elevation resulting from a 25-year frequency, 24-hour duration rainfall event distributed in accordance with methodologies approved by the appropriate WMD.
3. New local roads will be designed and constructed with the pavement centerline at or above the design high water elevation resulting from a 5-year, 24-hour rainfall event distributed in accordance with methodologies approved by the appropriate WMD.
4. New parking facilities may be designed and constructed with a maximum temporary detention depth of nine inches distributed in accordance with methodologies approved by the appropriate WMD.
5. Stormwater management facilities for structures in all new subdivisions will manage stormwater resulting from a 25-year frequency, 24-hour rainfall event distributed in accordance with methodologies approved by the appropriate WMD by either providing individual on-site facilities or a central facility or facilities.
6. All new development on existing platted lots (except single-family, duplex, and triplex dwelling units that are not part of a larger, common project) is required to provide on-site stormwater management for runoff resulting from a 25-year, 24-hour rainfall event distributed in accordance with methodologies approved by the appropriate WMD.

**SWM Policy 2.1.2: Water Quality LOS Standards**

The County shall adopt the following water quality LOS standards for stormwater management:

1. No discharge from any stormwater management facility shall cause or contribute to a violation of water quality standards in waters of the State as provided for in Federal law, State statute, or County ordinance. Water quality LOS shall be set consistent with the protection of health, safety, and welfare and natural resources functions and values.
  - a. All stormwater systems for new development and redevelopment shall include features to minimize pollution from oil, suspended solids, nutrients, and other objectionable materials prior to discharge into natural systems. Such features shall be designed to treat the runoff resulting from the first one inch of rainfall or the first 1.5 inches in the case of projects discharging into an Outstanding Florida Water body. Stormwater systems shall include additional measures to reduce floating and suspended solids to a minimum. Higher design criteria for water treatment shall apply if such criteria

are necessary to meet and maintain the LOS or to protect water bodies (such as potable surface waters, impaired waters, or Outstanding Florida Waters) which require higher levels of protection. The higher design criteria shall be based on a treatment system which treats 1.5 times the volume required for the selected treatment system or equivalent.

- b. New development and redevelopment shall provide mitigation measures and best management practices to control pollutants specific to the pollutant characteristics of the proposed land use consisting of such measures and practices that have been shown to be effective in controlling the specific pollutants characteristic of the type of new development.
  - c. Mitigation measures and best management practices relating to drainage shall be taken during construction activities to ensure that water quality is not degraded during the land clearing and construction or development. No cutting, clearing, grading, or filling shall be accomplished on any site under development unless appropriate devices have been installed to minimize pollution from objectionable materials, to control erosion, and to remove sediment from surface water runoff. Appropriate techniques shall also be used to stabilize and revegetate disturbed land upon completion of the project.
2. New and existing industrial activities (as defined in the National Pollutant Discharge Elimination System regulations for stormwater) shall develop and implement a Storm Water Pollution Prevention Plan (SW3P) for such activity as required by any FDEP permit process.
  3. Enrollment in the Florida Department of Agriculture and Consumer Services Best Management Practices and participation in the Southwest Florida Water Management District's (SWFWMD) Facilitating Agricultural Resource Management Systems (FARMS) program shall be encouraged for all agricultural land uses.

**SWM Policy 2.1.3: Concurrency**

The County shall require that the necessary stormwater management facilities and services are in place and available to serve any new development prior to issuance of a certificate of occupancy, or that they are guaranteed to be in place and available by an enforceable development agreement before any development order or permit will be issued.

**SWM Objective 2.2: Funding**

To fund and implement the Stormwater Management Program in order to achieve the objectives set forth herein.

**SWM Policy 2.2.1: Funding Sources**

The County shall fund its Stormwater Management Program in a manner consistent with SWM Policy 1.1.2.

**SWM Policy 2.2.2: Assessments**

The County shall establish a funding mechanism for property subject to the Stormwater Management Program that may be based on the Equivalent Residential Connection (ERC) or similar measure.

**SWM Policy 2.2.3: Evaluation**

The County shall evaluate the MSBUs and MSTUs for the purpose of funding the acquisition of required drainage easements and bonds for required stormwater management improvements within each basin.

**SWM Policy 2.2.4: Capital Projects Identification**

The County shall identify projects for the Capital Improvements Plan on the basis of correcting existing deficiencies and meeting future demands.

**SWM Policy 2.2.5: Capital Improvements Prioritization**

The County's Capital Improvements Coordinating Committees shall evaluate and rank proposed stormwater management capital improvements projects using the priorities established in SWM Policy 1.1.4.

**SWM GOAL 3: STORMWATER RUNOFF**

**Minimize the degradation of water quality through proper stormwater management.**

**SWM Objective 3.1: Regulation**

To establish and identify a system of regulation at the Federal, State, and County levels that minimizes the degradation of water quality resulting from stormwater runoff.

**SWM Policy 3.1.1: Water Management District Coordination**

The County shall coordinate with the applicable WMD to apply proper stormwater management techniques to new developments. The appropriate WMD will inspect new facilities prior to the transfer of a permit to the Operation and Maintenance Phase as provided by law (Chapter 62-330, F.A.C.).

**SWM Policy 3.1.2: Compliance with Regulations**

The County shall require all stormwater management facilities to be built in accordance with all applicable local, regional, State, and Federal standards.

**SWM Policy 3.1.3: NPDES Requirements**

The County shall meet or exceed all requirements of the National Pollution Discharge and Elimination System (NPDES) (USEPA s. 402 of the Clean Water Act, Pub. L. No. 92-500 and 33 USC ss. 1251 et seq.).

**SWM Policy 3.1.4: Design and Performance Standards**

The County shall require all stormwater management facilities which discharge into waters of the State, including wetlands, to meet or exceed, where possible, the design and performance standards specified in Chapters 62-330 and 62-4, F.A.C.

**SWM Policy 3.1.5: Pollution Abatement**

The County shall adopt the water quality standards of Chapter 62-330, F.A.C. Pollution abatement shall be accomplished by requiring stormwater management systems in accordance with the requirements of that chapter, as amended.

**SWM Policy 3.1.6: Best Management Practices**

The County shall require the implementation of structural and non-structural Best Management Practices as established in the *Urban Runoff Pollution Prevention and Control Planning Handbook*, prepared by the U.S. Environmental Protection Agency (EPA/625/R-93/004), in the construction of all stormwater management facilities for new development, or for the upgrading of the existing infrastructure.

**SWM Policy 3.1.7: Nutrient Pollution and Fertilizer Management**

The County shall reduce fertilizer use in the Urban Service Area and implement best management practices through its fertilizer management ordinance.

**SWM Objective 3.2: Facilities**

To manage and maintain stormwater management facilities to minimize the degradation of water quality resulting from stormwater runoff.

**SWM Policy 3.2.1: Combination of Practices**

In partnership with the WMDs, the County shall encourage developers and property owners to provide a variety of stormwater management and low impact development practices, so that each practice will provide incremental benefits, and when combined all practices will:

1. Preserve existing site assets;
2. Minimize and control stormwater runoff at the source;
3. Promote infiltration of stormwater runoff;
4. Promote stormwater reuse;
5. Minimize site disturbance.

**SWM Policy 3.2.2: Facilities on County-owned Lands**

The County shall be responsible for construction, inspection, and maintenance of stormwater management facilities located on County-owned land.

**SWM Policy 3.2.3: Facilities Dedicated to Charlotte County**

The County shall maintain stormwater management facilities constructed by others after they are built, operational, dedicated, and have been accepted by the County.

**SWM Policy 3.2.4: Easements**

The County shall require that all new stormwater management facilities and conveyances that drain public infrastructure shall have easements to enable maintenance around culverts, storm drains, and other enclosed conduit drainage systems.

**SWM Policy 3.2.5: Replacement of Existing Facilities**

The County shall require all improvements for the replacement, expansion, or increase in capacity of stormwater management facilities will meet or exceed the level of service standards described in SWM Policy 2.1.1 and SWM Policy 2.1.2.

**SWM Policy 3.2.6: No Net Change in Runoff**

The County shall require that the post-development runoff rate shall not exceed the pre-development runoff rate for all new development, except single-family, duplexes and triplexes, or unless applicable permits issued in accordance with State or local regulations provide otherwise.

**SWM Objective 3.3: Low Impact Development and Green Infrastructure**

To achieve long-term benefits such as improved water quality, improved air quality, improved groundwater infiltration and recharge, increased water storage, expanded wildlife habitat, expanded recreational opportunities and visual relief within the urban environment by incorporating low impact development design criteria and green infrastructure as part of the stormwater management system.

**SWM Policy 3.3.1: Low Impact Development Effort**

The County, in partnership with other government, non-profit, and private entities, shall seek grant funding to establish a Low Impact Development (LID) research and training facility to clarify best local area practices and to educate the public and the development community about sustainable site development best management practices.

**SWM Policy 3.3.2: Low Impact Development Research**

Prior to development of a full-scale LID research and training facility, the County shall establish an LID library and LID advocacy group that will arrange training from

the Southwest Florida Water Management District, and others, that will be responsible for developing and maintaining the LID research and training facility.

**SWM Policy 3.3.3: Low Impact Development Design Criteria**

The County shall incorporate LID design criteria, best management practices (BMPs), and stormwater credits into its Code of Laws and Ordinances and capital projects practices within one year of the effective date of this comprehensive plan, and in coordination with State and WMD initiatives.

Pre-design BMPs may include but are not limited to:

1. Tree, topographical, soil, and wildlife surveys;
2. The provision and preservation of native landscaping and natural water flows;
3. Narrow road designs;
4. The preservation of natural depressions;
5. The conservation of existing vegetation and resulting habitats.

Post-design BMPs may include but are not limited to:

1. Bioretention areas, biofilters, and rain gardens;
2. Bioswales or grassed and vegetated swales;
3. Dry wells;
4. Filter buffer strips;
5. Green infrastructure;
6. Green roofs or vegetated roofs;
7. Infiltration trenches;
8. Inlet pollution removal devices;
9. Native landscaping;
10. Permeable or porous pavement and pavers;
11. Rain barrels and cisterns;
12. Soil amendments or soil augmentation;
13. Stormwater planters;
14. Tree planting and tree preservation;
15. Tree box filters;
16. Vegetated buffers;
17. Wetland restoration.

**SWM Policy 3.3.4: Best Management Practices**

The County shall encourage new development and redevelopment to design stormwater management systems to incorporate BMPs including, but not limited to, filtration marshes, grassed swales planted with native vegetation,

retention/detention lakes with enlarged littoral zones, upland buffers, preserved or restored wetlands, and meandering flowways.

**SWM Policy 3.3.5: Wetlands in Stormwater Management Systems**

The County shall allow new development and redevelopment to incorporate existing wetland systems in the design of stormwater management systems for polishing treated stormwater that meets BMPs established by WMDs and the criteria of ENV Policy 3.1.5 (9), provided that the stormwater management systems have been approved in their design by the appropriate governmental agencies.

**SWM Policy 3.3.6: Protection of Unaltered Drainage**

The County shall ensure, whenever possible, that relatively unaltered drainage features are protected from the disruption of natural hydroperiods, flows, and water quality by construction activities.

**SWM Policy 3.3.7: Existing Natural Flowways**

The County shall encourage the preservation of existing natural flowways and encourage the restoration of historic natural flowways and historic watershed boundaries.

**SWM Objective 3.4: Regional Stormwater Management Facilities**

To allow regional stormwater management facilities in order to supplement substandard stormwater management facilities.

**SWM Policy 3.4.1: Natural Features in Stormwater Management Facilities**

The County shall minimize the conversion of land while ensuring adequate stormwater management. This may include allowing for the inclusion of existing wetlands, flowways, and other natural features in stormwater management facilities as much as possible.

**SWM Policy 3.4.2: Public Regional Facilities**

The County shall pursue developing regional stormwater management facilities, including those that could take the place of site-specific attenuation facilities. The County may require contributions by development toward funding the facilities when used in lieu of construction of onsite private facilities. When utilized in lieu of private facilities, water quality pre-treatment facilities should be located onsite to promote source control of pollutants as part of an initial treatment train before they enter the County stormwater management system.

Public Regional SWM Facilities should incorporate native land, including uplands, and allow for the inclusion of existing wetlands, flowways, and other natural features as much as possible for final polishing. Such public facilities should take advantage of other public values including recreation and education.

**SWM Policy 3.4.3: Private Regional Facilities**

The County shall encourage private landowners to enter into agreements to provide regional stormwater management facilities, including those that could take the place of site-specific attenuation facilities. Water quality pre-treatment facilities should be located onsite to promote source control of pollutants before they enter the regional stormwater management system.

**SWM GOAL 4: WATER QUALITY MONITORING**

**To support and encourage continued fixed station and probabilistic stratified random water quality monitoring of major surface water bodies by Federal, State, regional, and local agencies.**

**SWM Objective 4.1: Fixed Station Water Quality Monitoring**

To support and cooperate with Federal, State, regional, and local agencies in fixed station monitoring of water quality to help determine water quality status and trends.

**SWM Policy 4.1.1: Fixed Station Water Quality Monitoring and Analysis**

The County shall continue to assist Federal, State, regional, and local agencies that provide fixed station and on-site monitoring of water quality. Further, the County shall participate with the Charlotte Harbor National Estuary Program and its triennial Water Quality Status and Trends analysis.

**SWM Policy 4.1.2: Reporting**

The County shall coordinate and partner with the Charlotte Harbor National Estuary Program on an as-needed basis to update the Board of County Commissioners on issues related to water quality.

**SWM Objective 4.2: Coastal Charlotte Harbor Monitoring Network**

As funding permits, continue to participate in the Coastal Charlotte Harbor Monitoring Network (CCHMN) and monitoring with other local governments and agencies.

**SWM Policy 4.2.1: CCHMN Data Collection**

As funding permits, the County shall advocate continuation of CCHMN data collection efforts by SWFWMD.

**SWM Policy 4.2.2: Charlotte County Commitments**

As funding permits, the County shall continue all existing commitments toward CCHMN data collection.

**SWM GOAL 5: FEMA AND FLOODPLAIN MANAGEMENT**

**Maintain Federal Emergency Management Agency (FEMA) floodplain management requirements and manage development within the 100-year, 1% chance floodplain.**

**SWM Objective 5.1: FEMA Certification**

To maintain certification under the Community Rating System (CRS) administered by FEMA.

**SWM Policy 5.1.1: Maintenance of Rating**

The County shall continue to implement stormwater management activities in order to maintain the County's Class 6 rating by the Community Rating System (*Federal Emergency Management Agency, National Flood Insurance Program Community Rating System Coordinators Manual, FAI-15/2017*) and shall strive to improve that rating to a Class 4.

**SWM Objective 5.2: 100-Year, 1% Chance Floodplain Management**

To manage development within the FEMA 100-year floodplain.

**SWM Policy 5.2.1: Development within the 100-Year, 1% Chance Floodplain**

The County shall require all new residential or commercial development located within the FEMA 100-year, 1% chance flood hazard zone to be constructed to a minimum of 1' above the base flood elevation, as required by the Florida Building Code, and as established by FEMA Flood Insurance Rate Maps.

**SWM Policy 5.2.2: Standing with FEMA**

The County shall require that all new development located within the 100-year, 1% chance floodplain should be in good standing with FEMA floodplain management requirements.