

# STORMWATER MANAGEMENT ELEMENT



**ALACHUA COUNTY COMPREHENSIVE PLAN 2019-2040**



## GOAL 1

PROTECT NATURAL DRAINAGE FEATURES AND THE QUALITY OF WATERS AND PROTECT NEW AND EXISTING DEVELOPMENTS IN ACCORDANCE WITH ADOPTED LEVELS OF SERVICE FOR FLOODPLAIN MANAGEMENT, WATER QUANTITY AND WATER QUALITY.

### OBJECTIVE 1.1

Maintain an inventory and evaluation of new and existing County and privately owned/maintained stormwater management facilities.

**Policy 1.1.1** The current inventory program for County owned/maintained stormwater management facilities shall be expanded to include privately owned/maintained facilities as a part of the National Pollution Discharge Elimination System (NPDES), Phase II permit that must be obtained from the United States Environmental Protection Agency (EPA). The County shall develop a rating system for the evaluation of all stormwater management facilities. The criteria shall include the information needed for the acquisition of the NPDES, Phase II permit. All existing facilities shall be completely inventoried and re-evaluated with the new rating criteria within the five-year planning period. All new facilities shall be immediately incorporated into the inventory program utilizing the new rating system.

**Policy 1.1.2** Improvements to deficient County-maintained facilities as determined by the rating system that are identified in the future will be scheduled in the Capital Improvements Program provided a funding source has been established.

### OBJECTIVE 2.1

Deficient stormwater management and drainage facilities will be upgraded in accordance with Chapter 62-25 F.A.C and federal, state, regional, water management districts (WMD) and local regulations in effect on the date of adoption of this Comprehensive Plan to an acceptable level of service to prevent violations of water quality standards.

**Policy 2.1.1** No development order shall be issued for new development which would result in an increase in demand on deficient facilities unless one of the following criteria are met:

- (a) The necessary facilities are under construction at the time a development permit is issued and will be completed when the impacts of development occur; or
- (b) The necessary facilities are guaranteed in an enforceable development agreement that includes the provisions set forth in Policy 1.3.2(a) of the [Capital Improvements Element](#); or
- (c) The development is limited to pre-development contributions to the capacity of the existing facility in cases where upgrading of existing facilities would create adverse stormwater impacts to adjacent or downstream properties.

**Policy 2.1.2** Alachua County shall pursue revenue sources, including state and federal funding, for correcting deficiencies in stormwater management facilities and for designing, constructing and operating regional master stormwater management facilities.

**Policy 2.1.3** Priorities for correcting volume and water quality deficiencies in existing County-maintained stormwater management systems shall be scheduled in the Capital Improvements Program in accordance with the criteria established in the [Capital Improvements Element](#) of this plan.

**OBJECTIVE 3.1**

Coordinate improvements to the stormwater management system which serve new or future needs with the [Future Land Use Map](#) and level of service standards as adopted in this plan.

**Policy 3.1.1** To ensure water quality and flood protection, new development shall provide facilities designed to control and treat stormwater runoff at the following levels of service:

**LEVELS OF SERVICE**

**Floodplain Management**

All new building lots shall include adequate buildable area above the 100-year floodplain and all new habitable structures must be outside the floodplain. Existing lots of record as of May 2, 2005, without buildable area above the floodplain may only develop subject to limitations such as intensity, impervious surface ratio (ISR), clearing, limits on the use of fill material and requirement for appropriate on-site sewage disposal. No development shall adversely impact the functions of the floodplain. Silviculture and agricultural uses shall be required to follow appropriate Best Management Practices.)

<u>Facility</u>	<u>Level of Service</u>
Residential floor elevation .....	1 foot above the 100 year/ critical-duration storm elevation
Non-residential floor elevation .....	1 foot above 100 year/ critical-duration storm elevation or flood resistant construction

**Water Quantity**

Retention basins.....	100 year/ critical-duration storm or applicable Water Management District standards
Detention basins.....	25 year/critical-duration storm with 100 year/critical-duration storm routing analysis
Storm sewer systems.....	3 year/10 minute

Crossdrains.....	10/25 year/24hr. storm for closed system 100 Year/24hr. for open system
Sidedrains.....	10 year/20 minute

**Water Quality**

All new development, redevelopment, and, when expansion occurs, existing developed areas, must provide adequate stormwater treatment so as not to degrade the water quality of the receiving water body. Infill residential development within improved residential areas or subdivisions existing prior to the adoption of this Comprehensive Plan, must ensure that its post-development stormwater runoff will not contribute pollutants which will degrade the water quality of the watershed. Regardless of the area served, the stormwater treatment provided must provide a level of treatment which meets or exceeds Chapter 62-25 F.A.C. and applicable federal, state, regional, WMD and local requirements in effect on the date of adoption, April 8, 2002 of this Comprehensive Plan. The County shall implement an Advanced Stormwater Treatment Code based on Low Impact Design (LID) principles, including provisions for the Sensitive Karst Area, Outstanding Florida Waters and impaired waters.

**Policy 3.1.2** Stormwater management facilities for new development shall be provided concurrent with the impacts of such development as part of the County's Concurrency Management Program.

**Policy 3.1.3** The County shall consider the use of regional master stormwater management plans.

**Policy 3.1.4** Upon receipt of new Flood Insurance Rate Maps, the County will review and update the [Future Land Use Map](#) and adopted level of service standards. The County will provide assistance to the maximum extent practicable, in application for Letters of Map Revision or Letters of Map Amendments solicited from the Federal Emergency Management Agency.

**OBJECTIVE 4.1**

The County shall continue to maintain and improve existing stormwater management facilities in order to maximize their capacity and lifespan and to ensure that discharges do not violate State water quality standards.

**Policy 4.1.1** The Public Works Department shall have a preventive maintenance program for stormwater management facilities to maximize the efficiency of existing structures.

**Policy 4.1.2** The County shall amend its development regulations to ensure periodic inspection and routine maintenance of privately owned community stormwater management facilities. The County shall coordinate inspections of privately owned stormwater management facilities with the appropriate water management district to avoid duplication of inspections. The County shall investigate and implement, if determined to be financially-feasible, appropriate design techniques and maintenance strategies to minimize mosquito propagation.

## **OBJECTIVE 5.1**

Alachua County will ensure the protection of natural drainage features, including surface water quality and groundwater aquifer quality and quantity recharge functions, from stormwater runoff.

- Policy 5.1.1** All development outside a regional master plan shall control post-development runoff rates and/or volumes to not exceed pre-development runoff rates and/or volumes.
- Policy 5.1.2** Stormwater runoff from development shall not adversely impact stormwater storage capacity of adjacent lands, identified conservation areas, or downstream surface waters or groundwaters.
- Policy 5.1.3** All new development, redevelopment, and, when expansion occurs, existing developed areas with a stormwater discharge to sinkhole or within a stream to sink watershed shall provide a minimum treatment of the runoff from the first two (2) inches of rainfall from the design storm.
- Policy 5.1.4** All new development, redevelopment, and, when expansion occurs, existing developed areas located within the Sensitive Karst Areas shall provide treatment of the stormwater through the use of Low Impact Design Best Management Practices before it enters the Floridan Aquifer.
- Policy 5.1.5** New stormwater management systems which receive stormwater from areas which are a potential source of oil and grease contamination shall include a baffle, skimmer, grease trap, pre-treatment basin or other mechanism suitable for preventing oil and grease from leaving the stormwater management system in concentrations that would cause violations of water quality standards in the groundwater or receiving waters.
- Policy 5.1.6** Conserve and enhance through the use of system upgrades the use of drainageways where appropriate as habitat corridors which allow the passage of wildlife between natural areas and throughout the County, as well as providing wildlife habitat.
- Policy 5.1.7** Conserve and enhance the use of floodplains where appropriate for flood and erosion control.
- Policy 5.1.8** Alachua County shall require stormwater management facilities be designed in accordance with the Stormwater Management and Landscaping Policies of the Metropolitan Transportation Planning Organization (MTPO) as outlined in the MTPO Policies Manual as an integral part of the development, as a physical or visual amenity that provides usable open space or that resembles native habitat communities by planting native vegetation in and around the facility to the maximum extent feasible.
- Policy 5.1.9** Stormwater management facilities shall utilize contours of the site and minimize disturbance to existing natural features to maximum extent feasible. The county shall develop land development regulations that incentivize, encourage, and require where necessary, environmentally sensitive approaches to stormwater management, including Low Impact Design (LID) techniques and the protection of natural areas and features.
- Policy 5.1.10** The hydrologic function of the site shall be maintained to the maximum extent practicable through LID techniques, the reduction of impervious surfaces via vertical construction and the use of alternative parking surfaces in order to preserve the existing pre-development hydro-period from discharge to wetland systems and adequate existing vegetation on the site.

## **OBJECTIVE 6.1**

Ensure that stormwater discharges to groundwater or surface water resources that are within or affecting more than one governmental jurisdiction are effectively managed to preserve, protect, and enhance those watershed resources through continued active County coordination with adjacent governments and appropriate agencies.

- Policy 6.1.1** Drainage improvements in unincorporated Alachua County shall be coordinated with the goals, objectives and policies of the [Conservation and Open Space Element](#) of this plan.
- Policy 6.1.2** County land development regulations shall continue to ensure that standards for the treatment and discharge of stormwater runoff from developments within the watershed of surface waters that flow into adjacent governmental jurisdictions are consistent with the standards established by those jurisdictions.
- Policy 6.1.3** All applicable state, water management district, and/or federal permits required for a development shall be obtained prior to the commencement of development, consistent with section 125.022(5), F.S.
- Policy 6.1.4** The County shall solicit input and review of proposed development which has the potential of discharging stormwater runoff into surface waters of other jurisdictions in accordance with procedures established in the [Intergovernmental Coordination Element](#) of this plan.

## **OBJECTIVE 7.1**

Stormwater management in floodplain areas shall protect the public health, safety and welfare by incorporating hazard mitigation and multi-functional designs.

- Policy 7.1.1** Alachua County shall continue participation in the State Local Mitigation Strategy program and emphasize public education programs for floodplain protection.
- Policy 7.1.2** Construction activities in the 100 year floodplain areas shall conform to the National Flood Insurance Program, and shall meet or exceed Chapter 65-25 and all other federal, state, regional, WMD and local regulations in effect on the date of adoption this comprehensive plan.
- Policy 7.1.3** All road construction and improvement projects within the 100 year floodplain shall be designed in such a manner as to avoid any increase in floodway obstruction, any increase in the peak rate or volume of stormwater runoff and any increase in pollutant runoff to the maximum extent technically feasible.
- Policy 7.1.4** A natural regulated buffer determined on a site-specific basis shall be required on public lands within the 100 year floodplain for the purposes of visual screening, stormwater runoff, erosion control, resource-based recreation where deemed appropriate, and public safety.
- Policy 7.1.5** Alachua County shall participate in the acquisition planning process of federal, state, regional, WMD and local agencies for land and unique natural areas located within the 100 year floodplain.

## STORMWATER ELEMENT DEFINITIONS

**10-Year Storm Event:** A rainfall event having a ten-percent (10%) probability of occurrence during any given year.

**25-Year Storm Event:** A rainfall event having a four-percent (4%) probability of occurrence during any given year.

**100-Year Storm Event:** A rainfall event having a one-percent (1%) probability of occurrence during any given year.

**100-Year Floodplain:** Areas subject to inundation by a flood having a one-percent (1%) probability of occurrence in any given year. The 100-year flood elevation is the highest elevation of flood waters during the 100-year storm event and is calculated or estimated from the best available information.

**Adverse Stormwater Impacts:** Runoff from heavy precipitation that can result in flooding outside of normal floodplains, erosion and loss of property or life.

**Best management practices (BMPs):** Structural and non-structural control techniques used for a given set of site conditions that, based on research, field-testing, and expert review, have been determined to be effective and practicable for improving water quality, preventing erosion and sedimentation, conserving water supplies and protecting natural resources. Best management practices include, but are not limited to, site planning, turf and landscape practices, structural stormwater management facilities, maintenance procedures, prohibitions of practices, spill and leak control, and other good housekeeping measures for pollution prevention. Best management practices may be implemented individually or as a combination of practices such as a stormwater treatment train.

**Closed System:** An enclosed stormwater conveyance system associated with roadways constructed with curb and gutter.

**Critical-duration:** The duration of a specific storm event (i.e., 100-year storm) which creates the largest volume or highest rate of net stormwater runoff (post-development runoff less pre-development runoff) for typical durations up through and including the 10-day duration event (1-hour, 2-hour, 4-hour, 8-hour, 24-hour, 3-day, 7-day and 10-day events). The critical duration is determined by comparing various durations of the specified storm and calculating the peak rate and volume of runoff for each. The duration resulting in the highest peak rate or largest total volume is the "critical-duration" storm.

**Detention:** The collection and temporary storage of stormwater in such a manner as to provide for treatment through physical, chemical or biological processes with subsequent gradual release of stormwater.

**Development:** Any man-made change to improved or unimproved real estate including, but not limited to, construction of surfacewater management systems, structures, dredging, filling, grading, paving, excavation, development of sewage disposal systems, or the substantial alternation of the topography of a tract of land.

**Flood Insurance Rate Map (FIRM):** Insurance and floodplain management map issued by the Federal Emergency Management Agency (FEMA) that identifies, based on detailed or approximate analysis, areas of 100-year flood hazard.

**Flood Insurance Zone Designations:** The zone designations that appear on the FIRM. Each designation indicates the magnitude of the flood hazard within a specific area.

**Floodplains:** Lowlands adjoining the channels of rivers, streams or other watercourses, or lakes or other bodies of standing water. Includes the floodway and floodway fringe.

**Floodway or Regulatory Floodway:** The channel of a river, stream, or other watercourse and adjacent land areas that must be reserved in order to discharge the 100-year flood without cumulatively increasing the 100-year flood elevation more than a designated height.

**Hydro period:** Period of time in which soils, waterbodies and sites are wet.

**Impervious Surface:** Land Surfaces which do not allow, or minimally allow, the penetration of water; included as examples are building roofs and normal concrete and asphalt pavements.

**Low Impact Design (LID):** An approach to land development and stormwater management that preserves and protects natural resource systems and water resources using various site planning and stormwater management approaches and technologies to simultaneously conserve and protect natural resource systems and to reduce the average annual stormwater pollutant loading discharged off-site. The approach uses site planning to minimize runoff and a suite of engineered small-scale hydrologic controls distributed throughout the site and integrated as a BMP Treatment Train to replicate the natural hydrologic functioning of the landscape through infiltrating, filtering, storing, evaporating, and detaining runoff close to its source.

**Obstruction:** Any fill, structure, work, appurtenant work, or surfacewater management system placed in a floodway which may impede the flow of water or otherwise result in increased water surface elevations.

**One-stop permitting:** The ability to obtain a single permit from the County and other appropriate agencies as a result of an inter-local agreement for the permitting and construction of stormwater management facilities associated with new development or modification to existing facilities.

**Open System:** An open stormwater conveyance system associated with roadways constructed with roadside swales.

**Retention:** The prevention of the discharge of a given volume of stormwater runoff by complete on-site storage.

**Sensitive Karst Areas (SKAs):** The areas designated as “high vulnerability” or “vulnerable” zones of the Floridan Aquifer as defined by the Florida Aquifer High Recharge Map (Conservation and Open Space Element Map Series - Map 2), and with soil types classified as “excessively drained”, “somewhat excessively drained”, or “well drained” as defined by the U.S. Department of Agriculture (USDA) Soils Map (Conservation and Open Space Element Map Series - Map 3).

**Stormwater:** The flow of water which results from, and which occurs immediately following a rainfall event.

**Stormwater Utility:** An enterprise fund established to provide stable funding for stormwater operations and capital projects.

**Structure:** Anything constructed or used for residence, business, industry, institutional or other public or private purposes or accessory thereto and including tents, lunch wagons, dining cars, trailers, mobile

homes, sheds, garages, carports, animal kennels, storerooms, gasoline pumps, and similar structures, whether stationary or movable.

**Subdivision:** The platting of real property into three or more lots, parcels, tracts, tiers, blocks, sites, units, or any other division. Subdivision includes the establishment of new streets and alleys, additions, and re-subdivisions; and, when appropriate to the context, subdivision applies to the process of subdividing or to the lands or area to be subdivided.

**Usable Open Space:** Walkable outdoor area designed or used for public access, outdoor living, recreation or pedestrian access.

**Water Management District:** Any flood control, resource management, or water management district operating under the authority of Chapter 373, Florida Statutes. Unless otherwise stated, water management district shall refer to either or both, the St. Johns River Water Management District or the Suwannee River Water Management District.

**Watershed:** Land area included in a natural drainage basin for a river, stream or body of water.

**Watershed Resources:** Natural functions or systems that affect stormwater discharge characteristics within a specific watershed.