

**1.5 A BRIEF ASSESSMENT OF SUCCESSES AND SHORTCOMINGS RELATED TO EACH ELEMENT [163.3191(2)(H)]**

**CHAPTER TEN - NATURAL GROUNDWATER AND AQUIFER RECHARGE SUB-ELEMENT**

**INTRODUCTION**

The Natural Groundwater And Aquifer Recharge Sub-Element has one Goal:

Goal 10.1 Protect the quality and quantity of the surficial and Floridan aquifers, including the Volusia-Floridan sole source aquifer, and protect and enhance the capabilities of the groundwater recharge areas for the present and future water supply of the County.

The EAR-based amendments will result in no changes to this Goal. The Goal statement recognizes the importance of protecting and enhancing the County's groundwater resources recognizing its importance as a primary source of water supply. The need to protect the County's groundwater resources is of particular concern given the pressure for increased usage resulting from anticipated growth in population. According to SJRWMD 2003 Water Supply Assessment, groundwater accounts for nearly 92% of the total water use for all users in the County. This study projects that groundwater withdrawals will account for around 78% of the increase in total water use through the year 2025. Public use (utilities and individual wells) will account for 93% of this demand unless alternative supply sources are provided to meet the need so that the potential for unacceptable impacts to the resource, as indicated by the SJRWMD study, is reduced.

It is anticipated that this Sub-element will be amended as part of the adoption of the County's Water Supply Work Plan along with the EAR-based amendments. The amendments associated with the Water Supply Work Plan will be focused on water supply related issues. These and any EAR-based amendments are discussed below.

**OBJECTIVE ANALYSIS**

**Objective 10.1.1 Protect and Enhance Recharge and Ground Water Levels**

Potable water resources shall be protected and conserved such that natural recharge to the aquifers shall not be reduced and more water shall be added to the aquifer recharge system. Dependence upon the Floridan aquifer for non-potable uses shall decrease. Therefore, activities in the unincorporated area shall not result in the lowering of the potentiometric surface of the Floridan aquifer below the lowest 1981 (May, June or July) levels, which would cause damage to the resource. Withdrawals from the surficial aquifer shall also not cause damage to the resource.

Objective Achievement Analysis

This Objective deals with protecting and enhancing groundwater quantity so usage does not adversely impact the resource. A key indicator for the health of the system in terms of quantity is the level of the potentiometric surface using the lowest recorded level in 1981 as the lowest acceptable limit. During the EAR period, this level was not reached,

although the County experienced deficits in rainfall leading to a short-term drought period from 1998 through 2000. It was during this period that the County experienced the extreme wildfire events in the spring/summer of 1998. Since this period, rainfall increased with groundwater levels in a number of monitoring wells returning to normal or above normal levels. The increase in levels is due to several tropical weather systems that impacted the County along with above-normal rainfall during early summer of 2005.

The County's public lands acquisition program (Volusia Forever), and participation in the Regional Aquifer Management Plan (RAMP) has served to protect and enhance recharge. Since 1986 when the County initiated its acquisition program, the County and its agency partners have acquired over 48,000 acres of land through full, and less than fee, purchases. The RAMP initiative consists of a number of projects that have the potential to increase the quantity of groundwater that can be withdrawn from the aquifer while protecting against unacceptable impacts to wetlands, lake levels, spring flows and groundwater quality.

This Objective should be modified to clarify the language although the substance of the text will remain the same. The first sentence should be revised to indicate that pre-development recharge is to be protected and enhanced where feasible. The word "decreased" in the second sentence should be changed to "reduced."

#### Policy Relevance

This Objective contains 17 Policies that establish a number of implementation activities including monitoring and data collection activities, best management practices, and regulatory approaches. Several of these Policies will be modified to reflect changes that have occurred since the previous EAR-based amendments. The County recently amended its existing water conservation standards with the adoption of a water wise ordinance aimed at significantly reducing landscape irrigation usage for new development. Policy 10.1.1.3 will be revised to reflect this change. The County also has incorporated a water shortage protection plan as a supplement to the water shortage protection plan of the SJRWMD. Policy 10.1.1.4 will be revised consistent with the current protection plan levels that are incorporated as minimum environmental standards in the County's Code of Ordinances. The Base Level and Level I standards in this Policy have been combined, eliminating the Level I standard. The County's base level standard consists of landscape watering rules that supplement SJRWMD's watering restrictions.

Policy 10.1.1.8 will be revised to eliminate two criteria that have been found to be not useful to evaluate the condition of the aquifer. These two criteria include "increase in occurrence of...peat fires and "compaction of soils overlying the aquifer." The provision in Policy 10.1.1.11 exempting certain agricultural activities from prime or high recharge protection requirements will be deleted since the County does not regulate these activities. Other Policies will be revised to indicate changes that have occurred over time such as the replacement of the Volusian Water Alliance referenced in Policy 10.1.1.15 with the Water Authority of Volusia that was created in 2003.

#### **Objective 10.1.2**      Protect Ground Water Quality



Volusia County shall not allow the degradation of the Floridan and surficial aquifers' water quality.

### Objective Achievement Analysis

The Objective will remain as currently worded. The County implements several programs, chiefly through the Environmental Management Division, that are oriented to protecting groundwater quality. The County has adopted minimum environmental standards (e.g., wellhead protection) and implements several programs cooperatively with the state (e.g., small quantity waste generator, wastewater package plant inspections, and petroleum storage tank compliance and clean-up). During the EAR period, the County annually inspected over 500 storage tank sites. The County currently is managing the clean-up of approximately 150 contaminated sites with 8 sites receiving clean-up closures accomplished during the previous year. These activities are being accomplished through a contracted local program arrangement with the State.

### Policy Relevance

This Objective contains 5 Policies that will be modified to reflect the current agency relationships under which these Policies are implemented. Policy 10.1.2.1 will be modified to indicate that the County will continue to rely on the State to monitor groundwater quality. Policies 10.1.2.3, 10.1.2.5, 10.1.2.7 will be revised to reflect informal and formal relationships with the State concerning petroleum storage tanks. Finally, Policy 10.1.2.14 will be changed to reflect that the County is responsible for monitoring County-owned and operated landfills that may become closed. The County has determined it is not feasible to monitor private landfills.

### **Objective 10.1.3**      Protect Groundwater Quantity

Volusia County shall develop a program for its potable water facilities to protect future sources and minimize detrimental environmental effects which may be caused by developing excessive groundwater supplies.

### Objective Achievement Analysis

This Objective is anticipated to be revised with amendments associated with adoption of the County's Water Supply Facilities Work Plan. This particular Objective pre-dated the current Regional Water Supply Planning efforts and will be re-worded to reflect the current planning process. The County has continued to monitor groundwater conditions in conjunction with the St. Johns River Water Management District. The network consists of 47 monitoring wells.

### Policy Relevance

This Objective contains 1 Policy that will be modified with the adoption of the County's Water Supply Facilities Work Plan. Policy 10.1.3.2 a. establishes a specific ground water criterion that is not utilized for regulatory or planning purposes. Further, regulation of the consumptive use of water is vested with the Water Management District's pursuant to Chapter 373, F.S. Policy 10.1.3.2 c. will be modified to be consistent with groundwater monitoring standards as it is unclear what is meant by "natural" aquifer

levels and how these levels could be maintained. The phrase "if necessary" in Policy 10.1.3.2 e. is clearly out-dated since the exploration of potential alternative water sources has been underway as part of the Regional Water Supply Planning process.