

CHAPTER 10

NATURAL GROUNDWATER AND AQUIFER RECHARGE ELEMENT

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A. OVERVIEW

The County of Volusia is responsible for coordinating with the State of Florida, the St. Johns River Water Management District, and the 16 municipalities in Volusia County to protect the aquifer. The Water Resources and Utilities Division serves a small percentage of the county population directly. It has agreements in place with other service providers to provide water and waste water in the remaining parts of the county. The overall purpose of this element is to protect both the quantity and quality of the natural groundwater. This includes both the surficial and Floridan aquifers. Groundwater levels and water quality are affected by many activities. Solid waste and hazardous waste facilities, underground storage tanks, fertilizers, and septic tanks all have the potential to contaminate groundwater quality. Due to the expanse and interconnectivity of the underground system, these issues are also addressed in the Future Land Use element, Transportation element, Intergovernmental Coordination element, Capital Improvements element, Sanitary Sewer element Potable Water element, Solid Waste element and Drainage element. These elements have been reviewed and updated for additional restrictions as they relate to recharge and groundwater quality. The goals, objectives and policies contained herein, provide guidelines and limitations regarding the above issues in order to protect the wetland and aquifer system.

Natural groundwater recharge areas, because they are linked to the groundwater, are affected by the restrictions to protect groundwater quality and quantity listed above. Recharge areas must maintain their natural recharge functions if they are to continue to replenish the aquifer. This element includes measures to protect these upland areas.

B. GOALS, OBJECTIVES AND POLICIES

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.

OBJECTIVE:

- 10.1.1 Potable water resources shall be protected and conserved such that the recharge function of the aquifers shall be maintained. Dependence upon the Floridan aquifer for non-potable uses shall be reduced, and withdrawals from the surficial aquifer shall not cause damage to the resource.

POLICIES:

- 10.1.1.1 Volusia County shall utilize recharge maps from the St. Johns River Water Management District and/or the USGS to determine areas of recharge within the County.

- 10.1.1.2 Volusia County shall continue to monitor groundwater supply conditions in conjunction with the St. Johns River Water Management District. Furthermore, Volusia County shall periodically review the adequacy of groundwater supply monitoring procedures and, if necessary, formulate an appropriate alternative management strategy.
- 10.1.1.3 Volusia County, in collaboration with the SJRWMD and other agencies shall study the impacts of predicted sea level rise on the groundwater table and make necessary changes in practice and policies dependent on the findings.
- 10.1.1.4 Volusia County shall continue to promote water wise irrigation practices under Chapter 50, Divisions 8 and 10, Volusia County Code of Ordinances. Land development permits in unincorporated Volusia County will be subject to those limitations.
- 10.1.1.5 Volusia County Utilities shall promote the efficient use of groundwater supplies as outlined in the Potable Water element of this Comprehensive Plan.
- 10.1.1.6 Volusia County shall implement the current well ordinance and remain consistent with the recommendations of the SJRWMD's Air/Water Heat Pump Model Ordinance.
- 10.1.1.7 Volusia County shall require the use of water conserving plumbing fixtures in all new development, subject to County regulations in effect.
- 10.1.1.8 The criteria for evaluating the condition of the aquifer for this and all policies in this element may include, but not be limited to, ongoing monitoring of wells, saltwater intrusion, changes in vegetation, springs and wetlands, increase occurrence of sinkholes, and evidence of potential groundwater contamination.
- 10.1.1.9 Volusia County shall require the use of recovered wastewater as required in the Sanitary Sewer element of this Comprehensive Plan.
- 10.1.1.10 Volusia County shall continue to collaborate with the St. Johns River Water Management District, U.S. Geological Survey, and U.S. Natural Resources Conservation Service both in studying the surficial and Floridan aquifers and in determining the most appropriate actions to take in order to protect the resource.
- 10.1.1.11 Prime (or high) aquifer recharge areas appropriate for development shall be developed so as to continue to maintain pre-development net retention.
- 10.1.1.12 New stormwater management projects in existing developed areas should be designed in a fashion that enhances aquifer recharge.
- 10.1.1.13 Volusia County shall encourage the use of green infrastructure and low impact development.
- 10.1.1.14 Volusia County shall protect recharge lands through both fee simple or less than fee simple acquisition techniques, land use controls, or other methods deemed appropriate.

- 10.1.1.15 Because of its importance as a recharge area and its mostly natural ecosystem, suitable undeveloped portions of Rima Ridge shall be included in the Environmental Systems Corridors.
- 10.1.1.16 Volusia County shall maintain a comprehensive program responsible for educating businesses and residents of: the County's current water conservation policies, the fragility of the aquifer, methods to reuse and conserve water, well abandonment problems and rules, and benefits of water efficient landscaping.
- 10.1.1.17 The County shall encourage the continued metering of agricultural wells in the County to help accurately determine water usage within the County.
- 10.1.1.18 The County shall encourage reuse of wastewater for purposes.
- 10.1.1.19 Volusia County shall support SJRWMD policies regarding the protection of potentiometric surface impacts within unincorporated areas
- 10.1.1. 20 The County shall implement water conservation strategies and related policies in the Potable Water element.
- 10.1.1.21 The county shall continue to utilize and update regulations to protect the aquifer, which include standards to maximize open space, limit impervious surfaces, promote protection of natural vegetation, buffer karst sensitive areas (areas prone to sinkholes), maximize recharge volumes, and treat recharge stormwater to protect groundwater quality.

OBJECTIVE:

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

POLICIES:

- 10.1.2.1 The County shall continue to rely on the Florida Department of Environmental Protection (FDEP) to monitor the County's groundwater system to determine the extent of any groundwater contamination and FDEP's information will serve as a database to assess ambient groundwater quality.
- 10.1.2.2 Volusia County shall maintain policies, within its jurisdiction, using information collected in the FDEP groundwater quality studies, to protect the aquifer.

These shall include policies which address:

1. public wellfield siting
2. siting of industrial land uses ~~which~~ that use hazardous materials or generate hazardous waste
3. siting of additional hazardous waste collection facilities, as needed

4. if necessary, expansion of the Hazardous Material Emergency Response Team
 5. if necessary, additional protection of the aquifer from saltwater intrusion
 6. if necessary, restrictions regarding the use of pesticides or fertilizers.
- 10.1.2.3 The County shall continue to enforce local and State regulations pertaining to the protection of the surficial and Floridan aquifers from such contaminants as hazardous wastes through the wellfield protection ordinance and small quantity generator program. If state funds become unavailable, Volusia County shall determine the feasibility of continuing these programs.
- 10.1.2.4 Volusia County shall maintain a wellhead/wellfield protection ordinance for the unincorporated area. The wellhead/wellfield protection ordinance shall, at minimum
1. establish the zones of influence and/or areas for protection for each public wellfield,
 2. restrict the handling and storage of hazardous substances in order to protect potable water wells,
 3. permit regional wellfields to serve a multi-purpose function, such as conservation and passive public recreational facilities.
- 10.1.2.5 Underground petroleum storage tanks shall be prohibited within the primary zone of influence, or area for protection of all existing and designated future public wellfields in the unincorporated area, (includes those regulated by the Public Utilities Commission) and shall be prohibited in future development in the Environmental System Corridors as designated by the Conservation and Future Land Use elements in this Comprehensive Plan.
- 10.1.2.6 Bio-medical wastes within the County shall continue to be managed by the Volusia County Health Department.
- 10.1.2.7 The County shall continue following state regulations at all County solid waste disposal facilities to protect the water quality of the Floridan and surficial aquifers.
- 10.1.2.8 The County shall continue the present well monitoring program at the County's landfills to determine groundwater and surface water pollutant levels and shall expand the number of monitoring wells concurrent with expansion of the landfill and any future landfills.
- 10.1.2.9 Existing monitoring equipment at the County landfill shall be properly maintained and upgraded in connection with technological advances.
- 10.1.2.10 Future landfills shall not be located within prime (or high) aquifer recharge areas or karst areas (prone to sinkhole activity).

- 10.1.2.11 The County shall monitor closed landfills owned and operated by the County for possible groundwater contamination.
- 10.1.2.12 Volusia County shall coordinate with all municipalities in the selection of future landfill sites.
- 10.1.2.13 Volusia County shall use the FDEP Basin Management Action Plans and the Priority Focus Areas to improve the water quality.

OBJECTIVE:

- 10.1.3 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.

POLICIES:

- 10.1.3.1 Volusia County shall continue to monitor groundwater supply conditions in conjunction with the St. John's River Water Management District (SJRWMD). The Volusia County groundwater supply database shall include information using a network of monitoring wells. Furthermore, Volusia County shall periodically review the adequacy of groundwater supply monitoring procedures and, if necessary, formulate an appropriate alternative management strategy.
- 10.1.3.2 Volusia County, working with the SJRWMD and partnering water supply entities shall:
 - a. Restrict additional groundwater development within those portions of coastal Volusia County which are known to contain groundwater of subpotable quality at a depth of less than 100 feet.
 - b. Permit regional wellfields under their jurisdiction to serve a multipurpose function, such as conservation and passive public recreational facilities.
 - c. Monitor that the natural aquifer levels are maintained.
 - d. Encourage water use efficiency through low flow plumbing, water efficient landscaping, etc.
 - e. Explore, and if deemed necessary, develop alternative sources of potable water as addressed in the Potable Water Element