The Florida Natural Areas Inventory has prioritized several conservation areas partially or wholly within Lake County, including, but not limited to: the Green Swamp, and the Wekiva/Ocala Greenway Area. Select ecosystems of Lake County are thus fragile and closely linked with the ecological sustainability of communities within and beyond the county's boundaries. Issues of plant and animal biodiversity and water supply are among the most important environmental considerations for the County.

The county is faced with the challenge of balancing development pressures with the preservation of the natural environment. To this end, Lake County will comply with all legislation (Federal, State, Regional and Local) as it pertains to Lake County's environmental sensitive areas.

GOAL NAT 1

~~To Conserve The Quality and Quantity of Potable Water Available to Lake and Surrounding Counties.~~ To maintain an adequate quality and quantity of aquifer recharge to protect potable water supplies, and ensure the protection of natural systems.

OBJECTIVE NAT 1.1: CONSERVATION OF THE AQUIFER RESOURCE

The County shall ~~Upon plan adoption~~, safeguard the quality and quantity of the surficial and Floridan aquifers, to protect and enhance the capabilities of the ground water recharge areas for the present and future water supply of Lake County and ensure protection of natural systems. ~~including springs and wetlands.~~

Policy NAT 1.1-1: Significant Aquifer Recharge Map and Definition

Lake County shall amend its Comprehensive Plan and Land Development Regulations based on the sensitivity of the potentially impacted ecosystems and the most recently available adopted ~~significant~~ aquifer recharge area definition(s) and ~~significant~~ recharge area map(s) created by the St. Johns River and Southwest Florida Water Management Districts for Lake County, pursuant to Sections 373.095 (3) and 373.0937, Florida Statutes.

Policy NAT 1.1-2: Required Use of Water Conserving Plumbing Fixtures

The County shall require the use of water conserving plumbing fixtures in all new development.

Policy NAT 1.1-3: Hydrologic Reports

The Lake County Land Development Regulations shall include the requirement of a hydrogeologic report for all areas of the County now classified as areas of significant recharge by the Water Management Districts. As significant recharge areas are identified ~~and adopted~~ by the Water Management Districts consistent with Policy NAT 1.1-1, the Comprehensive Plan and Land Development Regulations will be amended accordingly. The hydrogeologic report will determine the recharge potential of the site and the Land Development Regulations shall stipulate the recharge requirements based on proposed land uses and site hydrogeology.

Policy NAT 1.1-4: Support Water Management Districts

Lake County shall assist the St. Johns River and Southwest Florida Water Management Districts in the preparation of a report detailing the impacts of all land uses on recharge areas and land surrounding Outstanding Florida Waters located in Lake County. This report shall be based on the conclusions of other studies completed by appropriate Federal, State, and local agencies. The Lake County Comprehensive Plan shall be amended, and the Land Development Regulations then updated, to implement appropriate recommendations of this report.

Policy NAT 1.1-5: Aquifer Monitoring Program

Lake County shall establish, in cooperation with Florida Department of Environmental Protection, the St. Johns River and Southwest Florida Water Management Districts, U.S. Geological Survey, and Lake County Water Authority, a thorough aquifer-monitoring program.

Policy NAT 1.1-6: Golf Course Ordinance

Lake County shall comply with the adopted Golf Course ordinance as it applies to reuse and drought management.

Policy NAT 1.1-7: Intergovernmental Coordination

The County shall continue to collaborate with the Florida Department of Environmental Protection, St. Johns River and

Southwest Florida Water Management Districts, U.S. Geological Survey, and U.S. Soil 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.

Policy NAT 1.1-8: Provide Net Retention for Aquifer Recharge

Consistent with Policy 7-2.2 of the Conservation Element, significant aquifer recharge areas that are considered appropriate for development, based on hydrogeologic condition and existing land use shall be developed so as to continue to maintain pre-development net retention. Exemptions shall be given for agricultural activities utilizing Best Management Practices adopted by FDEP, USDA, SCS, and IFAS that protect ground and surface water quality. The use of porous pavement, concrete, turf blocks and other innovative technologies shall be encouraged as a method of protecting aquifer recharge.

Policy NAT 1.1-9: Provision of Technical Assistance

Lake County shall provide technical assistance to the appropriate Federal, State and local authorities for use in studying the surficial and Floridan aquifers and determining the most appropriate actions for protecting these resources.

Policy NAT 1.1-10: Secure Aquifer Recharge Lands

Where feasible, Lake County shall purchase or secure conservation easements on significant aquifer recharge lands.

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Policy NAT 1.1-11: Educational Enhancement

Lake County, through the Public Outreach Program of Environmental Services, shall participate in enhancing the function and quality of the education of its citizens about: 1) the current water conservation policies, 2) fragility of the aquifer, 3) methods to reuse and conserve water, 4) well-abandonment problems and rules, and 5) benefits of drought resistant plants (xeriscape™) through an education program that consists of, at a minimum, brochures, a speakers bureau, and slide show.

Policy NAT 1.1-12: Site Specific Review of Significant (Currently defined as >13 inches/year with rapidly permeable soils or as modified and adopted by the State) Aquifer Recharge Areas and Areas

where the Floridan Aquifer is most vulnerable (the tendency or likelihood for contaminants to reach the top of the specified aquifer system after introduction at land surface based on existing knowledge of natural hydrogeological conditions) to contamination.

Lake County shall, at the applicant's expense, seek a site specific determination by an independent State-licensed geologist to determine whether a site lies within a bona fide significant aquifer recharge area or is most vulnerable to contamination.

Policy NAT 1.1-13: Development Within High and Significant Aquifer Recharge Areas and/or Areas Where the Floridan Aquifer is Most Vulnerable to Contamination

Development within a high aquifer recharge, significant area or in an area most vulnerable to contamination areas shall be required to maintain pre-development net retention in a manner that protects ground and surface water quality. The use of porous pavement and concrete, turf blocks and innovative technologies shall be encouraged as a method for fulfilling this policy. Agricultural activities utilizing Best Management Practices shall be deemed to have satisfied this policy.

Policy NAT 1.1-14: Comprehensive Ground Water Monitoring

The County shall cooperate with the cities, agencies and interest groups to develop a comprehensive ground water quality monitoring program. This program, using FDEP ground water quality information as a base for ambient ground water quality, shall monitor the County's ground water to determine the extent of any future ground water contamination. The results of this program will be given to the SJRWMD for incorporation into its management plans for Lake County.

Policy NAT 1.1-15:

The County shall develop and enact into the Land Development Regulations, an overlay classification which sets alternative design criteria and standards to protect the functions of the high aquifer recharge areas or in an area most vulnerable to contamination.

The following shall be addressed in regulating development and creating land development regulations:

1. requirements to minimize impervious surfaces (including foot pads) considering open space incentives, pervious parking areas, and maintenance of existing native vegetation and/or use of native or water wise plant materials suitable for on-site ecological and soil conditions;
2. incentives to utilize on-site retention of rain and storm water for active and passive irrigation;
3. incentives to implement "right plant – right place" and water wise landscaping standards;
4. minimum open space standards;
5. design standards for natural water retention areas; and
6. establish standards to ensure water quality.

Policy NAT 1.1-16: Requirements for Proposed Developments within High Recharge Areas <u>or in an Area Most Vulnerable to Contamination</u>

The County shall require that all development within high recharge <u>areas or in an area most vulnerable to contamination</u> comply with the following measures, unless there is conflict with code provisions for buffers between developments, site stormwater requirements, and parking or other improvements:

1. stormwater retention facilities shall be located in those areas with the highest rate of percolation;
2. natural vegetation and/or use of water wise plant materials suitable for on-site ecological and soil conditions shall be used for required buffers, open space area shall be maintained in its natural state and protected from disruption during site construction; and
3. pervious parking materials, grass parking areas, and smaller parking stalls shall be permitted where it can be demonstrated to adequately serve the need of on-site use and result in greater recharge than under current code requirements.

Policy Nat 1.1-18: Correction of Failing Septic Tanks

The County and DOH shall establish an evaluation mechanism to correct failing septic tanks including, but not limited to, septic tank inspection, repair, alteration, maintenance and/or pumping, and siting requirements, in the Green Swamp Area of Critical State Concern and the Wekiva River Protection Area and in Areas Most Vulnerable to Contamination.

OBJECTIVE NAT 1.2: PREVENTION OF CONTAMINATION OF AQUIFER RESOURCES

The County shall ~~investigate underground storage tank regulation violations~~ evaluate proposed commercial and small business land use to achieve ~~timely response to enforcement situations and~~ a higher degree of protection for the County's ground water resources.

Policy NAT 1.2-1: Land Development Regulation Updates

Lake County shall amend its Comprehensive Plan and update its Land Development Regulations, using information collected by the DEP during future ground water quality studies, to protect the aquifer. These updates shall address but not be limited to:

1. public wellfield siting, per the adopted Wellhead Protection Ordinance;
2. siting of industrial land uses which use hazardous materials or generate hazardous waste;
3. siting of additional household hazardous waste collection facilities for households and conditionally exempt small quantity generators of hazardous waste;
4. protection of the aquifer from saltwater intrusion;
5. activities regarding the use of pesticides and fertilizers, per the adopted Golf Course Ordinance.

Policy NAT 1.2-2: Continued Enforcement of Regulations

Lake County shall continue to cooperate with State and Federal agencies in enforcing regulations pertaining to the protection of the surficial and Floridan aquifers from regulated materials and wastes, including those material governed and/or equal, but receiving special exemption under, the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental

Response, Compensation, and Liability Act (CERCLA), Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and/or other Federal, State and Local codes requiring the management of materials that may be harmful or dangerous to the environment. ~~such contaminants as hazardous and biological wastes, and petroleum products including, but not limited to: fuel oils, transportation fuels, machinery fluids and their wastes.~~

Policy NAT 1.2-3: Floridan Aquifer Vulnerability Assessment (FAVA) Map

Lake County shall prepare a Floridan Aquifer Vulnerability Assessment (FAVA) Map on a county-wide scale to determine areas within the county vulnerable to contamination of the Floridan aquifer.

Natural processes or human activities can introduce contaminants to ground water either through pollution of surface-water bodies or by infiltration through soils and sequences of sediments and rocks that overlay Florida's aquifer systems.

This map shall be prepared using technology developed by the Florida Geological Survey and designed to provide a detailed distribution of relative vulnerability based solely on natural properties of hydrogeology. The map shall not include anthropogenic factors such as land use and contaminant loading. An aquifer vulnerability model prepared using Lake County county-specific data, would help determine which areas within the county were the most and least vulnerable and allow for establishment of appropriate development standards.

Some of the applications of the FAVA map would include well-head protection, springshed protection, source-water protection, watershed and ecosystem comprehensive planning, land-use planning/zoning, land conservation and as a component of ground-water susceptibility models.

Policy NAT 1.2-.4: Development of Local Regulations

Lake County shall develop local regulations for inclusion into the Land Development Regulations, including a Lake County scale version of the State's FAVA map, to augment State and Federal regulations pertaining to the protection of the surficial and Floridan aquifers, as previously noted in Policy NAT 1.2-4.

Policy NAT 1.2-5: Regulated and/ or Hazardous Waste Disposal

Lake County shall cooperate with all State and Federal authorities in the regulation and disposal of regulated and/or hazardous wastes as defined in 9J5.003 (38) F.A.C. by participating in programs at the local level.

Policy NAT 1.2-.5A: Regulation of Hazardous Wastes in Significant Aquifer Recharge Areas and in an Area Most Vulnerable to Contamination

Lake County shall prohibit the disposal of hazardous wastes in all areas of the County. Small quantity generator (<1000 kg per month) businesses that use hazardous materials or generate waste shall be regulated so as to ensure that proper handling and disposal practices are adhered to. The location of new businesses that use hazardous materials or generate hazardous waste shall be restricted within significant aquifer recharge areas and in an Area Most Vulnerable to Contamination. Large quantity generators (>1000 kg per month) shall be prohibited in significant aquifer recharge areas and in an Area Most Vulnerable to Contamination.

Policy NAT 1.2-6: Compliance With Local Regulations to Provide Enforcement Capabilities

The County will provide enforcement capabilities and procedures to achieve a higher degree of protection for the County's ground water resources.

Policy NAT 1.2-7: Coordinate Facilities producing, using, handling and storing regulated materials ~~Storage Tanks~~ with Land Use

The County shall utilize the information provided by the inventory of facilities producing, using, handling and storing regulated materials ~~storage tanks~~ in making land use decisions to avoid incompatible development in areas with high ground water pollution potential.

OBJECTIVE NAT 1.3: LAND USE ISSUES RELATED TO CONSERVATION OF WATER RESOURCES, WETLANDS, FLOODPLAINS, NATURAL HABITATS, NATURAL VEGETATION, ENVIRONMENTALLY SENSITIVE AREAS, AND MINING ACTIVITIES.

Within federal, state and/or local designated environmentally sensitive lands and/or listed conservation areas, Lake County Shall Protect the Features of the Natural Environment through the Following Policies.

Policy NAT 1.3-1: Surface and Subsurface Hydrology

The hydrology of a site should be utilized in determining land use as opposed to land use determining hydrology. This entails discouraging any land use that would significantly alter surface ~~and subsurface~~ ground water levels, recharge, water quality; or have an adverse effect on the environment, unless such impacts can be successfully mitigated in accordance with accepted mitigation policies and practices. Such mitigation shall be subject to approval by Lake County.

Policy NAT 1.3-2: Reduction of Density of Waterfront Development

Lake County shall implement policies aimed at controlling the density of waterfront development.

Policy NAT 1.3-3: Protection of the Water Quantity, Water Quality and Hydrology in Federal, State and/or Local Designated Environmentally Sensitive Lands and/or Conservation Areas.

Special consideration shall be given to the protection of the water quantity, water quality and hydrology of Federal, State and/or Local designated environmentally sensitive lands and/or conservation areas as defined in Chapter 369, Part III, Florida Statutes.

OBJECTIVE NAT 1.4: FEDERAL, STATE AND/OR LOCAL DESIGNATED ENVIRONMENTALLY SENSITIVE LANDS AND/OR CONSERVATION AREAS

The County shall require ~~To provide~~ that post-development recharge volume conditions within all Federal, State and/or Local designated environmentally sensitive lands and/or conservation areas approximate pre-development recharge volume conditions.

OBJECTIVE NAT 1.5: RAPID INFILTRATION BASINS

Lake County shall prohibit the construction of rapid infiltration basins within primary recharge areas of all Federal, State and/or Local designated environmentally sensitive lands and/or conservation areas in order to limit Nitrogen transport to the aquifer.

OBJECTIVE NAT 1.6 HIGH RECHARGE AREAS

The policies and Land Development Regulations of the County shall continue to recognize the need to preserve recharge capabilities of the area. Both quality and quantity of water shall be protected to preserve these resources and the natural communities supported by it. The following policies shall pertain to all Federal, State and/or Local designated environmentally sensitive lands and/or conservation areas

Policy NAT 1.6-1: Preservation of Natural Recharge Characteristics

As funds are available the County shall actively pursue property acquisition to preserve the natural recharge characteristics of property while also providing a direct benefit to the public.

Policy NAT 1.6-2: Irrigation Rain Sensors

The County shall require irrigation rain sensors with automatic cut-offs on all new irrigation systems in accordance with the Florida Standard Building Code.

Policy NAT 1.6-3: Low Flow Plumbing Devices

The County shall require the use of low flow plumbing devices in new construction and renovations in accordance with the Florida Standard Building Code.

Policy NAT 1.6-4: Golf Courses

In order to ensure the development of environmentally friendly golf course construction, the county shall require golf course developers to meet requirements of the Audobon International Signature Program and enroll in their monitoring and evaluation program.

Policy NAT 1-6.5: Sinkholes

If a development occurs on a property containing a stream connecting to a sinkhole, the applicant must preserve a 100 foot buffer on either side of the creek to ensure that there will be no encroachment on the creek.

Policy NAT 1-6.6: High Recharge Areas

Within high recharge areas, the land development regulations shall require developers to retain the first three inches of water on site. This is consistent with the St. Johns River Water Management District's regulations for recharge areas. As an alternative, a developer can conduct a hydrological survey and analysis of an area for review. This analysis must show that redevelopment recharge is equal to or greater than post development recharge. Other options include retaining the 100 year storm event or 96 year 24 hour storm event on site.

Policy NAT 1-6.7: Environmentally Sensitive Areas

As a condition of development approval, the County shall require that when development occurs within or adjacent to environmentally sensitive areas (including high recharge areas), homeowner's documents will be required to address the nature of the sensitivity and how to protect the natural features of the site. The County shall also require that the developer prepare and provide for distribution, brochures to enhance public awareness of these resources.

~~**OBJECTIVE NAT 1.7: DEVELOPMENT WITHIN THE GREEN SWAMP AREA OF CRITICAL STATE CONCERN AS IT RELATES TO THE PROVISION OF PUBLIC FACILITIES**~~

~~Lake County Shall Protect its Aquifer Recharge Areas. Protection of Ground water Resources in the Green Swamp Area of Critical State Concern is Required by the Principles for Guiding Development for the Green Swamp Area of Critical State Concern.~~

~~**Policy NAT 1-7.1: Protection of Ground Water Resources**~~

~~Lake County shall protect its ground water recharge areas from development that would substantially reduce the amount of~~

~~recharge. Protection of aquifer recharge areas in the Green Swamp Area of Critical State Concern is required by the Principles for Guiding Development for the Green Swamp Area of Critical State Concern.~~

~~**OBJECTIVE NAT 1.8: NATURAL RESOURCE IMPACTS**~~

~~The County shall maintain or improve the quality and function of natural drainage systems, ground and surface waterways, recharge areas and associated natural resources through emphasis on non-structural approaches to floodplain management.~~

GOAL NAT 2

Springshed recharge areas "upstream" from the spring discharge are vital areas to protect. The comprehensive plan should identify the areas of high recharge to our springs and provide the guidance that leads to their long term protection.

OBJECTIVE 2.1: LAND USES

In areas of undeveloped high ground water recharge within the identified springshed, existing low density and intensity land uses shall be preferentially maintained as the best option for protection of the water quality and quantity.

Policy 2.1-1: **Primary Zones of Protection**

Undeveloped areas of high ground water recharge within a springshed shall be included within delimited primary zones of protection.

Policy 2.1-2: **Protocol for Determining Suitability**

Develop protocol for determining suitability, with respect to spring system protection, of a particular site for proposed land uses during review of land use change (comprehensive plan amendment).

Policy 2.1-3: **Zone of Protection Ordinances**

Develop and implement zone of protection ordinances and land development regulations to protect spring recharge basins and areas that drain into sinkholes and other karst features exhibiting recharge and/or contaminant migration potential.

Policy 2.1-4: **Intergovernmental Coordination**

Develop approaches and measures needed to protect and restore ground water and springs through intergovernmental coordination element of the comprehensive plan.

OBJECTIVE 2.2: STORMWATER PROTECTION STRATEGIES

In developed portion of identified high ground water recharge within a springshed, the County will establish specific stormwater protection strategies.

Policy 2.2-1: **Springshed High Recharge Areas**

The County will actively pursue the following actions within developed areas of springshed high recharge areas:

- Institute stepped-up stormwater management practices and use of karst-specific and low impact design options through design and redesign of county operated stormwater management facilities and through added treatment criteria for new development or redevelopment areas;
- Heighten public education targeted to homeowners regarding proper lawn and landscaped area fertilization and irrigation;
- Emphasize use of natural xeriscape™ approaches to lawn and landscape design; Employ active street sweeping;
- Establish water conservation programs; and
- Foster local stewardship "adopt a springs" type programs and other incentive and volunteer springshed awareness and protection programs.

Policy 2.2-2: **Stormwater Management in Sensitive Karst Areas**

- Adopt the SJRWMD's sensate karst procedure, or equivalent, for the design and construction of stormwater management systems in karst areas.

- Provide pre-treatment, in the form of swales, berms, ponds, or dry basins, to runoff that currently discharges directly into sinkholes, solution pipes, or springs.
- In the most sensitive karst areas, consult DEP, IFAS, and DACS to review the use of agricultural chemicals to ensure that recommended application rates are protective of water quality in areas where ground water is particularly vulnerable.

OBJECTIVE 2.3: BETTER ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS (OSTDS)

Policy 2.3-1: **Better OSTDS Siting** Within the most vulnerable areas of spring recharge basins, permit only alternative OSTDS technologies, which are currently capable of removing up to 75 percent of nitrogen from OSTDS effluent. Provide incentives that will encourage the use of more efficient nitrogen-removal technologies as they become available.