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INTRODUCTION

The purpose of the Public Facilities Element is to ensure that public facilities are available to meet the needs of Lake County. The Public Facilities Element is broken down into five sub-elements: sanitary sewer, potable water, stormwater, solid waste, and aquifer recharge.

Lake County does not own, operate, or maintain any potable water systems or wastewater systems, nor does Lake County have any water or sewer serviced areas. Municipal governments provide sanitary sewer and wastewater treatment within their jurisdictions and in adjacent areas that may be annexed as development in the county continues. Where public services are not available, private companies provide them. Septic systems and private wastewater treatment plants (package plants) treat waste in unincorporated Lake County. Potable water is provided by municipalities, private entities, or private wells.

Lake County's development and quality of life is dependent on this network of public facilities and services. Each type of service has a unique set of constraints and must adapt to growth and change differently. This element contains goals, objectives, and policies that establish the framework for the provision of public facilities in the County to meet the demand created by existing and future development.

The Florida Natural Areas Inventory has prioritized several conservation areas partially or wholly within Lake County, including, but not limited to: the Green Swamp Area of Critical State Concern, and the Wekiva/Ocala Greenway. 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.

DEFINITIONS

The following definitions shall be used in the review or interpretation of this comprehensive plan. Where a definition contained within this section is different or inconsistent with the definitions contained in enabling state legislation or is inconsistent with the definition contained within the Florida Administrative Code, the definition contained herein shall be utilized.

Acutely Hazardous Waste - Wastes designated by the U.S. EPA as being significantly more dangerous in small amounts than other hazardous wastes. Wastes listed in Appendix B of "Understanding the Small Quantity Generator Hazardous Waste Rules: A Handbook for Small Business" EPA/530-SW86-019, September 1986.

Adverse Effect - {upon a natural community} Direct contamination, destruction, or that which contributes to the contamination or destruction of a natural community, or portion thereof, to the degree that its environmental benefits are eliminated, reduced, impaired, or where there is a resultant threat to its present or future function.

Altered Natural Communities - Natural resources which have been substantially affected by development but continue to provide some environmental benefit.

Ambient - Circulating or surrounding.

Air Quality Control Region - Any air quality control region designated pursuant to Section 107 of the Clean Air Act. The boundaries of the air quality control regions in Florida are set forth in 40 CFR Sections 81.49, 81.68, 81.95, 81.96, and 81.97.

Aquatic Preserves - Submerged lands owned by the State of Florida as identified in Chapter 258, Florida Statutes, which have been set aside in an essentially natural or existing condition for the benefit of future generations.

Aquifer - A geologic formation, group of formations, or part of a formation that will yield significant quantities of water to streams, wells and springs. (See Floridan Aquifer System; Intermediate Aquifer System; and Surficial Aquifer System.)

Aquifer Protection Zones - Those areas within "Protected Recharge Areas," "Areas Most Vulnerable to Contamination" or springsheds. In the Wekiva Study Area this term shall include areas within or adjacent to "Most Effective Recharge Areas".

Aquifer Vulnerability - 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 hydrogeologic conditions.

Aquifer vulnerability map or assessment - A modeling technique developed by the Florida Geological Survey to delineate relative degrees of vulnerability to an aquifer based on available data. An aquifer vulnerability map may be prepared for any aquifer. These techniques are documented in FGS Reports "Wekiva Aquifer Vulnerability Assessment" (RI 104) and "Florida Aquifer Vulnerability Assess (FAVA): Contamination potential of Florida's principal aquifer systems."

Area Most Vulnerable to Contamination - Areas more vulnerable to contamination from land surface as determined by the best available aquifer vulnerability maps.

Area of Special Flood Hazard - Any locality that, because of topography, soil limitations or geographic location, is subject to periodic or occasional inundation.

Artificial Waterway - Dredged canal created by man in upland or wetland.

Assimilative Capacity - The greatest amount of a pollutant loading that a water or wetland can receive without violating state water quality standards.

Best Management Practices (BMP) - Management or design criteria adopted for area wide application, usually associated with agricultural, horticultural, or commercial forestry pursuits.

Bicycle and Pedestrian Ways - Any road, path, or way which is open to bicycle travel and travel afoot and from which motor vehicles are excluded.

Biohazardous Waste - Any solid waste or liquid waste which may present a threat of infection to humans. The term includes, but is not limited to, nonliquid human tissue and body parts; laboratory and veterinary waste which contain human-disease-causing agents; used disposal sharps, human blood, and human blood products and body fluids; and other materials which in the opinion of the Florida Department of Health and Rehabilitative Services represent a significant risk of infection to persons outside the generating facility.

Biological Waste - Solid waste that causes or has the capability of causing disease or infection and includes, but is not limited to, biohazardous waste, diseased or dead animals, and other wastes capable of transmitting pathogens to humans or animals.

Borrow Activities - See Excavation.

Buffer Zone - Area which shields a natural community of protected species habitat by prohibiting development activities and removal of native vegetation. Such zones use naturally occurring vegetation or open space for the purposes of limiting the effects of development on natural systems or the recreational value of natural features.

Common Area - Any part of a development designed and intended to be used in common by the owners, residents or tenants of the development.

Common Open Space - All open space, natural areas and recreational areas which are part of a common area.

Compensating Storage - Physical replacement of natural flood water storage volumes that would be displaced in areas of special flood hazard due to development. The volume of compensating storage shall be calculated assuming normal wet season ground water levels.

Comprehensive Plan - A plan adopted pursuant to the "Local Comprehensive Planning and Land Development Regulation Act" and meeting the requirements of ss. 163.3177 and 163.3178.

Cone of Depression - A depression in the potentiometric surface of a body of ground water, which has the shape of an inverted cone which can develop around a well from which water is being withdrawn or around a sensitive karst feature.

Cone of Influence - The area in an aquifer around a well or wellfield where pumping affects the potentiometric surface in that aquifer.

Confined Aquifer - An aquifer that is bounded above and below by impermeable beds or by beds of distinctly lower permeability than that of the aquifer itself.

Confining Layer - see Confining Unit

Confining Unit - A formation that does not conduct readily water and/or is less permeable than the aquifers above or below it. When a confining unit is above an aquifer, recharge to or discharge from that aquifer is restricted by that confining layer.

Connected Wetland - A vegetative community which is part of a flowing water system or a runoff system where waters flow through during times of heavy rainfall.

Conservation - The prudent use of natural resources commensurate with environmental functions.

Conservation Plan - A formal document, prepared or approved by the Lake County Soil and Water Conservation District organized pursuant to Chapter 582, Florida Statutes, which outlines a system of management practices to control soil erosion, reduce sediment loss or protect the water quality on a specific parcel.

Conservation Open Space - Land area that is suitable for conservation uses.

Conservation Uses - Activities within land areas designated for the purpose of conserving or protecting natural resources or environmental quality and includes areas designated for such purpose as flood control, protection of quality or quantity of groundwater of surface water, floodplain management, fisheries management, or protection of vegetative communities or wildlife habitat.

Critical - Of special importance, requiring high-priority treatment, usually applied to resource areas of special importance due to their usefulness, hazard, or pending impact from alteration.

Critical Habitat - The viable areas of habitation including feeding, breeding, and nesting areas for species of Special Concern as well as Endangered and Threatened species as confirmed by appropriate jurisdictional agency documentation, or by reports which may be submitted by an applicant requesting a development order on a site containing an area of such habitation by the above noted species. The extent of these areas shall have a definitive boundary which may vary in extent based on the individual species.

Depression Basins - Natural depression watershed areas which have no positive outfall for surface water runoff except by infiltration or evapotranspiration.

Development - As defined in 380.04 Florida Statutes.

Development Permit - Includes any building permit, zoning permit, subdivision approval, rezoning, certification, special exception, variance, or any other official action of local government having the effect of permitting the development of land.

Development Order - Means any order granting, denying, or granting with conditions and application for a development permit.

Development Rights - The potential for the improvement of a parcel of real property, measured in dwelling units per gross acre, or gross leasable area, which exists because of the land use designation or zoning classification of the parcel.

Endangered Species - Any species of flora and/or fauna naturally occurring in Florida, whose prospects of survival are in jeopardy due to modification or loss of habitat; over utilization for commercial, sporting, scientific, or educational purposes; disease; predation; inadequacy of regulatory mechanisms; or other natural or manmade factors affecting its continued existence. Endangered species include, at a minimum, those identified as such in Chapter 39-27, Florida Administrative Code, s. 581.185, Florida Statutes and 50 of Federal Regulations, Sections 17.11 and 17.12.

Environmentally Sensitive - Descriptive of lands which, by virtue of some qualifying environmental characteristic are regulated by either the Florida Department of Natural Resources, the Florida Department of Environmental Regulation, the Southwest Florida or St. Johns River Water Management District, or any other governmental agency empowered by law for such regulation. Environmentally sensitive lands include, at a minimum, rivers, streams, lakes, springs, sinkholes, wetlands, floodplains, high recharge areas, and habitat inhabited by designated species.

Excavation - The removal and transport of earth materials (sometimes referred to as "borrow" activities). This definition excludes commercial mining operations (such as limerock and sand mining operations), excavation associated with construction of storm water management facilities, excavation activities governed by the Lake County Subdivision Regulations, and excavation associated with sod farming and removal activities, and tree farming activities.

Exotic Species - A non-native plant or animal.

Extraction - The removal of resources from their location so as to make them suitable for commercial, industrial, or construction use; but does not include excavation solely in aid of onsite farming or onsite construction, nor the process of searching, prospecting, exploring, or investigating for resources for drilling.

Fill - Raising the surface level of the land with suitable soil or clean fill material.

Fish and Wildlife - Any member of the animal kingdom, including, but not limited to, any mammal, fish, bird, amphibian, reptile, mollusk, crustacean, arthropod, or other invertebrate.

Flatwoods -- Broad, nearly level, low ridges of dominantly poorly drained soils characteristically vegetated with open woods of pine and saw palmetto.

Flood or Flooding - The inundation of land by the overflow of a stream basin or depression basin, the accumulation of runoff, or the rise of ground water.

Flood Plain - Areas inundated during a 100-year flood event or identified by the National Flood Insurance Program as an A Zone or V Zone on Flood Insurance Rate Maps of Flood Hazard Boundary Maps.

Floodway - The channel of a river or other watercourse of the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one (1) foot.

Floridan Aquifer System or FAS - An aquifer system in the limestones and dolomites of the carbonate unit that is below the surficial aquifer system. It underlies all of Lake County and is the principal source of the water used in Lake County. It is composed of thick sequences of carbonate rocks (limestone, dolomitic limestones, and dolomite) of Eocene to Oligocene age that are generally high in permeability and hydraulically connected to each other in varying degrees. The FAS has two major water-bearing zones; the Upper Floridan and Lower Floridan zones. These zones are separated by a lower permeability carbonates.

Geophysical - Of or pertaining to the physical properties of earth materials and their chemical composition and transformations.

Ground Water - Water found below land surface in an aquifer. (Moisture present in unsaturated soil is not considered ground water.)

Habitat - The natural abode of a plant or animal. The kind of environment in which a plant or animal normally lives, as opposed to the range, or spatial distribution.

Habitat Corridors - A naturally-vegetated transportation route for plants and animals that connects larger natural areas. Wild plants and animals typically require avenues for dispersal to different feeding and breeding sites in order to survive.

Hazardous Waste - Solid waste, or a combination of solid wastes, which, because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or may pose a substantial present or potential hazard to human health or the environment when improperly transported, disposed of, stored, treated or otherwise managed.

Hydrogeologic - Of or pertaining to the science that deals with subsurface waters and with related geologic aspects of surface water. The movement patterns and chemistry of ground water are heavily dependent on geology of the area.

Hydrologic – Of or pertaining to the science that deals with water, its properties, circulation, and distribution on and under the earth's surface and in the atmosphere, from the moment of its precipitation until it is returned to the atmosphere through evapotranspiration or is discharged into the ocean.

Hydroperiod - The annual period of inundation.

Hydric Soils - Soil that is wet long enough to periodically produce anaerobic conditions, thereby influencing the growth of plants.

Important Agricultural Areas - The important farmlands that are identified by the U. S. Soil Conservation Service. These include prime and unique farmlands, and additional farmland of statewide and local importance as described in 7 Code of Federal Regulations 657.

Important Ecological Community - An assemblage of native biota which may be easily recognized because of characteristic species or overall appearance, and which is sustainable through maintenance or ecosystem regulators such as fire to period inundation.

Injection Well - A well into which fluids are drained, either by gravity flow or under pressure. The terms deep well and shallow well injection have no real significance relative to the actual depth of a well.

Intermediate Aquifer System - that the aquifer system that lies between the overlying surficial aquifer system and the underlying Floridan aquifer system. This system contains ground water under confined conditions. This aquifer is not present in all areas of Lake County.

Isolated Wetland - Cypress domes or shallow marshes where no naturally occurring outfall exists.

Karst Area - A terrane, generally underlain by limestone or dolostone, in which the topography is chiefly formed by the dissolution of rocks, and which may be characterized by karst features.

Karst Features – Including but not limited to springs, sinkholes, sinking streams, closed depressions, subterranean drainage and caves.

Land Application - The act of disposing of sewage effluent and/or sludge on the earth's surface. There are three primary types of land application: (1) overland flow, which includes depository sludge in landfills, (2) rapid rate infiltration, such as in percolation ponds, and (3) slow rate infiltration such as spray irrigation.

Level of Service - An indicator of the extent or degree of service provided by or proposed to be provided by a facility based on and related to the operational characteristics of the facility. Level of service shall indicate the capacity per unit of demand for each public facility.

Listed - Refers to those lists of endangered species which are not accompanied by protection legislation, such as rare and endangered species lists compiled by academic or conservation groups.

Mining - The extraction of natural deposits from the earth which are regulated by the State of Florida under Part II of Chapter 211 and Chapter 378, Florida Statutes, and by Lake County Ordinance 68.

Minerals – Any naturally formed inorganic element or compound. All solid minerals, including clay, gravel, phosphate rock, limestone, dolomite, shells (excluding live shellfish), stone, sand, heavy minerals, and any rare earths, which are contained in the soils or waters of the state.

Most Effective Recharge Areas - Type "A" Hydrologic soils, defined by the NRCS Soil Survey, unless otherwise provided for by rule of the St Johns River Water Management District. Applies only to the Wekiva.

Mounding - Filling the area of the absorption field of a septic tank with suitable soil material to raise it above the water table to meet state and local regulations.

National Ambient Air Quality Standards (NAAQS) - Restrictions established by the U.S. EPA pursuant to Section 109 of the Clean Air Act to limit the quality or concentration of an air pollutant that may be allowed to exist in the ambient air for any specific period of time. Those air pollutants for which standards exist are: carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide and total suspended particulates.

Native Biota - The natural occurrence of species of plants and animals in a specific region. Native biota does not include species that are exotic or introduced by humans and that have become "naturalized".

Native Vegetation - Plants that are indigenous to the State of Florida.

Natural Drainage Features - The naturally occurring features of an area which accommodates the flow of rainfall runoff, such as streams, rivers, lakes and wetlands.

Natural Ecological Communities - An ecological community is an assemblage of plants and animals that is: (1) repeatable in general terms under similar physical conditions over the landscape, (2) capable of self-maintenance, (3) can be recognized as being distinct from adjoining communities, and (4) has not been significantly altered by previous manmade activities. A community can usually be recognized by a few key species of plants. A natural ecological community is one that is important as a reserve of biological diversity.

Natural Reservation - Areas designated for conservation purposes and operated by contractual agreement with or managed by a federal, state, regional, or local government or non-profit agency such as national parks, state parks, lands purchased under the Save Our Coasts, Conservation and Recreational Lands or Save Our Rivers programs, sanctuaries, preserves, monuments, archaeological sites, historic sites, wildlife management areas, national seashores, and Outstanding Florida Waters.

Natural Resources - Natural resources include, at a minimum, all the natural features associated with the land, air, water, groundwater, flora and fauna, as well as other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the State of Florida and situated in an area of critical state concern or offshore from an area of critical state concern.

Nonattainment - Any area not meeting ambient air quality standards and designated as a nonattainment area under Section 17-2.410, F.A.C. for any of the NAAQS listed air pollutants.

Non-point Source Pollution - Contamination arising from the discharge of wastes to the land, soils, water bodies or to the atmosphere from dispersed sources.

Paleontologic - Dealing with the study of life in past geologic time based on fossils, plants and animals.

Percolate or Percolation - The movement of water through small openings within porous materials, generally soils.

Permeability - The capacity of a formation or soil for transmitting water.

Point source pollution - Contamination arising from direct discharge of wastes to water bodies, geologic formation or to the atmosphere. This can be through a pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operations or vessel or other floating craft or other concentrated means from which pollutants are discharged.

Ponding - Standing water on soils in closed depressions.

Potentiometric Map or "Pot" Map - A subsurface contour map showing the elevation of a potentiometric surface. Maps of the potentiometric surface of the Floridan aquifer are prepared twice a year by the US Geological Survey in Florida.

Potentiometric Surface - An imaginary surface representing the total head of ground water and defined by the level to which water will rise in a tightly cased well. The potentiometric surface is related to a specific aquifer, usually the Floridan.

Preservation - The perpetual maintenance of areas in their natural state.

Productivity (soil) - The capacity of a soil for producing a specified plant or sequence of plants under specified management.

Protected - Refers to official Federal, State or international treaty lists which provide legal protection for the rare and endangered species they list.

Protected recharge areas - Areas with a natural potential for an average annual recharge rate to the Florida aquifer of 10 inches or greater.

Rare species - Species which, although not presently endangered or threatened as defined, are potentially at risk because they are found only within a restricted geographic area or habitat in the State, or are sparsely distributed over a wider range.

Recharge - The process of adding water to an aquifer. It is commonly described in inches per year. Recharge can be influenced by development. Increasing the rate of stormwater runoff and building impervious surfaces—such as roads, parking lots, and buildings—can alter both the rate and volume of recharge and reduce the area available for rainfall percolation.

Recharge Area - Land or water areas through which groundwater is replenished. The surficial aquifer system is recharged by rainfall and surface water. Recharge can be augmented locally from other sources. Examples of these other sources are wastewater or reuse water land application, rapid-infiltration basins, and septic systems. Where the water level in the surficial

aquifer is higher than the potentiometric surface of the Floridan aquifer, the surficial aquifer system has the potential to recharge the Floridan aquifer. These areas include much of Lake County.

Reclamation - The filling, backfilling, restructuring, reshaping, and/or revegetation within and around a mine, land excavation or filling area to a safe and aesthetic condition.

Relief - The elevations of inequalities of a land surface, considered collectively.

Reuse - The planned activity or activities that are intended for the land excavation or filling area and/or abutting land after the excavation or filling ceases and reclamation is completed or, the reuse of wastewater generally treated to drinking water standards.

Runoff - The precipitation that does not infiltrate into the soil.

Secondary Treatment - The second step in wastewater processing whereby most of the organic material in sewage areas is broken down to simpler, inorganic molecules. The biological demands of sewage, such as the heavy use of oxygen, are reduced at this step. This kind of treatment is commonly the last step in sewage treatment plants.

Seepage - See percolation.

Sensitive - Areas where natural resource values or hazards play a primary role in land suitability and capability. These include areas with special natural resource characteristics which may be described as fragile and subject to harm with a minimal amount of alteration.

Sensitive Karst Features – A karst feature where at the surface, the feature is directly open to the limestone of the Floridan Aquifer System or, a sinkhole or closed depression where there is no confining layer below the bottom of the sinkhole or depression allowing water to rapidly percolate into the FAS. Sinkholes and other karst features that are directly open to limestone of the FAS, or are located within areas more vulnerable to contamination as determined by the Wekiva Aquifer Vulnerability Assessment (WAVA) or the best available Floridan aquifer vulnerable assessment map shall be considered sensitive karst features. Should an applicant believe that a karst feature(s) on their site is not sensitive they shall provide site-specific report prepared by a qualified professional to characterize the karst feature(s) is not sensitive to supplement the aquifer vulnerability assessment. The testing data used to prepare this report should consist of relevant geologic, geophysical, geotechnical and/or ground water quality data collected on site.

Sheet flow - The pattern of water movement where water moves in a broad-spread, shallow layer across the surface. This is typical in wetlands, marshes, grasslands, pine flatwoods, and prairies.

Significant Natural Upland Community or Significant Upland Community - Those sites identified on the Conservation Element as "Significant Upland Communities".

Silviculture - Of or pertaining to commercial forestry.

Sinkhole - A naturally occurring, karst feature on the land surface typically measured in meters or tens of meters, typically circular and/or conical in nature, characterized by closed depressional contours, internal drainage and side slopes that are notably steeper than the natural slope of the surrounding land surface. A sinkhole may or may not exhibit an open connection into the Floridan aquifer. It also may or may not contain water. To be characterized a sinkhole, the settlement that caused the depression must have resulted from subsidence or raveling of soils, sediments, or rock materials into subterranean voids created by the effect of water on a limestone or similar rock formation.

Slough - A broad, slightly depressional, poorly defined drainageway.

Soil - A natural three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Solid Waste - Means sludge from a waste treatment works, water supply treatment plant, or air pollution control facility, or garbage, rubbish, refuse, or other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from domestic, industrial, commercial, mining, agricultural, or governmental operations.

Source Separation - The separation of the components of solid waste (glass, metal, paper, chemicals, plastic, kitchen wastes, etc.) at the source of generation before disposal to allow for alternative waste management practices such as reuse, recycling, and energy recovery.

Species of Special Concern - Fauna identified in Section 39-27.005 F.A.C. which warrants special protection, recognition or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a Threatened species; may already meet certain criteria for designation as a Threatened species but for which conclusive data is limited or lacking; may

occupy such an unusually vital and essential ecological niche that should it decline significantly in numbers or distribution other species would be adversely affected to a significant degree; or has not sufficiently recovered from past population depletion.

Spring – A point where underground water emerges onto the Earth's surface (including at the bottom of a stream, lake or the ocean). The image of a trickle of water springing from a hillside hardly matches that of a vast cave pouring forth a river, but both are springs.

Springshed - Those areas within ground- and surface-water basins that contribute to the discharge of the spring. AKA a spring recharge basin.

Stream - Any river, creek, slough, or natural watercourse in which water usually flows in a defined bed or channel. It is not essential that the flowing be uniform or uninterrupted. The fact that some part of the bed or channel has been dredged or improved does not prevent the watercourse from being a stream.

Stream-to-Sink Basins - A drainage basin typified by surface streams or runoff discharging into a karst area that is directly open to the limestone of the FAS. There are at least two stream-to-sink basins in Lake County. These are in Shockley Heights in the Ocala National Forest and Wolf Branch basin just east of Mt. Dora.

Stream Basins - Watershed areas which drain surface water runoff via streams and channels, both natural and manmade.

Stream Crossing - Transportation and utility crossings of stream basins.

Structure - Anything constructed or erected, the use of which requires permanent location on the ground or attachment to something having a permanent location on the ground as well as a mobile home.

Surface Waters - Water upon the surface of the earth, whether contained in bounds created naturally or artificially or diffused. Water from natural springs shall be classified as surface water when it exits from the spring onto the earth's surface.

Surficial Aquifer System or water table aquifer - An aquifer where the ground water is at atmospheric pressure, i.e. not confined and has no impermeable layer between the zone of saturation and water table. It consists of consists of the surficial sands, silts and clays and in some cases limestone where there is no confining layer.

Tertiary Treatment - The third and usually most expensive in a series of processes whereby pollutants such as phosphorous or nitrogen compounds are removed from wastewater. Most sewage treatment plants are only capable of secondary treatment of wastewater.

Threatened Species - Any species of flora or fauna naturally occurring in Florida which may not be in immediate danger of extinction, but which exists in such small populations as to become endangered if it is subjected to increased stress as a result of further modification of its environment. Threatened species include, at a minimum, those identified as such in Chapter 39-27, Florida Administrative Code, s. 581.185, Florida Statutes and 50 of Federal Regulations, Sections 17.11 and 17.12.

Type A soils - A soil group defined by the NRCS as having high infiltration rates.

Unconfined Aquifer - See surficial aquifer system.

Upland Communities - Those non-wetland, non-aquatic areas not subject to regular flooding. These include: scrub, sandhill, xeric hammock, upland pine forest, mesic hammock, slope forest, mesic flatwoods and scrubby flatwoods. For this element, communities that do not consistently meet legal criteria for protection as a wetland have also been included. These are floodplain forest, baygall, wet flatwoods, and hydric hammocks.

Vertical Drainage - The characteristic of porous soils and rocks whereby water pools only temporarily and cannot form perennial streams on the earth's surface; instead, water flows straight down through soils and rock to an underlying aquifer.

Vegetative Communities - Ecological communities, such as oak hammocks or cypress swamps, which are classified based on the presence of certain soils, vegetation and animals.

Water - Any and all water on or beneath the surface of the ground or in the atmosphere, including natural or artificial watercourses, lakes, ponds, or diffused surface water and water percolating, standing, or flowing, beneath the surface of ground, as well as all coastal waters within the jurisdiction of the state.

Water table - The ground water surface in the surficial aquifer. It is defined by the levels at which water stands in wells that penetrate the water body just far enough to hold standing water.

Wetlands - Lands which are transitional between terrestrial (upland) and aquatic (open water) systems where the water table is usually at or near the surface, or where the land is covered by shallow water. Such lands are predominantly characterized by hydrophytic vegetation identified in Section 17-4.022, F.A.C. The presence of hydric soils determined by the U.S. Soil

Conservation Service, and other indicators of regular or periodic inundation, shall be used as presumptive evidence of the presence of a wetland area. The existence and extent of these shall be determined by the jurisdictional limits defined by Chapter 17-4, F.A.C. and implemented by the Florida Department of Environmental Regulation, or as defined within Chapter 40D-4 and implemented by the Southwest Florida District or within Chapter 40C-4 and implemented by the St. Johns River Water Management District.

Wildlife - See fish and wildlife.

Woodland Management Plan - A document developed by or in coordination with the Florida Department of Agriculture's Division of Forestry for areas containing commercially valuable forests, developing forests, or other valuable forested areas.

GOAL AQUIFER 1

To maintain an adequate quality and quantity of aquifer recharge to protect potable water supplies, and ensure the protection of natural systems.

OBJECTIVE 1.0 METHODOLOGY

Lake County will coordinate with federal, state, and local agencies to study and describe aquifer recharge areas, and the vulnerability of ground water resources.

1.1 Aquifer Recharge Maps

Lake County shall utilize best available aquifer recharge maps created by local, regional, state, and federal agencies.

1.2 Floridan Aquifer Vulnerability Assessment (FAVA) Map

Lake County shall coordinate with the Florida Geological Survey, Water Management Districts and FDEP to 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, including primary, secondary and tertiary protection zones, karst features, springs and sinks.

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 data specific to Lake County, will help determine which areas within the county are the most and least vulnerable and allow for establishment of appropriate development standards. The County will also utilize the report titled Florida Geological Survey Report on Investigation 104: Wekiva Aquifer Vulnerability Assessment (WAVA).

Some of the applications of the FAVA map include wellhead protection, source-water protection, recharge protection, vulnerability indices, contaminant-specific maps, land acquisition, total maximum daily loads (TMDLs), surface-water/ground-water interactions, water-quality management tool, resource planning strategies and policies, prioritization of areas of critical concern, design of monitoring plans, best management practices springshed protection, watershed and ecosystem comprehensive planning, land-use planning/zoning, land conservation and as a component of ground-water susceptibility models.

1.3 Springshed Maps

Lake County shall utilize best available springshed maps created by state, regional and federal agencies.

Lake County will contribute information and monitoring data to assist federal, state, and local agencies in studying the impacts of all land uses on hydrologic resources including but not limited to recharge areas, springs, wetlands and land surrounding Outstanding Florida Waters located in Lake County. The Lake County Comprehensive Plan shall be amended, and the Land Development Regulations updated, as necessary based on these studies and best available information from these agencies.

The position of the springshed boundary is time dependent. That is, the boundary is representative of a “snapshot” in time, rather than a permanent condition. Thus, the boundaries of springsheds are dynamic and vary as a result of a changing potentiometric surface. Should a site-specific study be performed to meet the Land Development Regulation requirements of the development within a springshed, the most conservative USGS potentiometric map available shall be used.

1.4 Aquifer Monitoring Programs

Lake County will cooperate with federal, state, regional water management, local agencies, local governments, and interest groups in the implementation of on-going aquifer-monitoring programs.

1.5 Development of Local Regulations

Lake County shall develop local regulations for inclusion into the Land Development Regulations, including a Lake County-specific scale version of the FGS FAVA map, to augment state and federal regulations pertaining to the protection of the surficial and Floridan aquifers.

1.6 Intergovernmental Coordination

Lake County shall collaborate with federal, state, regional, and local agencies, including the Water Management Districts and local agencies in studying the surficial and Floridan aquifers, springs, karst areas and surface waters as they apply, and in determining the most appropriate actions to take in order to protect these resources. Approaches and measures to accomplish this shall be developed consistent with the intergovernmental coordination element of the comprehensive plan.

OBJECTIVE 2.0 CONSERVATION OF THE AQUIFER RESOURCE

The County shall safeguard the quality and quantity of ground water in the surficial and Floridan aquifers, to protect and enhance the capabilities of Aquifer Protection Zones for the present and future water supply of Lake County and ensure protection of natural resources. The following policies shall apply generally within Lake County.

2.1 Water Conserving Plumbing Fixtures

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

2.2 Irrigation Rain Sensors or Soil Moisture Sensors

The County shall require irrigation rain sensors or soil moisture sensors with automatic cut-offs on all new irrigation systems in accordance with the Florida Standard Building Code and/or Water Management District rules.

2.3 Golf Course Ordinance

Lake County shall comply with the adopted golf course ordinance as it applies to, water conservation, reuse and drought management in order to limit the impact of golf courses on ground water resources.

2.4 Surface and Subsurface Hydrology

Lake County shall discourage any land use that would significantly alter surface and ground water levels, surface and ground water water quality, recharge; or have an adverse effect on the environment.

2.5 Best Management Practices

Lake County shall require the use of best management practices and performance standards to maximize open space, limit impervious surfaces, promote protection of natural vegetation, buffer karst areas, maximize recharge volumes, minimize the use of potable water for non-potable uses, encourage reuse of water, and treat recharge stormwater to protect ground water quality. Such practices and standards shall be included in the Land Development Regulations.

2.6 Recharge Projects

Lake County will continue to work with federal, state, and regional agencies to evaluate potential projects that would allow for increased recharge to occur. The County shall seek to partner with federal, state, regional, and local agencies and jurisdictions for funding, technical assistance, and implementation of recharge projects. Based upon the results of analysis, the County may implement additional recharge projects in suitable locations. The County shall focus recharge enhancement projects in areas most susceptible to harm from insufficient groundwater volume, such as the Wekiva Study Area.

2.7 Minimizing Impact to Floodplains

The County shall maintain or improve the quality and function of drainage systems, ground and surface waterways, recharge areas and associated natural resources through an emphasis on non-structural approaches to floodplain management. Compensating storage shall be required for development in floodplains.

2.8 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, 5) benefits of drought resistant plants, and 6) methods of reducing pollution and nutrient loads to waterways and aquifers through an education program that consists of, at a minimum, brochures, a speakers bureau, and slide show. The County shall also maintain, update, enhance and promote the Web-based "Lake County Water Resource Atlas."

OBJECTIVE 3.0 PROTECTION OF RECHARGE AREAS, AREAS OF AQUIFER VULNERABILITY, AND SPRINGSHEDS

Lake County recognizes the need to provide special protection of recharge areas defined as protected recharge areas, most effective recharge areas, areas vulnerable to aquifer contamination, and springsheds in order to safeguard natural systems and water supplies. The following policies pertain to these areas.

3.1 Protection Strategies

The County will actively pursue the following to enhance the protection of groundwater resources:

- Institute BMPs for stormwater management and use of low impact design options through design, retrofit and maintenance of stormwater management facilities;
- Heighten public education targeted to homeowners regarding proper lawn and landscaped area fertilization and irrigation and maintenance of stormwater systems;
- Emphasize use of "right plant-right place" and Florida Friendly landscaping approaches to lawn and landscape design;
- Encourage the collection of lawn and landscaping debris to reduce nutrient loading to the aquifer;
- Establish water conservation programs;
- Foster local stewardship "adopt a springs" type programs and other incentive and volunteer springshed awareness and protection programs
- Adopt state criteria, best management practices or equivalent for the design and construction of stormwater management systems in Aquifer Protection Zones and karst areas;
- Provide pre-treatment, in the form of swales, berms, ponds, or dry basins, to runoff that currently discharges directly into wetlands, and in Aquifer Protection Zones and karst areas.

3.2 Emphasis on Low Intensity Use

Within Aquifer Protection Zones and karst areas, existing low intensity land uses shall be maintained as the best option for protecting the quality and quantity and groundwater resources.

3.3 Protection of Recharge Volume

In addition to requiring minimum level of service standards established by the Comprehensive Plan Stormwater Sub-Element, the County shall ensure that post-development recharge volume conditions approximate pre-development recharge volume conditions within Aquifer Protection Zones. This shall be accomplished through implementation of Land Development Regulations by requiring that the first three inches of stormwater be retained on site. As an alternative the applicant may conduct a hydrologic survey and site analysis to demonstrate that post-development recharge is equal to or greater than pre-development recharge. The County shall require compliance with all state and water management district rules pertaining to the design of stormwater management systems in Most Effective Recharge areas located wholly or partially within the WSA.

3.4 Design Strategies for Aquifer Recharge Protection

Development within an Aquifer Protection Zones shall be required to maintain pre-development net retention in a manner that protects ground and surface water quality. Exemptions may be given for agricultural activities utilizing Best Management Practices adopted by federal, state, and regional that protect ground and surface water quality. The use of stormwater capture, swales, dry wells, grass parking, porous pavement, pervious concrete, turf blocks and other innovative technologies shall be encouraged as a method of protecting aquifer recharge. Porous pavement, pervious concrete and turf blocks however shall not be used to completely fulfill this requirement because these materials tend to become impervious over time.

3.5 Secure Lands for Aquifer Protection

Where feasible, Lake County shall purchase or secure conservation easements on lands that contains Aquifer Protection Zones and property that contains unique or sensitive karst features.

3.6 Site Specific Review

The Land Development Regulations shall include the requirement of a hydrogeologic report for all Aquifer Protection Zones as part of site evaluation prior to development.

In the event that the applicant disputes a determination by the county that a site is located within an Aquifer Protection Zone, the applicant may, at their expense, prepare a site-specific study performed by a qualified Florida Professional Geologist or Engineer to determine if the site lies within an Aquifer Protection Zone. This report will be provided to the appropriate agency for review and consideration. Should a site-specific study be performed within a springshed, the most conservative USGS potentiometric map available shall be used.

3.7 Land Development Regulations

The County shall adopt Land Development Regulations for protected recharge areas, most effective recharge areas, areas vulnerable to aquifer contamination, and springsheds. The County shall utilize the DEP/DCA publication "Protecting Florida Springs: Land Use Planning Strategies and Best Management Practices" to develop these land development regulations to the greatest extent possible. These land development regulations shall include but not be limited to the following:

- 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;
- Requirements to utilize on-site retention of rain and storm water for active and passive irrigation where feasible and effective;
- Requirements to implement "right plant – right place" and water wise landscaping standards;
- Minimum open space standards;
- Design standards for natural water retention areas;
- Standards to ensure water quality;
- Protection of the aquifer from saltwater intrusion;
- Regulations regarding the use of pesticides and fertilizers;
- Regulations that protect sensitive karst features such as springs and sinks as undeveloped open space with ample buffering and native vegetation; and
- Regulations regarding the use and maintenance of onsite sewage treatment and disposal systems (OSTDS).

3.8 Sinkholes and Karst Features

The County shall require a site-specific scientific study to evaluate the risks of development in or adjacent to sinkholes and karst features. Additionally, the type, density and intensity of land uses established adjacent to a sinkhole or karst features shall be limited to activities that will not result in further expansion of the hole or that would negatively impact ground water quality. When development in the vicinity of a sinkhole is proposed, appropriate setbacks and buffering shall be required. Recommendations for development shall be based on a site specific study by a qualified licensed professional, either a State licensed professional engineer or professional geologist paid for by the developer. Specific setbacks and buffering proposed shall require approval by qualified county staff.

Stormwater management systems shall be designed to assure adequate treatment of the stormwater before it can enter a sinkhole or karst features, and to preclude the formation of solution pipe sinkholes or subsidence. Should a sinkhole or karst features be directly open to the Floridan aquifer, a diversion of surface water or stormwater directly or indirectly to the sinkhole shall be prohibited.

3.9 Protocol for Determining Suitability

The County shall develop protocols for review in determining the suitability of a site, with respect to Aquifer Protection Zones and karst features for a proposed change in future land use, zoning, or conditional use.

3.10 Homeowner Literature

As a condition of development approval, the County shall require that when development occurs within or adjacent to environmentally sensitive areas including aquifer protection zones, a best management practices document shall be developed for the education of homeowners or property owners. This document shall include guidelines that reduce the risk of contamination or harm to groundwater resources. The developer shall prepare and provide for distribution, brochures to enhance public awareness of these resources.

3.11 Evaluation of Future Land Use and Zoning

The County shall require that a report by a licensed professional geologist be submitted with a future land use amendment or rezoning application to provide an analysis of the site for the presence of protected recharge areas, most effective recharge areas, areas most vulnerable to contamination, springsheds, karst features, and sinkholes.

OBJECTIVE 4.0 PREVENTION OF CONTAMINATION OF AQUIFER SYSTEMS

The County shall evaluate, commercial, industrial, business and residential land use, as well as proposed land use amendments and rezonings, to protect the County's ground water resources and prevent contamination of the aquifer.

4.1 Land Development Regulation Updates

Lake County shall amend its Comprehensive Plan and update its Land Development Regulations, using information collected by federal, state, regional water management, and local agencies during future ground water quality studies. These updates shall address but are not limited to:

- Public well field siting, per the adopted Wellhead Protection Ordinance;
- Siting of industrial land uses which use regulated substances or generate hazardous waste;
- Siting of additional household hazardous waste collection facilities for households and conditionally exempt small quantity generators of hazardous waste;
- Protection of the aquifer from saltwater intrusion;
- Activities regarding the use of regulated substances, including but not limited to pesticides and fertilizers.

4.2 Continued Enforcement of Regulations

Lake County shall cooperate with federal, state, and local agencies in enforcing regulations pertaining to the protection of the surficial and Floridan aquifers from regulated materials and wastes including those material governed by 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, regional water management, and Local codes requiring the management of materials that may be harmful or dangerous to the environment.

4.3 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..

4.4 Regulation of Hazardous Wastes in Protected Aquifer Recharge Areas and in an Area Most Vulnerable to Contamination

Lake County shall coordinate with FDEP to regulate the disposal of hazardous wastes in all areas of the County. Small quantity generator (<1000 kg per month) businesses that use regulated materials or generate hazardous waste shall be regulated so as to ensure that proper handling and disposal practices are adhered to. The location of new businesses that use regulated materials or generate hazardous waste shall be restricted within Aquifer Protection Zones. Large quantity generators (>1000 kg per month) may be prohibited in Aquifer Protection Zones.

4.5 Coordinate Facilities producing, using, handling and storing regulated materials with Land Use

The County shall utilize the information provided by the inventory of facilities producing, using, handling and storing regulated materials in making land use decisions to avoid incompatible development in Aquifer Protection Zones.