Sample Springs Protection Measures by County and Springshed	
County	**Summary/Excerpts of Comprehensive Plan Provisions** (keywords highlighted)
Choctawhatchee – St Andrew	
Walton	AQUIFER RECHARGE SUB-ELEMENT Policy I-5.1.5: "Industries and other businesses that use, sell, trade or generate hazardous waste or materials shall be sited, designed, operated and monitored to ensure that no hazardous materials or waste degrade groundwater or surface waters. Each business of this type shall prepare a spill containment, cleanup and reporting plan as required by state or federal law. Reporting must be undertaken immediately to appropriate county and state officials. Furthermore, such businesses shall not be located in floodprone areas, in areas of high or moderate aquifer recharge potential, areas within 1,000 feet of a karst spring, or within 500 feet of an existing or planned potable water well as identified in a public supply system's master plan. Areas of "high or moderate aquifer recharge potential" shall be defined as those areas that are shown as the Floridian Aquifer High Recharge Area on the West Florida Regional Planning Council maps of Regionally Significant Resources (1996)." Objective I-5.2: "Walton County shall develop protection strategy for springsheds through the following actions" (Policy I-5.2.1): (A) Coordinate with the Northwest Florida Water Management District to develop county design criteria for stormwater management practices that minimize the leaching or discharge of nutrients or contaminants within the springsheds. The County will use karst area requirements set forth in *Protecting Florida's Springs: Land Use Planning Strategies and Best Management Practices* (November, 2002); (B) Seek funding for the Florida Yards and Neighborhoods program to inform the public about proper lawn and landscaped area fertilization and irrigation; (C) Incorporate the principles of the Florida Yards and Neighborhoods program into local landscaping ordinances; (D) Coordinate water conservation programs with public, and private non-profit water suppliers; (E) Inform the public about the proper operation and maintenance of septic tanks. Assist the Florida Department of Health local septic management program to assure that these systems are regularly inspected, pumped out, and brought up to current standards; (F) Promote the local stewardship "adopt a spring" program; other incentive and volunteer springshed awareness and protection programs; and (G) Pursue grant funding from regional, state, and federal agencies for the acquisition, restoration, protection, and management of springsheds.
Washington	FUTURE LAND USE ELEMENT Policy 6-11.h requires a minimum 100-foot wide natural vegetative buffer for all critical sensitive springshed resources. Based on particular development facts, the County may require greater buffers if the circumstances indicate the need. Policy 6-17: "The County shall allow only the lowest density and intensity land uses in and around critical sensitive springshed resources and sensitive springshed areas that are not already designated as Conservation areas, as detail through Objectives 13 thru 19." (Objective 13 deals with reduction of Green House Gas emissions). Objective 14. Amend the Future Land Use Map to depict a Primary (High Recharge) Springs Protection Area in order to protect 1st, 2nd and 3rd magnitude springs. Implement the protective measures: Subject to the results of the FAVA, a spring protection map serve as the description of the Primary and Secondary springs Protection Zones for Washington County. Policy 14-1: In order to avoid negative impacts to springs, limit or prohibit the following land use activities within the Primary Springs Protection Area: Choctawhatchee River, Holmes Creek, Econfina Creek Springsheds, and the Sandhills Area. Policy 14-2: When heavy industrial uses are permissible according to the land use districts within the Primary Springs Protection Area, a geotechnical study shall be performed in order to determine if the proposed use is acceptable in the proposed location. Objective 15. Amend the Future Land Use Map to depict a Secondary (Moderate Recharge) Springs Protection Area in order to protect 1st, 2nd and 3rd magnitude springs. Policy 15-1: In order to avoid negative impacts to springs, limit or prohibit the following land use activities within the Secondary Springs Protection Area: storing, handling, or generating of hazardous wastes shall be subject to the following policies. Policy 15-2: When heavy industrial uses are permissible according to the land use districts within the Secondary Springs Protection Area, a geotechnical study shall be performed in order to determine if the proposed use is

	acceptable in the proposed location. Policy 15-3: Where it is not possible to fully avoid negative impacts through limiting or prohibiting land use activities, the impact of use and development within the Secondary Springs Protection Area shall be minimized and mitigated to the maximum feasible extent. Objective 16. Development Design Standards - Development within the [Primary/Secondary] Springs Protection Area shall comply with the design standards set forth in the following policies: Policy 16-1: The Citizens Water Advisory Board shall consider and present amendments to the Land Development Code to allow residential development within the [Primary/Secondary] Springs Protection Area under conservation subdivision design standards. Policy 17-1: In order to evaluate the vulnerability of proposed development sites to the leaching of nitrates into groundwater, an application for development approval shall be accompanied by an analysis of the site to determine the location and nature of sinkholes and other karst features of the property, such as stream-to-sink and other direct connections to the aquifer. Policy 17-2: An application for development approval shall be accompanied by a geophysical analysis to determine the depth of the water table, location of the Floridan Aquifer relative to ground surface and thickness and extent of the bedrock or other confining layers over the aquifer. Policy 17-3: An application for development approval shall include documentation to demonstrate that the proposed construction methods are suitable for the underlying geology of the site. Objective 18. Plan Amendments within the [Primary/Secondary] Springs Protection Overlay Zone including; proposed amendments to the comprehensive plan, including amendments to the Future Land Use Map and amendments to the [Primary/Secondary] Springs Protection Element, shall meet the criteria in the following policies. Policy 18-1: Demonstrate that the proposed uses are appropriate, considering the environmentally sensitive nature of the site. Policy 18-2: Demonstrate that the uses permissible in the proposed land use category are able to be developed consistent with Best Management Practices and the specific requirements set forth for the Springs Protection Area. Policy 18-3: Document that the uses permissible in the proposed land use category will not include a concentration or storage of hazardous materials without adequate secondary containment. Policy 18-5: Provide a geophysical analysis with at least the following information: the characteristics of on-site soils; locations of geologic features including sinkholes, depressions, and swallets; depth of the water table; location of the Floridan Aquifer relative to ground surface and thickness and extent of the bedrock or other confining layers over the aquifer. Policy 18-6: If the geophysical analysis confirms a direct connection to the aquifer, a comparative nitrate loading analysis shall be prepared by a licensed professional geologist using professionally acceptable methodology based on the designation on the Future Land Use Map at the time of the proposed amendment versus the proposed land use designation, considering the maximum intensity possible under the proposed land use designation. The analysis must demonstrate that there is no significant and measurable net increase in nitrate loading to groundwater. Objective 19. Transfer of Development Rights - In order to protect areas within the [Primary/Secondary] Springs Protection Overlay Zone, the creation of a Transfer of Development Rights program shall be consider in the Land Development Code. Development rights, as determined by the land use category on the Future Land Use Map, may be transferred as described by the following policies. Natural Groundwater Aquifer Recharge Subelement [see plan]
Apalachicola – Chipola	
Jackson*	Jackson County's CONSERVATION ELEMENT includes a SPRINGS AND GROUNDWATER PROTECTION SUB-ELEMENT that includes Objectives 10 through 18 and 28 corresponding policies. For example, new objectives and policies require coordination with Florida Geologic Survey, Northwest Florida Water Management District and the Florida Department of Environmental Protection in delineating the County's first magnitude springs basins and establishing buffer areas around major springs and sinkholes and swallets with direct connection to the aquifer, prohibiting specific uses such as landfills, mining and heavy industry and limiting the maximum density of any development within ¼ mile of all first magnitude springs to 1DU/acre. Among the several other measures set forth, the sub-element requires minimum setbacks of between 100 and 300 feet based on the magnitude of spring and the characteristics of sinkhole, cave and karst features (see Table 4.1 in the County's SPRINGS AND GROUNDWATER PROTECTION SUB-ELEMENT): The SUB-ELEMENT also sets forth several minimum site design standards based on the *Protecting Florida's Springs – Land Use Strategies and Best Management Practices* manual and other resources and requirements for avoiding the negative impacts of stormwater runoff , managing the amount of fertilizer and water used within

	springsheds and reviewing proposals for any development within ¼ mile of a first magnitude spring based on the vulnerability of resources. FUTURE LAND USE ELEMENT also includes Objective 8 and corresponding Policy 8.1, which require inter-element coordination for the protection and springs and groundwater resources and that all development comply with Objectives 10 through 18 of the Springs and Groundwater Protection sub-element of the Conservation Element. These requirements are also set forth in new Objective 1.7 and Policy 1.7.1 of the Infrastructure Element.
Ochlockonee – St. Marks	
Leon*	City of Tallahassee and County CONSERVATION ELEMENT Policies 1.3.1 both identify "areas exhibiting active karst features" as natural features to be identified and mapped prior to rezoning or development and regulated as conservation areas. Stormwater discharged to active karst features must meet specific criteria for treatment. City Objective 4.2 requires protection of "aquifer recharge areas from contamination by restricting land uses with the potential to contaminate groundwater through site location review and strict monitoring requirements and by establishing a Primary Springs Protection Zone for Wakulla Springs." City Policy 4.2.5 requires adoption in the Land Development Regulations a mapped Primary Spring Protection Zone for Wakulla Springs based on the Leon County Aquifer Vulnerability Assessment. Land development regulations shall be adopted to establish additional requirements and regulations within the Primary Springs Protection Zone to minimize the adverse impacts of development on groundwater recharge quality and quantity.
Jefferson*	FUTURE LAND USE ELEMENT Policy FLU-3-5 requires the County to "work with the Department of Environmental Protection, the Northwest Florida Water Management District, the Suwannee River Water Management District, and other groups to improve and enhance the County's stormwater management system. Particular emphasis will be placed on the "Saint Marks Watershed" areas that are stream to sink watersheds." UTILITIES ELEMENT Goal U-4 requires the County to "continue to conserve and preserve the values and functions of the County's natural groundwater aquifer recharge areas." OBJECTIVE U-4.1: The County shall conserve and protect the values and functions of natural groundwater aquifer recharge areas from adverse impacts through adoption of land development regulations by the statutory deadline and coordination with federal, state and local agencies throughout the planning period. Policy U-4.1-1: The County shall seek assistance from the Northwest Florida and Suwannee River Water Management Districts in the management of prime aquifer recharge areas, once such information is made available. The comprehensive plan shall be amended at that time as necessary to protect prime aquifer recharge areas. CONSERVATION ELEMENT Policy C-1.2.1 requires protection of natural groundwater recharge areas. Policy C-1.5.4: Wetlands, water bodies, springs, sinkholes, caves and habitat of endangered, threatened and species of special concern are designated as environmentally sensitive lands. These lands, when threatened by urban development, shall be protected by land development regulations. The regulations shall establish performance standards for development in such environmentally sensitive areas. Policy C-1.6.2: The floodplain ordinance shall protect the water quality, the wildlife habitat, the shorelines, and the riparian areas of rivers with the establishment of a contiguous vegetative buffer along the Wacissa and Aucilla Rivers. The minimum width shall be twenty five (25) feet as measured from the wetlands jurisdictional line. In these areas, permanent structures shall be prohibited and clearing of native vegetation other than that required for silviculture operations will be limited to reasonable access to shorelines based upon an ecosystem analysis. This shoreline buffer will also apply to Lake Miccosukee.
Wakulla*	CONSERVATION ELEMENT Objective 2.0: Protect surface water quality to ensure that water quality is not allowed to degrade below present conditions, including that of Wakulla Springs, St. Marks Springs, Spring Creek Springs, and the sections of the St. Marks, Wakulla, Sopchoppy and Ochlockonee Rivers and Apalachee Bay that have been declared by Department of Environmental Protection as Outstanding Florida Waters. Policy 2.3: The County shall not allow any stormwater discharge to flow into a wetland, river, spring, spring run, or other body of water, or into a freshwater fishery, bay, lake or other marine habitat or sinkhole or other karst feature connected to the aquifer without sufficient prior treatment to protect the receiving waters from degradation consistent with the below applicable State water quality standards including State anti-degradation standards. Policy 2.6: The County shall require review of proposed site plans and planned unit developments and the evaluation of the effects of land development activities on the natural functions of fresh water fisheries, bays, lakes, springs, spring runs, karst features connected to the aquifer, beaches, shores and marine habitats, floodways and wetlands. Where adverse impacts are noted, uses and disturbed areas on the site shall be arranged so as to minimize impact on such areas. Site plan review shall be required for any development directly contiguous to or involving disturbance of floodways, wetlands, a freshwater or saltwater body, beach, dune, springs, spring runs or

	karst features connected to the aquifer. Wakulla Springs Special Planning Area – CONSERVATION ELEMENT Objective 12.0: To develop solutions to restore the health of Wakulla Springs by reducing pollutants in the groundwater. Policy 12.1: The County shall adopt in the Land Development Regulations a mapped Primary Spring Protection Zone for Wakulla Springs based on the Florida Aquifer Vulnerability Assessment and in consideration of the Wakulla Aquifer Vulnerability Assessment and the Leon County Aquifer Vulnerability Assessment. Land development regulations shall be adopted to establish additional requirements and regulations within the Primary Springs Protection Zone to minimize the adverse impacts of development on groundwater recharge quality and quantity (and address several items including On-Site Treatment Disposal Systems). Policy 12.2: **"**By 2012, the County shall consider additional springshed protection efforts such as expanding the Wakulla Springs Special Planning Area or creating a Spring Creek Special Planning Area. Policy 13.1 requires protection of karst features through the use of design standards and buffers." These buffers range from a minimum of 300 feet for first and second magnitude springs to 100 feet for other karst features with a direct connection to the aquifer (swallet or stream to sink).
Suwannee	
Taylor*	FUTURE LAND USE ELEMENT Policy I.3.1 requires the Land Development Regulations to include provisions to "protect environmentally sensitive lands identified within the Conservation Element" and "protect potable water wellfields and aquifer recharge areas." Provisions are in place requiring connection to a central wastewater treatment system when available. For example, in setting forth the Mixed Use: Urban Development future land use category, Policy I.3.2(e) requires "If, within the designated mixed use urban development area of the coastal high hazard area central sewer is not available conventional septic tank systems shall not be permitted and only performance based septic systems that can produce a treatment standard of 10 milligrams per liter of nitrogen or less shall be installed. This shall be limited to new construction or replacement of a failed septic tank system. Objective I.10 and corresponding policies require protection of wetlands and "environmentally sensitive lands, which are listed and not limited to: wetlands, floodprone areas, areas designated as high groundwater aquifer recharge areas. Objective I.18 and corresponding policies provide for "Agriculture-Transfer sending areas to Urban and Rural Planning Areas, giving priority to, if not contiguous, "lands that provide wildlife habitat; buffer wetlands, rivers, and surface water; or contain a mixture of uplands and wetlands…" Policy I.19.6 defines wetlands (within 19 Planning Areas) as either low or high quality. CONSERVATION ELEMENT Policy V.2.4 requires a 35-ft natural wetlands buffer (unless impacts are mitigated) and Policy V.2.14 requires a 75-ft "regulated natural buffer to all perennial rivers, streams and creeks and their estuaries located within the significant natural areas identified in the Conservation element of this Comprehensive Plan, and prohibit the location of residential, commercial and industrial (including mining) land uses within the buffer areas." Policy V.2.15 requires a 35-foot regulated natural buffer adjacent to all perennial rivers, streams and creeks and their estuaries, or those which are intermittent in nature and their estuaries, but which have a distinct, identifiable stream bed or creek run, and prohibit the location of residential, commercial and industrial land uses within the buffer areas. Policy V.2.11: "The County shall, as part of the developmental review process, limit development to low density and non- intensive uses in high groundwater aquifer recharge areas designated by the Water Management District within the scope of their delegated authority." Policy V.4.8: "Through intergovernmental coordination with federal personnel at the St. Mark's Refuge, the County shall cooperate to ensure fisheries and marine habitat are protected. Further, the County shall regulate development within the 150' corridor of Spring Warrior Creek, the Econfina, Steinhatchee and Aucilla Rivers to ensure there will be no negative impacts to fisheries and marine habitat downstream to the gulf." Policy V.4.11 The County shall, during any development review process involving significant natural areas and their estuaries, address mitigation of development activities to ensure that the possible adverse impacts of the proposed development activity on the natural functions of these significant natural areas will be minimized, and that the natural functions will not be significantly altered. Mitigation measures must be acceptable to the Department of Environmental Protection or other governmental agency having mitigation permit jurisdiction. The significant natural areas and their estuaries to which this policy applies are: Aucilla River Corridor (includes Aucilla Sinks), Econfina River Corridor,Spring Warrior Creek Corridor, Steinhatchee River Corridor, St. Marks National Wildlife Refuge, Coastal Marsh and Tidal Swamp Conservation Areas, and Aucilla Suwannee River Water Management District Conservation Area. The generalized location of these significant natural areas is as shown on the Future Land Use Map series. A separate map identifying the corridors of these significant natural areas shall be provided." Max densities and setbacks for these areas are also set forth under this policy. OBJECTIVE V.6 The County shall protect the most sensitive resources within springsheds, including the principal areas of ground water contribution and recharge, sinkholes, depressions and stream to sink features, the area immediately adjacent to the spring and spring run.

	Policy V.6.1 The County shall use acquisition funding programs such as the Florida Forever Program, Florida Community Trust, Rural and Family Land Protection Program and others to acquire fee simple or less than fee ownership through conservation easements on land within the delineated springshed that has been identified as critical or sensitive resources. Policy V.6.2 The County shall use other innovative approaches to protect sensitive resources, such as the transfer of development rights, performance zoning, open space zoning, on site density transfer and other techniques to maximize the establishment of open space areas. Policy V.6.3 The County shall encourage the use of setbacks recommended in "*Protecting Florida's Springs: An Implementation Guidebook*" (2008), published by the Department of Community Affairs, to protect springs and groundwater quality. OBJECTIVE V.7 The County shall define and delineate environmental overlay protection zones to protect the springshed and spring system resources and designate appropriate land uses in these zones. Policy V.7.1 The County shall designate low density and intensity land uses, including conservation lands and recreation areas, on the Future Land Use Plan Map of the Comprehensive Plan in and around critical springshed resources and sensitive springshed areas. Following the preparation and issuance of springshed maps for magnitude one springs by the Florida Geological Society of the Florida Department of Environmental Protection, the County shall adopt a springshed overlay protection zone map that designates critical springshed resources and sensitive springshed areas for magnitude one springs.
Hamilton*	FUTURE LAND USE ELEMENT Policy I.7.6 requires the LDR to include "stormwater management and land use design provisions which minimize the direct surface run-off into all surface water bodies and especially the following springs: Morgan's Spring, White Springs, Alapaha Rise and Holton Spring." The plan addresses the "Suwannee River System 100-Year Floodplain Special Planning Area" specifically under Objective S.1. Policy S.2.5 requires the County to "designate publicly owned springs, spring runs, unique vegetative communities and critical habitats within the Suwannee River system as conservation on the Future Land Use Map. Conservation Element V.6 requires protection of "the most sensitive resources within springsheds, including the principle areas of ground water contribution and recharge, sinkholes, depressions and stream to sink features, the area immediately adjacent to the spring and spring run. Corresponding Policies V.6.1 and V.6.2 address acquisition funding programs and innovative approaches (TDR, performance zoning, open space zoning, on site density transfer) to maximize open space areas. Objective V.7 requires definition and delineation of environmental overlay protection zones to protect the springshed and spring system resources and designate appropriate land uses in these zones. Policy V.7.1 requires the County to designate low density and intensity land uses including conservation lands and recreation areas, on the FLUM in and around critical springshed resources and sensitive springshed areas, adoption of a "springshed overlay protection zone map" of magnitude one springs and implement best management practices based on the publication "*Protecting Florida's Springs: Land Use Planning Strategies and Best Management Practices*, November 2002…"
Suwannee*	Like Hamilton County, Suwannee County addresses the "Suwannee River System 100-Year Floodplain Special Planning Area" specifically under FUTURE LAND USE ELEMENT Objective S.1. Policy S.2.5 requires the County to "designate publicly owned springs, spring runs, unique vegetative communities and critical habitats within the Suwannee River system as conservation on the FLUM. The Natural Groundwater Aquifer Recharge Subelement prohibits sanitary sewer discharge to "designated high groundwater aquifer recharge areas." Policy V.2.1: "The County as part of the development review process shall require the coordination of development plans with the Florida Department of Environmental Protection and the Water Management District to assist in the monitoring uses which may impact the County's current and projected water sources." Policy V.2.4 requires the LDRs require a 35-ft natural buffer around all wetlands..." Policy V.2.14: "The County shall require a minimum undisturbed vegetated buffer of 75 feet measured from the generally recognized river bank of any Outstanding Florida Water as classified by the Florida Department of Environmental Protection and any other river of the Suwannee River System, and 50 feet adjacent to all other streams tributary to any such Outstanding Florida Water and any other river of the Suwannee River System, be maintained for all single-family residential uses and agricultural uses." INTERGOVERNMENTAL COORDINATION ELEMENT OBJECTIVE VII.4: The County shall coordinate with the Water Management District regarding all development proposals with the potential for impacting the water resources of the County. Policy VII.4.1 "The County through the development review process shall coordinate all development proposals with the Water Management District for all development proposals within the watershed of any designated Surface Water Management and Improvement Act priority water body. OBJECTIVE VII.8 "The County shall coordinate with the Suwannee River Basin Nutrient Management Working Group to address solutions to any identified nutrient loading problems with the potential for impacting the water

	resources of the County. Policy VII.8.1 "The County shall use the findings of the Suwannee River Basin Nutrient Management Working Group to formulate a strategy to address solutions to identified nutrient loading problems with the potential for impacting the surface and groundwater resources of the County.
Lafayette*	FUTURE LAND USE ELEMENT Objective I.7 requires the County to adopt regulations "to protect natural resources and environmentally sensitive lands (including but not limited to wetlands and floodplains." Policy I.7.3 requires protection of groundwater aquifer recharge areas and "Prime Natural Groundwater Aquifer Recharge Areas. Policy I.7.4 requires the County's LDRs to include "stormwater management and land use design provisions which minimize the direct surface run-off into all surface water bodies and especially the following springs: Allen Mill Pond Spring, Blue Spring, Fletcher Spring, Mearson Spring, Owens Spring, Ruth Spring, Troy Spring and Turtle Spring." The Plan includes an overall goal to protect and maintain the natural functions of the Suwannee River System. Corresponding Objective S.2 requires the County to "take the actions identified within the following policies by March 1, 1992 to protect unique natural areas within the Suwannee River system, including but not limited to springs and spring runs, critical habitat areas for fish and wildlife, unique vegetative communities, and public recreation areas." Policy S.2.5 requires the County to "designate publicly owned springs, spring runs, unique vegetative communities and critical habitats within the Suwannee River system as conservation on the Future Land Use Map." CONSERVATION ELEMENT Objective V.2 and corresponding policies require protection of prime water recharge areas. The plan also requires undisturbed buffers between development and a perennial river, stream or creek and lake, pond or wetland, and requires protection of surface and groundwater quality and quantity under the goals, objectives and policies in the Natural Groundwater Aquifer Recharge Subelement.
Dixie*	FUTURE LAND USE ELEMENT OBJECTIVE I.12: "The County shall a process for coordination with the Water Management District of all proposed development plans within the drainage basin of any designated priority water body to provide the Water Management District an opportunity to review such development to determine if the development is consistent with any approved management plans within that basin." CONSERVATION ELEMENT OBJECTIVE V.2 requires the County "in order to protect the quality and quantity of current and projected water sources, shall continue to require a 500-foot wellfield protection area around community water system wells. In addition, the County in order to protect high groundwater aquifer recharge areas as designated by the Water Management District and depicted in Appendix A of this Comprehensive Plan, shall continue to limit development in these areas as specified in the groundwater aquifer recharge protection policy contained within the Sanitary Sewer, Drainage, Potable Water and Natural Groundwater Aquifer Recharge Element of this Comprehensive Plan. Policy V.2.4 The County shall require a 35-foot natural buffer around all wetlands and prohibit the location of residential, commercial and industrial land uses within the buffer areas, but allow agriculture, silviculture and resource-based recreational activities within buffer areas subject to best management practices. Policy V.2.6 The County shall require all new development to maintain the natural functions of environmentally sensitive areas, including but not limited to wetlands and 100-year floodplains so that the long term environmental integrity and economic and recreational value of these areas is maintained. Policy V.2.14 "The County shall require a 75-foot regulated natural buffer adjacent to all perennial rivers, streams and creeks identified as regionally significant areas…" OBJECTIVE V.6 The County shall protect the most sensitive resources within the springshed, including the principal areas of ground water contribution and recharge, sinkholes, depressions and stream to sink features, the area immediately adjacent to the spring and spring run. Policy V.6.1 The County shall use acquisition funding programs such as the Florida Forever Program, Florida Community Trust, Rural and Family Land Protection Program and other to acquire fee simple or less than fee ownership through conservation easements on land within the delineated springshed that has been identified as critical or sensitive resources. V.6.2 The County shall use other innovative approaches to protect sensitive resources, such as the transfer of development rights, performance zoning, open space zoning, on site density transfer and other techniques to maximize the establishment of open space areas. OBJECTIVE V.7 The County shall define and delineate environmental overlay protection zones to protect the springshed and spring system resources and designate appropriate land uses in these zones. Policy V.7.1 The County shall designate low density and intensity land uses, including conservation lands and recreation areas, on the Future Land Use Plan Map of the Comprehensive Plan in and around critical springshed resources and sensitive springshed areas. Following the preparation and issuance of springshed maps for magnitude one springs by the Florida Geological Survey of the Florida Department of Environmental Protection, the County shall adopt a springshed overlay protection zone map that designates critical springshed resources and

	sensitive springshed areas for magnitude one springs. The County will also implement structural and nonstructural best management practices for these designated critical springshed resources based on the publication *Protecting Florida's Springs: Land Use Planning Strategies and Best Management Practices*, November 2002; as follows: 1.Limit impervious surfaces by size of residential lots and for non- residential use; 2. Develop a list of native and drought tolerant plants and require a percentage of these plants in landscape plans; 3. Require a protection zone around sinkholes with direct connection to the aquifer; 4. Require a site analysis for structure location if sinkholes or karst features are present on site; 5. Require swales where appropriate; 6. Use alternative stormwater treatment systems such as bio-retention areas that are designed to better treat stormwater in springshed protection zones; and 7. Use best management practices for residential development consistent with the Florida Yards and Neighborhood Program.
Columbia*	FUTURE LAND USE ELEMENT Policy I.1.6 limits densities on development not served by central potable water and wastewater and sets forth development standards for Mixed Use Districts within stream to sink areas, which are depicted in Illustration A-XII-a. Objective I.7 requires the County to adopt regulations to protect natural resources and environmentally sensitive lands, including high groundwater aquifer recharge areas as shown on Illustration A-XI. Many other policies in the Future Land Use, Infrastructure (Natural Groundwater Aquifer Recharge Subelement) and Conservation Elements address high groundwater aquifer recharge areas. Policy I.7.6 requires the Land Development Regulations to include stormwater management and land use design provisions which minimize the direct surface runoff into the following surface water bodies: Ichetucknee Springs, Bell Springs, Alligater Lake and Watertown Lake. Policy I.10.1 prohibits "the creation of buildable lots within unsuitable areas due to improper drainage, unsuitable soils, steep slopes, rock formations and adverse earth formations." CONSERVATION ELEMENT V.2.14 requires vegetative buffers between development and several rivers, streams and creeks.
Union	FUTURE LAND USE ELEMENT Policy I.7.3 sets forth requirements for protecting groundwater aquifer recharge areas. Policy I.7.4 requires the County's land development regulations to "include stormwater management and land use design provisions which minimize the direct surface run-off into freshwater springs." Policy I.10.1 requires the land development regulations to restrict development within unsuitable areas due to flooding, improper drainage, steep slopes, rock formations and adverse earth formations." The plan also establishes the Suwannee River System 100-Year Floodplain Special Planning Area" and measures to protect it, including buffers. The Infrastructure Element includes several policies to address stormwater treatment for systems discharging to an Outstanding Florida Water. Policies in the Conservation Element address buffers and clustering with respect to wetlands. When addressing wetlands buffers, the plan typically lists "perennial rivers, streams and creeks."
Gilchrist*	CONSERVATION ELEMENT Policy V.5.5: "The map entitled Regionally Significant Natural Areas - Surface Water Resources, dated May 23, 1996, included within the Future Land Use Map Series, identifies surface water resources, including lakes, rivers, wetlands, and springs, for the application of the provisions of the surface water and riverbank protection policies of this element." Policy V.2.7 establishes the Santa Fe and Suwannee Rivers as environmentally sensitive, and V.2.1 requires a buffer along these Outstanding Florida Water river banks. Objective V.6 : Protect, maintain, and where possible, enhance the resource quality of spring systems in order to preserve the recreational, economic, and environmental value of spring resources. Policy V.6.1 : Maintain low density (less than 1 unit per 5 acres) and intensity land uses, including single-family homes, non-intensive agriculture, water-dependent commercial uses, and resource-based activities adjacent to first, second, or third magnitude springs and spring runs. Policy V.6.2 : Development adjacent to first, second, or third magnitude springs and spring runs will be designed, during the site planning process, in a way that minimizes potential impacts to spring resources. Policy V.6.3 : Development adjacent to first, second, or third magnitude springs and spring runs will provide an undisturbed buffer area of at least 35 feet around the spring and spring run. Development activities within this buffer area will be limited to resource-based recreational activities (such as spring access facilities) and silviculture activities. Policy V.6.4: By 2005, develop innovative approaches to protect spring resources, such as transfer of development rights, performance zoning, on-site density transfer, and other techniques to maximize the establishment of undisturbed open space adjacent to springs and spring runs. Policy V.6.5 : Coordinate with the spring water sampling and testing programs of the United States Geological

	Survey, Florida Department of Environmental Protection, and the Suwannee River Water Management District. Policy V.6.6 : Support the efforts of local, regional, state, and federal agencies in the development of springshed identification and mapping. When such identification mapping becomes available, consider its incorporation into the Comprehensive Plan.
Bradford	The plan requires undisturbed buffers between development and a perennial river, stream or creek and lake, pond or wetland, identifies "environmentally sensitive areas and lands" and sets forth maximum densities and buffer requirements therein and requires protection of high groundwater recharge areas, which are mapped in the plan. Policy I.7.4 requires "stormwater management and land use design provisions which minimize the direct surface run-off into fresh water springs." Policy S.2.5 requires the County to "designate publicly owned springs, spring runs, unique vegetative communities and critical habitats within the Suwannee River system as conservation on the Future Land Use Map" and requires protection of surface and groundwater quality and quantity under the goals, objectives and policies in the Natural Groundwater Aquifer Recharge Subelement. CONSERVATION ELEMENT Objective V.6 requires the County to "protect the most sensitive resources within the springshed, including the principal areas of groundwater contribution and recharge, sinkholes, depressions and stream to sink features, the area immediately adjacent to the spring and spring run." Policies V.6.1 and V.6.2 require use of acquisition funding programs and "other innovative approaches to protect sensitive resources, such as the transfer of development rights, performance zoning, open space zoning, on site density transfer and other techniques to maximize the establishment of open space areas." Objective V.7 requires the County to "define and delineate environmental overlay protection zones to protect springshed and spring system resources and designate appropriate land uses in these zones." Setting forth the requirement for adopting a springshed overlay protection zone map, the plan refers to the publication "*Protecting Florida's Springs: Land Use Planning Strategies and Best Management Practices*" and sets forth these Best Management Practices.
Levy*	Levy County has a SPRINGS PROTECTION ELEMENT, with the goal being to "protect first and second magnitude springs and springshed areas as fragile resources necessary for sustaining the community's quality of life." The element includes seven objectives titled as follows: 1) Springs Protection Zone 2) Future Land Use Map Amendments 3) Development Design Standards 4)Site Plan and Plat Review, 5) Stormwater Management 6) Wastewater Treatment and 7)Intergovernmental Coordination. For example and similar to Jackson County, Policy 3.2 requires development setback distances ranging from 100 feet to 300 feet depending upon the spring, spring run or karst features. CONSERVATION ELEMENT Policy 2.1 requires environmentally sensitive lands to be designated and shown on the Future Land Use Map series as an overlay zone. Environmentally sensitive lands include "Freshwater and coastal springs, swamps, marshes, wetlands as defined by the Florida Department of Environmental Protection, streamside management zones and along the Suwannee, Wacassassa and Withlacoochee Rivers and each of the rivers and spring-fed tributaries." Policy 2.2 requires protection of environmentally sensitive lands and sets forth guidelines and standards. Policy 3.2 requires a "Land Use and Natural Resource Map series" showing county-wide environmental resources, locally important farm and forestry land, mineral resources, karst features, springs and the Springs Protection Zone and future land use information shall be utilized in the review of proposed developments." Objective 6 requires protecting the quality and quantity of current and projected water resources and Policies 6.13 through 6.15 address aquifer recharge areas specifically.
Lower St. Johns & Upper East Coast	
Putnam	FUTURE LAND USE ELEMENT Policy A.1.4.14 requires the County "through available state and federal programs, promote the acquisition of floodplains along the St. Johns and Ocklawaha Rivers." In setting forth the Conservation future land use category, FUTURE LAND USE ELEMENT Policy A.1.9.3.A.11 states "The Conservation land use category depicted on the Future Land Use Map includes areas designated for the purpose of conserving or protecting natural resources including ground water, surface water, wildlife habitats, vegetative communities, floodplains, and wetlands. Areas warranting protection, which is subject to reevaluation by the County and may result in map amendments to designate other areas as Conservation include seepage streams, slope forests, spring run streams, sand hill upland lakes, known listed species, scrub uplands and longleaf pine-xeric oak vegetative communities, public and private lands acquired for the purpose of preservation, all jurisdictional wetlands adjacent to the main stem of the St. Johns River, Dunns Creek, and Crescent Lake including the wetlands associated with Murphy, Hog and Drayton Islands, all out parcels within the Ocala National Forest, and the jurisdictional wetlands of Levy's Prairie, Goodson's Prairie and Fowlers Prairie. CONSERVATION ELEMENT Policy E.1.3.6 requires the County to protect environmentally sensitive areas by use of "the most current information and data from the St. Johns River Water Management District and the Florida Natural Areas Inventory to identify Slope Forests, Seepage Streams, Spring Run Streams, and Sandhill

	Upland Lakes which shall not be designated with a more intense future land use designation than already exists." Policy E.1.4.10 requires the County to "advocate the purchase of uplands whether by the St. Johns River Water Management District, State land-buying programs, local land buying programs or other means, needed to protect groundwater resources."
Middle St. Johns	
Seminole	This is directly from the County's FUTURE LAND USE ELEMENT (Issue FLU 11): **"**Wekiva River Protection Area: In 1988, the Florida Legislature enacted the "Wekiva River Protection Act" to protect the natural resources and rural character of the "Wekiva River Protection Area" as defined in the Act. To comply with the Act, the County's Comprehensive Plan was amended to create a set of Plan policies to require the maintenance of the rural density and character, protect natural resources and ensure the long term viability of the Wekiva River Protection Area (see *Objective FLU 14 Revitalization of Major Corridors* and the *Exhibit FLU: Future Land Use Map* of this Plan). In 1999, the County adopted a Plan objective and additional set of Plan policies, substantially based on the "1999 Wekiva Special Area Study," to provide greater protection for this area. These provisions also establish a maximum density of one dwelling unit per net buildable acre as the final development form for the Wekiva River Protection Area, to maintain rural density and character in the aggregate. A density of up to 2.5 dwelling units per net buildable acre is allowable in the area identified as the "East Lake Sylvan Transitional Area." In 2004, The Florida Legislature enacted the "Wekiva Parkway and Protection Act" to implement the recommendations of the Wekiva River Basin Coordinating Committee and achieve the objective of improving and assuring protection of the surface water and groundwater resources within the Wekiva Study Area. To comply with this Act, the County's Comprehensive Plan was amended in 2005 and 2006 to adopt text amendments to the Drainage and Transportation elements of the Seminole County Comprehensive Plan. The amendments implemented the Facilities and Services requirement of the Wekiva Parkway and Protection Act. In the future, the County may create additional provisions in the Seminole County Comprehensive Plan and Land Development Code for the purpose of implementing the Wekiva River Protection Area policies of State Law and this Plan.**"** FUTURE LAND USE ELEMENT Objective FLU 12 requires the County to "continue to enforce and, if necessary, strengthen existing Plan objectives, goals and policies and land development regulations to preserve and reinforce the goals of the Wekiva River Protection Act (Part II, Chapter 369, Florida Statutes) and FUTURE LAND USE ELEMENT Policy FLU 12.1 recognizes the Wekiva River Protection Area. Policy FLU 12.9 sets forth "Environmental Design Standards" for the Wekiva River Protection Area, one of which requires "An upland buffer averaging 50 feet but no less than 25 feet in width shall be maintained surrounding areas identified as containing floodplain and/or wetlands or properties which have been designated as preserve areas or conservation easements." Policy FLU 13.2 requires application of several land use strategies and mechanisms to protect open space, most effective recharge areas and karst Features (and refers to *Exhibit FLU: Wekiva Study Area Series -Sensitive Habitats and Karst Features*) within the Wekiva Study Area, as required by the Wekiva Parkway and Protection Act." Policy FLU 13.2.C.1 states: "The County shall adopt Best Management Practices, including applicable Best Management Practices recommended in "*Protecting Florida's Springs – Land Use Planning Strategies and Best Management Practices*", Florida Department of Community Affairs and Florida Department of Environmental Protection, 2002. Best Management Practices may include, but not be limited to: a. Increasing public awareness of the Florida Yards and Neighborhoods Program regarding proper lawn and landscaping fertilization and irrigation techniques via Seminole County Government Television; b. Restricting untreated water from a development site from directly discharging into karst features; c. Requiring development proposals to verify by surveys and/or studies the presences of karst features and sensitive natural habitat; d. Requiring a clearing and building construction setback of a minimum of 50 feet from karst features or sensitive natural habitat; and e. Maintaining a minimum 25 feet, average 50 foot natural buffer adjacent to karst features." CONSERVATION ELEMENT Policy CON1.3 requires the County to "enforce the Aquifer Recharge Overlay Zoning Classification, which sets alternative design criteria and standards to protect the functions of most effective aquifer recharge areas, and shall evaluate the need to update these criteria and standards as part of the County's Land Development Code update scheduled for completion by 2010."
Orange	Under FUTURE LAND USE ELEMENT Goal FLU6: Protection of Rural Land Resources and Other Assets, Objective FLU6.6: "WEKIVA: By January 1, 2007, the Land Development Code shall establish specific requirements for development within the Wekiva Study Area that may be necessary to protect ground water and surface water resources and to help attain target water quality standards. The requirements shall address, but not

be limited to, allowed uses, stormwater management, open space, habitat protection, and public facilities. (Added Ord. 07-20, Policy 4.1.27)."

Policy FLU6.6.4: Orange County shall protect the Wekiva Study Area and the underlying aquifers. Because the Wekiva River is designated as an Outstanding Florida Water and a national Wild and Scenic River, it is in the interest of the citizens of Orange County to maintain the quality of the system. The County shall use the Florida Department of Community Affairs/Florida Department of Environmental Protection joint publication, *Protecting Florida's Springs: Land Use Planning Strategies and Best Management Practices*, November 2002, as a guide to developing regulations within the Wekiva Study Area and shall incorporate the appropriate strategies and practices described therein in the Land Development Code by January 1, 2007. (Added Ord. 07-20, Policy 4.5.1)"

Policy FLU6.6.5: An undeveloped springshed has a natural equilibrium of water, nutrients and other chemical inputs and outputs. As a springshed becomes developed, this equilibrium is progressively altered. To minimize impacts in developed or developing springshed areas, site design and management issues shall be addressed carefully in the manner outlined below. These criteria are summarized from The Center for Watershed Protection's Better Site Design: *A Handbook for Changing Development Rules in Your Community*, August 1998 and Consensus Agreement on Model Development Principles To Protect Our Streams, Lakes, and Wetlands, April 1998. These documents shall be used, as appropriate and pertinent, for designing land development regulations for the Wekiva Study Area. The following existing and new concepts shall be incorporated, as appropriate and feasible, into projects within the WSA. The Land Development Code shall be revised by January 1, 2008 include appropriate standards and regulations to implement the policy.

A. Select the most appropriate site or portion of a site for development. A landowner or developer wishing to develop an area within the Wekiva Study Area or other identified springshed needs to choose an appropriate site for that development. The owner shall evaluate the landscape and geology of the land and seek locations that avoid karst features that have a direct or indirect connection to the aquifer and other environmentally sensitive features, such as sinkholes, streams, wetlands, or major springshed recharge areas. Development shall be clustered on the portion of the property best able to accommodate the development with minimal impact to water resources within the springshed.

B. Property owners and developers shall design the site appropriately, viewing site planning and design from a pollution prevention-based approach to protect environmentally-sensitive spring and karst features. This prevention approach is much more cost-effective than relying on post-development structural treatments to correct problems. Site design shall use the following principles:

- Residential street and parking area designs shall minimize the development footprint (total amount of impervious surface)
- Natural areas shall be conserved to the greatest extent possible. Development shall preserve or create protective, naturally vegetated buffer systems along all streams and that also encompasses critical environmental features such as the 100-year floodplain, sinkholes, karst depressional features, stream-to-sink waters, slopes, and wetlands. Clearing and grading of forested and native vegetation areas shall be limited to the minimum amount needed to build lots, allow access, and provide fire protection.
- Development shall use the principles of Low Impact Development, an approach to environmentally-sensitive site development that focuses on designing and developing a site to avoid or minimize impacts to the environment, especially regarding water quality and quantity. Low Impact Development uses a variety of site design, stormwater treatment train provisions (a system consisting of two or more separate structures—for example, a swale followed by a wet pond), and pollution prevention techniques to create an environmentally-sensitive site landscape that preserves natural features and ecological functions with the result that the landscape is functionally equivalent to pre-development hydrologic conditions.

C. Property owners and developers shall use sensitive landscape design and Best Management Practices, including, but not limited to, the following:

- Landscape design that considers natural soils and vegetation in plant selection, such as xeriscaping,
- Irrigation systems that minimize ground water use through efficient watering zones, use of reclaimed water if available, and use of stormwater.
- Landscape designs that minimize fertilization and use of chemicals.
- Landscape design and management incorporating Targeted Pest Management, the lawn and landscape industry equivalent of Integrated Pest Management used on golf courses.

D. Development shall use Best Management Practices for effective erosion and sediment control, including, but not limited to, the following:

- Structural and non-structural Best Management Practices and appropriate on-site techniques during construction to control erosion and sedimentation.
- Buffering of sensitive areas such as lakes, sinkholes, stream-to-sink areas, spring runs, creeks, and any wetlands associated with these features.

	• Establishment of regular street and parking lot sweeping programs to remove accumulated sediments and debris E. Depending upon specific site characteristics and consistent with existing regulations, development shall address creatively stormwater management issues and shall use Best Management Practices, including, but not limited to, the following: • Holding runoff in shallow vegetated infiltration areas; • Using clay or geotextile liners for wet detention ponds; • Employing offline stormwater retention areas; • Constructing many small retention areas rather than only a few large retention areas; • Installing sediment sumps at inlets to retention and detention areas; • Using shallow grassed swales for the conveyance for stormwater; • Constructing swales with cross blocks or raised driveway culverts; • Fully vegetating stormwater retention basin side slopes and bottom; • Using the treatment train concept and low impact development principals, discussed above; • Minimizing the amount of impervious surfaces; • Maximizing the amount of open space left in natural vegetation; • Maximizing the use of pervious pavement in parking areas; • Maintaining existing native vegetation where feasible; and Buffering sinkholes and other surface-to-ground water conduits, stream channels FLU-135 and springshed recharge areas (unconfined or minimally confined ground water exposure areas). F. Development shall address wastewater management issues as discussed in this element and the Wastewater Element. Other subsections address conservation measures and public awareness. Policy FLU6.6.6 requires establishment of three protection zones based upon the aquifer vulnerability (Wekiva Aquifer Vulnerability Assessment); Policy FLU6.6.8 requires land uses within the Rural Service Area portion of the Wekiva Study Area to be "limited to very low and low intensity uses to the greatest extent possible." Policy FLU6.6.9 requires land use strategies that "optimize open space and promote a pattern of development that protects the most effective recharge areas, karst features, etc.
Oklawaha	
Alachua*	CONSERVATION ELEMENT Policy 3.6.8 requires Development occurring along the edges of conservation and preservation areas to be designed to protect and minimize the impact of development on conservation areas through the use of natural vegetative buffers, which range from a 50-foot average/35-foot minimum to a 150-foot average/100-foot minimum. Objective 4.5 requires the County to "Protect and conserve the quality and quantity of groundwater and springs resources to ensure long-term public health and safety, potable water supplies from surficial, intermediate, and Floridan aquifers, adequate flow to springs, and the ecological integrity of natural resources." Policy 4.5.13 requires a County-wide groundwater monitoring program to be developed and funded to coordinate and expand upon existing groundwater monitoring efforts. This program shall include monitoring of springs. Policy 4.5.21(c) requires the County to "develop measures that promote water conservation to preserve groundwater levels that retain adequate spring discharge from the Floridan aquifer springs along the Santa Fe River with the objective of no net loss in biological, ecological, and hydrological function." Policy 4.5.22 requires the County to "establish a comprehensive springshed protection program to protect the resource from potential adverse effects from incompatible land uses and activities." (a) Springshed protection areas shall be identified for all springs in the County; springsheds within the County that extend from springs located outside the County shall also be identified. (b) The latest scientific modeling shall be reviewed and, as necessary, updated to assist in the identification of springshed, springs, and Floridan aquifer high recharge areas. (c) For these springs and groundwater protection areas, land development regulations shall specify the size, location, and applicable requirements of protection zones, including specific requirements on activities associated with domestic waste treatment including septic tanks, package plants, and regional wastewater treatment facilities and their effluent disposal practices. (d) Fertilizer shall be regulated to ensure that excess nitrogen and phosphorus are not leached into the Floridan aquifer. (e) The County shall provide municipalities with current modeling and protection standards for their use in protecting these resources. (f) The following new uses or expansions of existing uses shall be prohibited in designated springsheds, springs buffers, and Floridan aquifer high recharge areas:

	(1) Rapid infiltration basins for wastewater effluent disposal. (2) New or expanded surface water discharge of treated wastewater. (3) Large scale land application of Class A or B biosolids. (4) Land application of septage. (g) The County shall develop effluent discharge standards for new and existing wastewater treatment plants in springshed protection areas for inclusion in the Land Development Code. (h) Reclaimed water standards in Policy 4.6.16 item (d) shall apply. Policy 4.6.16 requires land uses that have the potential to pollute surface waters (are located adjacent to surface waters and that contribute significant nutrient loadings) to be identified and regulated using, among others listed, the following measure to protect water quality and biological health: (h) The use of performance based treatment systems may be required in highly sensitive areas, such as in proximity to Outstanding Florida Waters, impaired waters, in springsheds where karst features are prominent and conduit flow is known to exist, or where the lot sizes are small and do not allow for adequate nutrient reduction to be met at the property boundary. These systems shall be designed and permitted under a defined performance standard criterion (e.g. Secondary or Advanced Secondary treatment standards). This measurable performance standard can be adopted as a risk based mitigation strategy for site specific concerns. Map 2 illustrates the Alachua County Floridian Aquifer High Recharge Area
Marion*	FUTURE LAND USE ELEMENT Objective 1.7: Protection of Natural and Historic Resources: "To prevent further degradation of natural and historic resources by directing development through transfer of development rights, purchase of development rights, and performance standards specified by the policies accompanying this objective and by the policies concerning Environmentally Sensitive Overlay Zones, Springs Protection Zones and Karst Sensitive Areas." FUTURE LAND USE ELEMENT Policy 1.7.5: Environmentally Sensitive Overlay Zone - "For the purpose of regulating intensity of development where environmentally sensitive lands may be subject to the adverse impacts of development, or where a specific natural feature or area requires protection, certain lands have been designated as being in an Environmentally Sensitive Overlay Zone on the Future Land Use Map Series Map #11. Through this policy, standards and procedures will be established for the Environmentally Sensitive Overlay Zone that: a. Protect the quality of surface water, ground water and springs; b. Protect the habitat of listed species in a manner that is consistent with the management, recovery, or habitat requirement plans or guidelines that have been produced by State or Federal agencies and protect and/or conserve unique vegetative communities; c. Protect flood storage and floodplain capacity; d. Establish minimum tract/parcel width and depth for the types of areas within the Environmentally Sensitive Overlay Zone; e. Provide for development mitigation, re-vegetation, buffering, and setback measures within the Environmentally Sensitive Overlay Zone; f. Provide for building and development practices and techniques which protect the integrity of the Environmentally Sensitive Overlay Zone and achieve the purpose of this policy; g. Provide for storm water management practices; h. Provide standards for on-site sewage disposal systems to those which protect and achieve the purpose of this policy; i. Provide for site analysis to include, but not be limited to soil suitability, topographic relief, and geologic characteristics; and j. Establish a Springs Protection Zone, that includes the Primary and Secondary Zone, that are additional, but distinct parts of the Environmentally Sensitive Overlay Zone. The Springs Protection Zone shall only be regulated pursuant to distinct Springs Protection Zone standards and criteria and not to general Environmentally Sensitive Overlay Zone criteria set forth in the Comprehensive Plan or Land Development Regulations. Where the Environmentally Sensitive Overlay Zone and Springs Protection Zone overlap, the more restrictive requirements shall apply. To achieve the purpose of this policy, criteria shall be followed in maintaining Land Development Regulations for areas within the Environmentally Sensitive Overlay Zone as outlined the Appendix B, Section B-3, *Environmentally Sensitive Overlay Zone Standards*." FUTURE LAND USE ELEMENT Policies 1.7.12 and 1.7.13 set forth standards and guidelines for "a land development review process for karst sensitive areas to determine potential problems and environmental impacts of development" and prohibiting expansion of any existing landfill within these areas and setting forth requirements for landfill contents/solid waste and material. CONSERVATION ELEMENT Policy 1.1.1 requires the County to include "those rivers, lakes and springs with defined Minimum Flows and Levels, as designated by local, state, or federal agencies, in conjunction with local and regional Water Supply Plans; and substantial high water recharge areas or Springs Protection Zones as

	environmentally sensitive lands due special protection through measures such as buffering form adverse impacts of development, Transfer of Development Rights to lower density in sensitive areas, acquisition through the Parks and Environmentally Sensitive Land Acquisition Program and requiring development to avoid adverse impacts to these resources." Objective 1.2 and corresponding policies set forth minimum standards and guidelines for protecting, conserving, appropriately using, and enhancing the quality and natural function of the environmentally sensitive lands, natural reservations, and locally significant resources and require the County Land Development Code to include the mechanisms to minimize the impact of development upon and protect, conserve, and enhance the quality and natural function of environmentally sensitive lands, natural reservations, and locally significant natural resources. These standards and guidelines address stormwater management, open space, tract size, lowering density, on-site sewage disposal, conservation easements, clustering, etc. Policy 1.2.13 requires the County to "protect, conserve, and enhance the quality and quantity of the groundwater resources…in accordance with springs protection zone standards and restriction of "activities that are known to adversely affect the quality and quantity of groundwater resources, such as: inadequate stormwater management, inappropriate use of septic tanks; use of fertilizers and chemicals not in accordance with best management practices; intense development in karst sensitive areas, and inadequate handling of hazardous materials." Map 14 shows Springs Protection Zones.
Lake*	As stated in FUTURE LAND USE ELEMENT Goal I-3 - Wekiva Area: "The Wekiva basin and springshed, including the Wekiva River and its tributaries, springs, aquifer recharge areas, wetland and upland habitats, sensitive natural habitats, wildlife, and wildlife corridors, are natural resources of irreplaceable value. Furthermore, the Wekiva basin and springshed are essential components of a larger ecosystem of public and private lands that extends into the Ocala National Forest. Lake County shall maintain the long-term viability of these natural resources through a comprehensive and holistic approach to land use, land preservation, water resource protection, and wildlife and habitat needs within the Wekiva Basin and Wekiva Springshed." FUTURE LAND USE ELEMENT Objective I-3.3: Wekiva River Protection Area: "The County shall regulate the use of land within the Wekiva River Protection Area as defined by Florida Statutes, to implement protection policies and regulations that maintain rural density and character in the aggregate, concentrate development farthest from surface waters and wetlands of the Wekiva River System, minimize impacts on water quantity and quality, protecting native vegetation, wetlands, habitat, wildlife and wildlife corridors, and restrict open space areas to conservation and passive recreational uses. Regardless of the land use designation or zoning classification assigned to any parcel of property located within the Wekiva River Protection Area, no development may be approved upon parcels so located unless the proposed development conforms to the provisions of the Wekiva River Protection Act, the Comprehensive Plan and Land Development Regulations adopted pursuant to the Comprehensive Plan." Policy I-3.4.5 Development Design Standards: In order to protect natural resources, including but not limited to aquifer recharge, karst features, native vegetation, habitat, and wildlife, new development within the Wekiva Study Area shall implement conservation design standards including at a minimum: • Clustering of development to create large contiguous tracts of common open space; to protect environmentally sensitive areas, including but not limited to habitat, wildlife, and wildlife corridors; to maximize buffering to adjacent conservation land; to protect aquifer recharge and karst features; and to create opportunities for passive recreation. • Protection of common open space, wetlands and other natural features in perpetuity by easement, or similar recorded and legally binding instrument. • Preservation of wildlife, natural habitat, and karst features on site. A study of listed species as required by the Conservation Element. • Maintenance, enhancement, and protection of corridors for wildlife movement in coordination with adjacent properties; • Minimal site disturbance and alteration of terrain, through use of design techniques, such as Low Impact Development, that protect native vegetation and minimize earth movement such as reduced lane widths, stem-wall construction, swales, and native landscaping. A wetland assessment for all development. The purpose of said wetland assessment is to maintain the integrity of wetland systems. • Use of Best Management Practices for native landscaping and ―right plant-right place landscaping techniques to provide compatibility with the natural environment and minimize the use of chemicals, pesticides, and water for irrigation. No invasive exotic plant species shall be used in landscaping. • Implementation of water conservation techniques including the restriction of irrigated lawn and landscaping to no more than 50% of all pervious areas for both residential lots and common areas.

• Preservation of dark skies through dark sky lighting ordinances.
• Central water and sewer facilities that can be connected to a regional system when available for all new development within the Wekiva Study Area that has a density equal to or greater than one unit per net buildable acre.
• Installation of reclaimed water lines within service areas in order to ensure the present or future capability to receive treated reuse water to the maximum extent possible.
• Use of water conservation devices and practices for all development.
• Implementation of Best Management Practices according to the principles and practices of the Florida Yards and Neighborhoods Program.
• Implementation of Firewise community design, including but not limited to, residential defensive space, setbacks from conservation lands, common area design and recommended construction material selection, should be based on the recommendations of National Fire Plan standards.

FUTURE LAND USE ELEMENT Policies I-3.4.8 and I-3.4.9 set forth minimum setbacks from karst features, which range from 100 feet for karst to 300 feet for springs, and development Best Management Practices for groundwater protection within the Wekiva Study Area.

CONSERVATION ELEMENT Policy III-2.1.14 - Identify Aquifer Protection Zones/Conservation Measures: "The County shall identify critical areas and land uses within the County that may impact the County's ground water resources. In consultation with state and federal resource management agencies, the County shall establish aquifer protection zones. Land Development Regulations shall be established to protect these areas from a reduction of the volume of recharge, to minimize the impact of development on the quality of surface and ground waters, to sustain the rate of flow from springs, and reduce the vulnerability of ground water from contamination."

Policy III-2.1.20 – Springsheds/Conservation Measures: "Within 12 months of the effective date of the Comprehensive Plan, the County will adopt Land Development Regulations and land use strategies, including but not limited to a reduction of land use density and intensity within springsheds, to protect the water quality and discharge volume from springs."

OBJECTIVE III-2.3 SPRINGSHEDS: "The County shall protect, to the maximum extent possible, sensitive areas within and adjacent to all springsheds, including springs, seeps, recharge areas, sinkholes, caves, and other karst features. As opportunities for restoration present themselves, the County will participate, to the maximum extent practicable. The following policies shall apply within springsheds, including but not limited to those in the Wekiva Study Area [not listed here for brevity sake].

Policy III-2.3.1 - Identification and Protection of Springshed Resources: "The County, in cooperation with federal, state, regional, and local agencies, shall use the Floridan Aquifer Vulnerability Assessment, the Wekiva Aquifer Vulnerability Assessment, ground water models, and other tools as appropriate, to identify and map springs and springsheds, and to designate Springshed Protection Zones to protect the springshed and spring systems resources and designate appropriate land uses in these zones.

In and around critical springshed resources and sensitive springshed areas, low density and intensity land uses will be designated, including conservation lands, silviculture, parks and recreation areas, and pastures.

Primary Springshed Protection Zones: Preferred land uses will be rural low density or low intensity uses including preservation, conservation, recreation and open space. In addition, long-crop rotation silviculture33 and unimproved rangeland uses are appropriate within the primary zone.

Secondary Springshed Protection Zones: Preferred land uses will be rural transitional density or low intensity uses including conservation, recreation and open space, silviculture, and rangeland.

Policy III-2.3.2 - Avoid Inappropriate Uses in Springshed Protection Zones: "Within the primary and secondary springshed protection zones, avoid mining, industrial and heavy commercial land uses, golf courses, and urban uses with extensive impervious surfaces. Agriculture shall implement Best Management Practices to protect primary and secondary protection zones.

Policy III-2.3.3 - Acquire Land in Springshed Protection Zones: "The County shall seek to protect primary springshed protection zones through the acquisition of land for conservation or through the purchase of easements in these areas. Karst features with the potential to1 consideration for acquisition by the County.

Policy III-2.3.4 - Development Practices in Springsheds: "In addition to providing for consistency with all provisions of the Future Land Use Element, new development and the expansion of existing development within springsheds shall be required to employ Low Impact Development and Best Management Practices identified in the Florida Department of Environmental Protection/Florida Department of Community Affairs publication *Protecting Florida's Springs—Land Use Planning Strategies and Best Management Practices*, or its successor documents. Existing development shall be required to employ Low Impact Development practices and Best Management Practices, to the greatest extent possible. Land Development Regulations shall be adopted to specify the required practices.

Policy III-2.3.5 - Protect Springsheds and Karst Features Through Purchase: "The County may use revenues and

monies that may become available to match or leverage funds for private or public acquisition programs including but not limited to the Florida Forever Program, the Florida Community Trust, and the Lake County Land Acquisition Program and any other existing or newly implemented program to acquire fee simple ownership or less than fee ownership through conservation easements. Karst features directly impacting or showing the potential to impact ground and surface water quality shall be considered for acquisition by the County with priority given to those areas where acquisition would protect the health and welfare of the citizens and environment.

Policy III-2.3.6 - Create Open Areas within Springsheds: "The County may identify other approaches to create open areas within the springsheds such as connecting existing dedicated open space areas, trails, pedestrian pathways, and, where appropriate, utility corridors to form a greenway system.

Policy III-2.3.7 - Water Quality Monitoring Within Springsheds: "The County shall continue its springs sampling program on a quarterly basis. Regular spring flow measurements shall also be included as a part of this monitoring program. This program shall also provide for periodic sampling and testing of the surface and ground water quality within springsheds and springshed protection zones. Monitoring programs shall be coordinated with sampling and testing programs of the U. S. Geological Survey, Florida Department of Environmental Protection, the Water Management Districts and other federal, state, regional and local agencies. Funding sources shall be sought to enhance the local program.

Policy III-2.3.8 - Environmental Education: "The County shall establish environmental programs to educate the public and community leaders about the relevance to their community and region of springs, springsheds, springshed protection, ground water, aquifers, water pollution, and karst features, and the vital hydrological system of which they are a part. Environmental education programs should enhance the environmental literacy of the public and community leaders with respect to water resources, natural values, and threats facing local springs and springsheds. The County shall coordinate with local colleges, the school board, and individual schools to develop environmental education programs for school-aged children regarding springsheds, water bodies, watersheds and ground water. The educational tools of the Lake County Water Resource Atlas shall be included in these programs.

Policy III-2.3.9 - The Use of Best Management Practices in Agricultural and Silviculture Operations to Protect Springsheds: "Within springsheds, agricultural and silviculture operations shall use Best Management Practices that are compatible with the need to protect springsheds and conserve the water resources pursuant to Section 403.067, F.S. Agricultural and silviculture operations that file a Notice of Intent with the Department of Agriculture and Consumer Services and implement Best Management Practices developed by the Department of Agriculture and Consumer Services and adopt by rule pursuant to Section 403.067, F.S., shall be considered to meet the requirements of this policy. The County shall also encourage the use of the protection practices contained in the publication *Protecting Florida's Springs-Land Use Planning Strategies and Best Management Practices*, (Department of Community Affairs/Department of Environmental Protection, 2002) by Agricultural and Silvicultural uses. The County shall encourage long-crop rotation silviculture and unimproved pasture within the primary zone and minimum tillage farming elsewhere within the springshed. The County shall work with federal, state, regional, and local agencies, and existing agricultural extension programs to educate, encourage and assist farmers and the agricultural industry within springsheds to use Best Management Practices that minimize use of water, fertilizers, herbicides and pesticides and that reduce erosion.

Policy III-2.3.14 - Require Open Space and Buffers within Springsheds: "The County shall require a minimum percentage of dedicated open space for new development within identified springsheds, consistent with the Future Land Use Element. Clustering techniques shall be used to create open space for aquifer recharge and protection of karst features. Development will be clustered on the least sensitive portion of the development site and will establish undisturbed buffer areas of at least 100 feet from karst features with an aquifer connection. Setback and buffer standards established within the Future Land Use Element shall apply within the Wekiva Study Area.

Policy III-2.3.15 - Guide Development Away from Areas of Aquifer Vulnerability and Springshed Protection Zones: "The County shall guide development away from areas of aquifer vulnerability and springshed protection zones identified by the Florida Aquifer Vulnerability Assessment, the Wekiva Aquifer Vulnerability Assessment, or other acceptable methodology approved by the County. A variety of approaches may be used including designation of land use type and density restrictions, buffer requirements, land acquisition and conservation easements.

Policy III-2.3.16 - Identify Karst Features within Proposals for New Development: Karst features shall be accurately identified within development proposals. The County shall require strategies for protecting these features during construction and after development, which promote the following:

• Inclusion of karst features into pervious open space areas;
• Use of landscape design principles to incorporate karst features as aesthetic elements;
• Pretreatment of stormwater runoff, in accordance with applicable federal, state, regional and local regulations, prior to discharge to karst features, and prohibition of stormwater discharge to karst features determined to have

	an aquifer connection; • Prohibition of discharge of wastewater effluent to karst features; and • Perimeter buffering around features to maintain natural function, edge vegetation, and structural protection. Policy III-2.3.17 - Establish a Water Quality Protection Strategy for Springsheds: "The County shall adopt design criteria for stormwater management practices that: • Minimize the leaching or discharge of nutrients and pollutants; • Use karst area requirements similar to those required by the St. Johns River Water Management District; • Consider funding of the Florida Yards and Neighborhoods Program to educate the public about proper lawn and landscaped area fertilization and irrigation; • Incorporate the principles of the Florida Yards and Neighborhoods Program into local landscaping ordinances; • Adopt water conservation programs; • Educate the public about the proper operation and maintenance of septic tanks; • Coordinate with the Florida Department of Health to 1 develop a septic management program to assure that these systems are regularly inspected, pumped out, or brought up to current standards if the system fails; • Promote a local stewardship ―adopt a spring‖ type program and other incentive and volunteer springshed awareness and protection programs; • Ensure any site alteration adheres to Low Impact Development principles and practices, minimizing site disturbance, clearing of natural vegetation, and soil compaction; and, • Require stormwater management systems to be designed according to Low Impact Development principles and practices over conventional systems to the greatest extent practicable. Policy III-2.3.18 - Golf Courses within Springsheds: "The County shall require that all golf course siting, design, construction, management, and monitoring practices within springshed areas in the County, implement golf course practices described in the *Protecting Florida's Springs Manual-Land Use Planning Strategies and Best Management Practices* (Florida Department of Community Affairs and Florida Department of Environmental Protection, 2002), or its successor documents. In addition, the County shall implement Land Development Regulations to further govern the development and management of golf courses within springsheds and aquifer protection zones.
Springs Coast	
Citrus*	The introduction to the CONSERVATION ELEMENT states in part "Citrus County has three spring groups that contain three first magnitude springs (Southwest Florida Water Management District, 2001). A spring group is defined as a complex of springs, often spread over an area of several square miles, which are discharge points for ground water in a discrete ground water basin. The Kings Bay Springs group (also known as Crystal River) is the largest and contains over 30 individual springs. The Homosassa Springs Group and Chassahowitzka Springs Group form the headwaters of their respective coastal rivers." Table 3-2 lists these springs by watershed and the springshed for the springs groups are identified on Figure 3.5.1 and the Springshed Map for Citrus County. CONSERVATION ELEMENT Objective 3.17: "The County will establish appropriate measures to protect its springs, springsheds, and surface water contributing areas." Policy 3.17.1: "The County will develop and assess objective criteria by which to evaluate development for impacts to first magnitude spring systems by 2009. Assessment of impacts may include ground water impacts, surface water impacts, upland vegetative cover, buffers and filter strips, shoreline impacts, wetland systems, site ground area coverage, watershed level impacts, airborne emissions, and hazardous materials management." Policy 3.17.2: "The County will identify the recharge and groundwater contribution areas, or springsheds, of the three first magnitude springs systems, Crystal River/ King's Bay, Homosassa, and Chassahowitzka." Policy 3.17.3: "The County shall map all springs of second degree or lesser magnitude as part of its comprehensive watershed management master plans being developed in cooperation with the Southwest Florida Water Management District." Objective 3.18 Citrus County shall protect the surface water quality of springs, spring runs, and sink holes open to the aquifer. Policy 3.18.1 The County will develop land development regulations to address development and site construction practices adjacent to springs, spring runs, and sinkholes open to the aquifer. Policy 3.18.2: "During construction in the vicinity of springs a buffer of native vegetation of 100 feet or greater shall protect uplands around springs, spring runs, and open sinkholes. When site restrictions interfere with the accommodation of a buffer, an engineered system that meets the same standards of protection may be submitted as an alternative. Spring run shall be defined as a spring fed stream flowing from its source to its confluence into a receiver river, lake, canal, or other body of water. Policy 3.18.3 prohibits certain uses from locating within 500 feet of any spring, spring run creek, sink, or contributing stream or surface waterbody (except for the Cross Florida Barge Canal).

	Policy 3.18.6 sets forth several Best Management Practices for use in the design of stormwater management facilities and systems to reduce nutrient loading. Policies 3.18.7 and 3.18.11 require protection of springs by prohibiting increases in allowed land use intensity at the Generalized Future Land Use level within 100 feet of a spring or open sinkhole and within a Karst Sensitive Area without a hydrogeological analysis that addresses impact to groundwater resources, respectively. Policy 3.19.3 requires building setbacks from springs, spring runs, sinkholes, and caves shall be developed based on best data available by 2009. In the interim, a minimum 100-foot building setback shall be required. The setback shall retain natural vegetation.
Hernando*	CONSERVATION ELEMENT Objective 6.01D: Establish Conservation Areas in the Weeki Wachee Swamp and Floodways of the Withlacoochee River: Policy 6.01D(1): Identify wetlands contiguous to the Gulf of Mexico and upland hammocks within the areas known as the Weeki Wachee Swamp and Chassahowitzka Swamp. Objective 6.02A: Protect the Groundwater Aquifer from Pollution Which Would Adversely Impact Water Quality. Policy 6.02A(1): Coordinate with the Southwest Florida Water Management District and Florida Department of Environmental Protection the identification of aquifer quality, prime recharge areas, sinkholes and pollution sources. Objective 6.02C: Protect the Quality and Quantity of Waters Which Flow Into Estuaries. Policy 6.02C(1): Identify drainage basins which flow directly or through natural springs and their discharge courses into the Gulf of Mexico. Policy 6.02C(2): Evaluate any development proposal for its effect on the quantity and quality of surface waters which flow into the Gulf of Mexico, including stormwater runoff, erosion and sedimentation, and septic tank discharge. Policy 6.03B(2): Establish minimum flows for springs within the coastal zone. Policy 6.08A(8): Prior to development approval in areas above cave systems, the County shall request a geologic assessment of the project by the appropriate state agencies to be used in development review. Policy 6.08A(9): In areas above cave systems, development approvals will not be issued until scientific information is provided to assure that the subsurface karst geologic features and floral/faunal species will not be adversely impacted. A naturally vegetated surface setback shall be formulated to conserve the karst system underlying the property. Subsurface geologic features and their karst connections shall be studied and reviewed by appropriate state agencies with their recommendations and findings used to develop and manage the property.
Pasco	CONSERVATION ELEMENT Objective 1.3: Wetlands Protection, Policy CON 1.3.3 defines Category I Wetlands based on several criteria, two of which are as follows: a. Any wetland of any size that has a hydrological connection (not man-made or by floodplains) to natural surface water bodies, such as natural lakes, rivers, and springs; and b. Any wetland of any size that has a direct connection to the Floridian aquifer by way of an open sinkhole or spring. Policy CON 1.3.12 prohibits industrial uses adjacent to Category I wetlands and "any development which occurs in these locations must demonstrate that no significant adverse impact to the wetlands will result or that adequate mitigation/compensation will be provided to protect function and replace type for type." Policy CON 1.3.13 requires "a minimum 25-foot upland buffer around all post-development Category I wetlands and to provide that a variance from the minimum requirement may be applied to establish the width of Category 1 wetland buffers necessary to protect the natural wetland ecosystem from significant adverse impacts on a case by case basis."
Tampa Bay & Tampa Bay Tributaries	
Hillsborough	The CONSERVATION AND AQUIFER RECHARGE ELEMENT indicates that "many sink holes and springs occur in the Hillsborough River connecting it with the Floridan Aquifer and the Hillsborough River is in an artesian flow area and many springs exist. Three springs are also located along the lower Alafia River, where the confining layers are breached and artesian conditions exist. Policy 4.11: During the development review process, wetlands shall be designated as conservation or preservation on all development plans and plats. A minimum setback of 50 feet shall be required for wetlands designated as Preservation Areas and 30 feet for wetlands designated as Conservation Areas, or as determined by an adopted technical manual pursuant to Policy 19.1. Policy 5.1: The County shall protect the functions and values of all riverine wildlife corridors along rivers in the county as well as along creeks, such as those that may be associated with Rocky Creek, Bullfrog Creek, Cypress Creek, Blackwater Creek, Trout Creek, Double Branch Creek, and other creeks of similar size. Protected functions and values shall include floodwater conveyance, waterstorage, water quality enhancement, wildlife

	habitat, wildlife corridors, groundwater recharge, and minimum stream-flows. The degree of protection may vary depending on the location. Protection methods may include, but are not limited to, density and intensity restrictions of "non-water dependent" land uses. Policy 5.2: The County, through the land planning and development review processes, shall continue to prohibit unmitigated encroachment into the 100-year floodplain of riverine systems. Policy 5.3: Hillsborough County shall encourage clustering to preserve open space to protect floodplains. "River Resources" is a section of the Conservation and Aquifer Recharge Element of the Comprehensive Plan that provides a special focus on the rivers in Hillsborough County: the Hillsborough, Alafia and Little Manatee Rivers. These rivers directly influence development patterns and provide economic opportunities, as well as environmental and recreational benefits. Because of the importance of these rivers, policies are included herein the Plan to address the need for their preservation and proper sustainable use. Policies specifically addressing the Hillsborough River consist of management policies from the Hillsborough River Master Plan. The Plan promotes the adopted goal for the Hillsborough River, which is "To make the Hillsborough River cleaner, safer, and more attractive." A distinct set of policies providing for management direction of the Alafia River recognizes the specific and individual needs of the Alafia River originally identified in the Alafia River Study. These policies will guide future development along the river corridor to achieve the overall goal for the Alafia River which is "To preserve, protect and promote the Alafia River and its natural resources and recreational benefits." The Little Manatee River is the most pristine of the three rivers and requires special consideration. The policies included in this plan address the river's special attributes and are designed to achieve the overall goal, which is to "To recognize and maintain this unique water resource that provides economic and recreational opportunities as well as vital wildlife habitat." Hillsborough County also maintains a "Lithia Springs Park Land Management and Land Use Plan"

*County wherein a first magnitude spring is located.

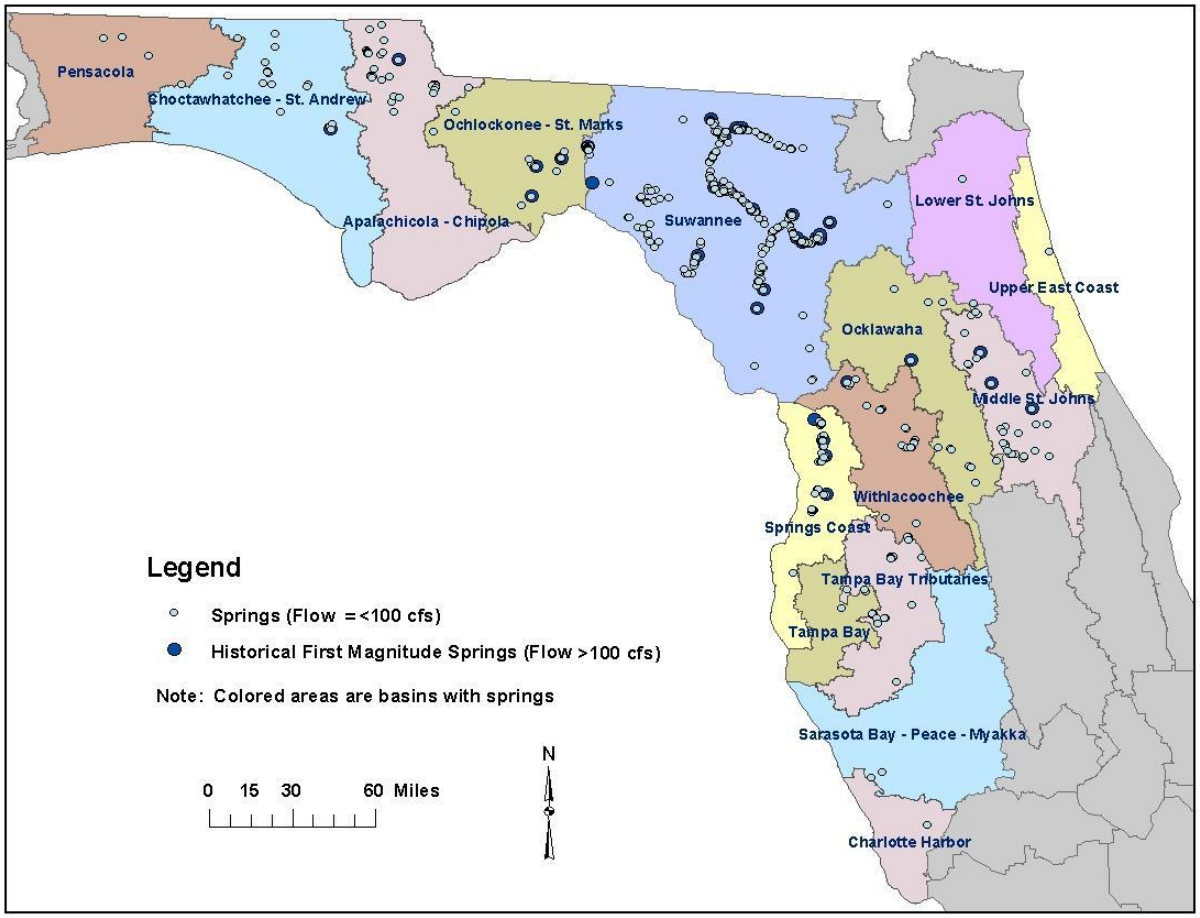

Figure 1 Distribution of Springs in Florida

Source: Florida Springs Initiative – Monitoring Network Report 2008, Figure 1. Thirty-nine of Florida's 67 counties have springs, or include areas of land that contribute water to springs (known as springsheds). These 39 counties comprise roughly half of the state's land area. Springs exist in four of the state's Water Management Districts and four of the FDEP regulatory districts.

http://www.dep.state.fl.us/springs/reports/files/springs_report_08.pdf

Summary of First Magnitude Springs:

Alachua County: Hornsby Spring, Santa Fe River Rise
Bay County: Gainer Springs
Citrus County: Chassashowitzka Spring, Homosassa Springs, Kings Bay Springs
Columbia County: Columbia Spring
Dixie County: Steinhatchee River Rise
Gilchrist County: Devils Ear Springs, Siphon Creek Rise
Hamilton County: Alapaha River Rise, Holton Creek Rise
Hernando County: Weeki Wachee Spring
Jackson County: Blue Springs
Jefferson County: Wacissa Springs
Lafayette County: Blue Spring, Troy Spring
Lake County: Alexander Springs
Leon County: St Marks Spring
Levy County: Fannin Springs, Manatee Spring
Madison County: Blue Spring
Marion County: Rainbow Springs, Silver Glen Springs, Silver Springs
Suwannee County: Ichetucknee Springs, Lime Run Sink
Taylor County: Nutall River Rise
Volusia County: Blue Spring
Wakulla County: Spring Creek Spring, Wakulla Spring