

## CHAPTER 4: INFRASTRUCTURE ELEMENT

**GOAL 4-1: PROVIDE ADEQUATE PUBLIC FACILITIES.** ENSURE AVAILABILITY AND PROVISION OF ADEQUATE PUBLIC FACILITIES INCLUDING POTABLE WATER, SANITARY SEWER, SOLID WASTE, STORMWATER DRAINAGE, AND AQUIFER RECHARGE IN A MANNER WHICH PROTECTS INVESTMENTS IN EXISTING FACILITIES, CONTINUES TO SERVE EXISTING RESIDENTS AND SUPPORTS ORDERLY, COMPACT GROWTH.

**Objective 4-1.1: Ensure Available Public Facilities, Maximize Use of Existing Public Facilities, and Prevent Urban Sprawl.** The City shall require that proposed land uses be adequately served by public facilities, including water, wastewater, storm water management, solid waste disposal and hazardous waste management. The subdivision and site plan review processes shall provide a unified system for maximizing use of existing public facilities and for coordinating the efficient location, timing, phasing, and scale of public and private development.

**Policy 4-1.1.1: Enforce General Performance Standards.** The City of Sanford shall maintain land development regulations that include performance standards requiring that public facilities be provided concurrent with the impacts of new development. The City shall enforce performance standards ensuring that the location, scale, timing and design of development shall be coordinated with public facilities and services in order to prevent the proliferation of urban sprawl and achieve cost effective land development patterns. Urban sprawl shall be further addressed through performance standards that:

- Direct future development only to those areas where provision of public facilities necessary to meet levels of service (LOS) standards are available concurrent with the impacts of the development;
- Maximize use of existing central potable water, reclaimed water and wastewater facilities by requiring that all new development hook up to the City's existing central systems;
- Require all new development connect to irrigation quality reclaimed water lines for irrigation purposes. If not within the required reclaimed water connection distances as listed in the "Utilities Standards and Specifications and Design Standards for Water Conservation" (referred to as the Utilities Manual), new development shall utilize the lowest quality available water for irrigation purposes;
- Avoid expensive development at very low densities surrounding the City's urban core area;
- Promote planned mixed use development within the strategically located westside area, the I-4 interchange, the Waterfront/Downtown Business District, and Airport Industry and Commerce area;
- Conserve wetlands, natural drainage corridors, and other environmentally sensitive areas;
- Prevent extended strip commercial development within the areas designated planned mixed use development by mandating access and curb cut controls together with required dedication of cross easements to restrict and/or to facilitate well planned access, internal circulation, shared parking, and egress; and

- Provide density and intensity thresholds that promote infill.

**Policy 4-1.1.2: Maintain Public Facility Concurrency Requirements.** A concurrency management system shall be maintained and enforced as part of the land development regulations for potable water, sanitary sewer, stormwater management, and solid waste.

**Policy 4-1.1.3: Eliminate Existing Public Facility Deficiencies Prior to Development Approval.** The City shall issue no development order for new development which would result in an increase in demand on deficient facilities prior to completion of improvements designed to eliminate the deficiencies. The City shall include an adequate facilities requirement.

The adequate facilities requirement shall mandate that future applications for development shall include a written evaluation of the impact of the anticipated development on the levels of services for the water and wastewater systems, solid waste system, drainage, recreation, and the traffic circulation system. Prior to issuing a site plan or building permit (whichever is first applicable), the City shall render a finding that the applicant has provided written assurance that the proposed development shall be served with each of the above cited facilities with a LOS at least equal to that LOS stipulated in this Plan. The developers application shall include written assurances that any required improvements shall be in place concurrent with the impacts of the development (i.e., by the time a certificate of occupancy is granted by the City).

**Objective 4-1.2: Meet Projected Public Facility Demands.** The City shall plan for projected public facility demands for the short and long-term planning horizons.

**Policy 4-1.2.1: Coordinate with Capital Improvements Element.** All public facility projects shall be undertaken in accordance with the schedule provided in the Capital Improvements Element.

**Policy 4-1.2.2: Comply with Capital Improvements Element.** All major public facility projects shall be undertaken in accordance with the schedule provided in the Capital Improvements Element of this plan.

**Policy 4-1.2.3: Update Demand and Supply Information System.** The City of Sanford shall develop procedures for updating facility demand and capacity information and shall prepare annual summaries of capacity and demand information for respective facilities and/or service areas as part of the concurrency management program.

**Policy 4-1.2.4: Evaluate Capital Improvement Schedule.** Projects proposed for inclusion in the five-year schedule of capital improvement needs will be annually evaluated and ranked by the City Commission. The evaluation and rank will be based on the following priority level guidelines:

a. "Level 1" - whether the project:

- Protects public health, safety, and environmentally sensitive natural resources.
- Fulfills the City's legal commitment to provide facilities and services.
- Preserves or achieves full use of existing facilities and assigning highest priority to those projects required for purposes of correcting existing system deficiencies.

- b. "Level 2" - whether the project accomplishes the following:
- Increases efficiency of existing facilities.
  - Prevents or reduces future improvement costs.
  - Provides service to developed areas lacking full service or promotes in-fill development.
- c. "Level 3" - whether the project:
- Represents a logical extension of facilities and services in a manner consistent with Future Land Use Element goals, objectives and policies, including the Future Land Use Map.

**Policy 4-1.2.5: Assign Priority for Correcting Existing Deficiencies.** The City shall assign highest priority to projects required to correct existing deficiencies and shall promote urban infill.

**Policy 4-1.2.6: Utilize Criteria for Public Facility Planning and Management Efficiency.** In scheduling the location, timing and staging of public facility improvements, the City Commission shall use the following criteria:

- a. Minimize disruption of services;
- b. Prevent duplication of labor; and
- c. Maintain LOS for all respective facilities.

**Policy 4-1.2.7: Schedule Planned Capital Improvements.** The City Commission shall assure that projects required to meet projected demands for public shall be in the Capital Improvements Element of this plan in accordance with the requirements of Section 163.3177(3), F.S.

**Policy 4-1.2.8: Obtain Permits for Public Facility Projects.** All required federal, State, and County permits shall be obtained before the City undertakes or authorizes contractors to undertake construction and/or operation of facilities.

**GOAL 4-2: PROVIDE SAFE POTABLE WATER.** THE CITY OF SANFORD SHALL ENSURE THAT A SAFE POTABLE WATER SUPPLY WITH SUFFICIENT QUANTITY AND QUALITY TO SERVE THE CITY IS AVAILABLE.

**Objective 4-2.1: Maintain Potable Water System.** The City shall provide an adequate LOS for potable water to meet both existing and future needs by enforcing the standards set forth in the Comprehensive Plan and regulations established by the St. John's River Water Management District (SJRWMD). In addition, the safety, protection, and delivery of potable water shall be supported through the implementation of water conservation practices and regulations.

**Policy 4-2.1.1: Coordinate Future Land Use and Potable Water System Needs.** The City shall require decisions concerning the potable water system needs, plans and the location and timing of improvements to be consistent with land use and conservation resource management policies and with the City's Water Supply Facilities Work Plan (WSFWP) as stipulated in the Comprehensive Plan and with the SJRWMD's regional water supply plan.

The City shall require the following policies governing potable water services:

- a. Require all major development to utilize central services provided by the City.
- b. Discourage individual systems based on generally unfavorable geologic conditions and soils limitations for individual wells.
- c. Ensure that facility expansions are designed in a manner that is consistent with land use densities and intensities reflected on the Future Land Use Concept map of the Future Land Use Plan.
- d. Prohibit the establishment of new private central potable water.
- e. Ensure adequate funding through the City's Utility Fund by a system of customer service fees, development or impact fees, bonds, bond anticipation notes, federal and state grants, utility taxes, developer contributions, special assessment districts and other appropriate revenue sources.
- f. Continue primary administrative responsibilities for the provision of potable water facilities by the Utilities Department and the Department of Engineering and Planning.
- g. Determine whether there will be adequate potable water capacity to serve the new development no later than the anticipated date of certificate of occupancy issuance or its functional equivalent, prior to approval of a building permit.

Maintain the WSFWP Water Supply Facilities Work Plan for a minimum planning period of ten (10) years. The WSFWP addresses issues that pertain to water supply facilities and required needs to serve current and future development within the City's water service area. The City shall review and update the WSFWP at least every five years. Changes to the first five years of the WSFWP shall be included in the annual Capital Improvements Plan update to ensure consistency between the Potable Water Element and the Capital Improvements Element.

**Policy 4-2.1.2: Maintain Potable Water LOS Standard.** On a system wide basis, the City shall provide a LOS of at least 144 gallons a day per person.

**Policy 4-2.1.3: Comply with LOS Standards for Potable Water.** All improvements for replacement, expansion or increase in capacity of facilities shall be compatible with the adopted LOS standards for the facilities. Issuance of development orders or permits shall be conditioned upon demonstrated compliance with applicable federal, state, and local permit requirements for potable water, irrigation quality water, wastewater, drainage, and solid waste facilities.

All improvements for replacement, expansion or increase in capacity of facilities shall be compatible with the adopted LOS standards for the facilities as follows:

- At least 144 gallons per capita per day (gpcd) of potable water Flow demand shall be established from existing records using the best available data.
- Fire flows in single family residential areas shall provide 600 gallons per minute (gpm) at a 20 psi pressure; fire flow for non-residential areas shall provide 1,200 gpm at a 20 psi residual pressure.

- Issuance of development orders or permits shall be conditioned upon demonstrated compliance with applicable federal, state, and local permit requirements for potable water, wastewater, drainage, irrigation quality water and solid waste facilities.

**Objective 4-2.2: Reconcile Existing Potable Water System Deficiencies.** The City shall provide capacity to meet water demand for the next twenty years. The City shall address projected water needs improvement program.

**Policy 4-2.2.1: Initiate Area Wide Planning for Potable Water Systems.** The City shall work with appropriate County and State public agencies monitor private wells for contamination from septic tank leakage, the potential for future problems surrounding the withdrawal of potable water resources, and to develop and implement alternative water projects.

Also, the City shall work with the St. Johns River Water Management District (SJRWMD) to initiate a SJRWMD program or other appropriate areawide approach designed to analyze existing or potential future problems surrounding existing practices of withdrawing potable water resources. Any needed areawide improvements shall be investigated on an areawide basis.

The City will work with the SJRWMD and Seminole County to develop alternative water supply sources such as surface water augmentation, brackish groundwater treatment and aquifer storage and recovery (ASR) system.

**Objective 4-2.3: Adhere to Water Supply Plan.** The City Commission has adopted the 10-year WSFWP 2007 and has incorporated the work plan into the Comprehensive Plan.

**Policy 4-2.3.1: Coordinate with Appropriate Agencies.** The WSFWP will be consistent with the standards and regulations established by the SJRWMD, FDEP, State and other jurisdiction agencies.

**Policy 4-2.3.2: Coordinate Potable Water Facilities Upgrades.** The Water Supply Facilities will be used to prioritize and coordinate the development of future upgrades to existing water facilities and identify alternative water sources in order to meet projected demand.

**Objective 4-2.4: Conserve Potable Water.** The City shall conserve potable water supply by continuing to implement reclaimed water projects and distribute the reclaimed water as a source for non-potable water irrigation. Other conservation measure include requiring the use of water saving fixtures in new construction and mandating use of xeriscape for purposes of reducing demands for irrigation. The City shall also assist in implementing the SJRWMD's emergency water conservation programs.

**Policy 4-2.4.1: Conserve Potable Water Supply.** The following strategies shall be implemented to conserve the City's potable water supply:

- Potable water supplies may not be used to meet irrigation needs for new developments in the City's utility service area and new potable irrigation meters shall be prohibited.

- The Cities of Sanford and Lake Mary and Seminole County reached an agreement to reduce groundwater withdrawals from Floridan Aquifer by expanding reclaimed water use in lieu of potable water for irrigation.
- All new development within the City's service area shall utilize a dual distribution system so that irrigation needs are met by using the lowest quality available water. All new developments within the distance listed in the Utilities Manual should connect to the City's reclaimed water system. Development that are not required to connect to the existing reclaimed water system shall be required to install irrigation lines connected to an alternative water supply system utilizing the lowest quality available water such as capable of connecting to the City's reclaimed water lines when reclaimed water becomes available in the future. All developments shall be required to install an irrigation system.
- The City's water utility shall continue to use conservation measures that include the use of reclaimed water, improving and accelerating leak detection surveys and repair programs, installing and calibrating meters and stabilizing and equalizing system pressures, water conservation blocks, water restrictions, fixture exchanges and public education.
- New or renovated buildings are required to install water conserving plumbing fixtures that are at a minimum consistent with the requirements of the State Water Conservation Act.
- New development shall employ and/or preserve native vegetation, or use drought-resistant plants for landscaping to the greatest practicable extent. Native or drought resistant plants include, but are not limited to, those in the Florida Native Plant Society's Native Plants for Landscaping in Florida, or comparable guidelines prepared by the Florida Department of Agriculture and Consumer Services, the Florida Game and Freshwater Fish Commission, the Florida Department of Natural Resources, the East Central Florida Regional Planning Council, or the St. Johns Water Management District.
- At least twenty percent (20%) of all landscape material obtained from off-site sources for use on any site shall have a soil moisture range of 'dry'. No more than forty percent (40%) of all plant material shall have a high water demand. Plants shall be grouped according to their water needs and soil conditions.
- The City has amended its land development regulations to require all developers to submit water budget plans prepared by a certified landscape architect or certified irrigation contractor that account for all water usage on a site. The plan must include the water requirement for each landscaping or turfed area.

For residential developments, the water budget plan must demonstrate that water requirement for landscaping does not exceed the equivalent residential connection (ERC) of 300 gallons per day. The plan must also include an assurance that the water budget plans are available to every prospective home buyer.

For commercial, industrial and multifamily developments, the developer must demonstrate compliance with the City's take-back reuse program for future growth and development. This program requires new developments that connected to the City's wastewater system to "take-back" the same amount of highly treated effluent as generated by the developments. Effluent from developments will receive tertiary treatment, which can be used for non-potable water purposes such as irrigation and fire protection.

- The City’s water utility will continue to use conservation measures such as reclaimed water for irrigation, improving and accelerating leak detection surveys and repair programs, installing and calibrating meters and stabilizing and equalizing system pressures, water conservation blocks, and fixture exchanges. The programs for technological procedural, and/or programmatic improvements to the production facility, transmission lines, and distribution system to decrease water consumption include multi-year well metering program, water line replacement Capital Projects Program, regular calibration of water facility master meters, meter testing, repair and replacement programs.
- The City’s employee awareness and customer education program concerning water conservation includes brochure mailouts, City Hall brochure rack, Bill Backer messages 8 times a year, Speakers bureau, Florida Friendly/drought tolerant demonstration projects, toilet rebate, automatic meter reading/data logging, and water wise education events.

**Policy 4-2.4.2: Require Reclaimed Water Connection.** All new development shall be required to hook up to the existing central water and wastewater system and reclaimed water system. If not within the required reclaimed water connection distances as listed in the “Utilities Standards and Specifications and Design Standards for Water Conservation”, new development shall use the lowest quality available water for irrigation purposes. The distance from a reclaimed water line shall be measured along the path of the City’s future reclaimed water lines.

Reclaimed Water Connection Distances		
Type and Quantity of Development	Distance from Existing Reclaimed Water Line (Linear feet)	Minimum Line Size
Single family residences (individually owned)	100	2-inch
Single family residential developments		
2 -10 houses	400	2-inch
11- 35 houses	1,400	4-inch
36 -120 houses	2,000	6-inch
121 or more houses	50 ft. each additional house	8-inch
Multi-family or Town home developments		
1-100 units	1,500	4-inch
Greater than 100 units	50 ft. each additional unit	6-inch
Commercial or Industrial developments		
4,999 or less Sq. ft.	900	2-inch
5,000 - 25,000 Sq. ft.	1,250	4-inch
25,001 - 60,000 Sq. ft.	1,500	6-inch
Greater than 60,000 Sq. ft.	200 ft. each additional 100,000 sq. ft.	8-inch

**Policy 4-2.4.3: Use Reclaimed Water and Lowest Quality Available Water for Irrigation.** The City shall continue implementation of reclaimed water. Where available, development must connect to the City’s reclaimed water system. Where not available, development shall install an irrigation system utilizing the lowest quality water available.

**Policy 4-2.4.4: Implement Emergency Conservation of Water Sources.** The City shall comply with the SJRWMD emergency potable water conservation policies by implementing emergency water conservation measures based on the SJRWMD Chapter 40C-21 *The Water Shortage Plan*, F.A.C., for management of the region's water resources through the following actions:

- The City shall increase communication with the District regarding hydrologic conditions during a water shortage warning declared by the District pursuant to Rule 40C-21.231, F.A.C.;
- The City shall provide data as requested by the District in anticipation of and during a declared water shortage or water shortage emergency pursuant to Rule 40C-21.401(1)&(2)(d), F.A.C.;
- Local law enforcement officials must communicate with the District concerning any water emergency declaration or change of restrictions in effect within the City's areas of responsibility pursuant to Rule 40C-21.391(4), F.A.C.;
- The City shall adopt ordinances which substantially incorporate the provisions of the Chapter 40C-21, Water Shortage Plan and which provide for local enforcement as authorized and encouraged by Rule 40C-21.421(1), F.A.C.; and
- The City's water utility shall institute voluntary conservation measures such as improving and accelerating leak detection surveys and repair programs, installing and calibrating meters, and stabilizing and equalizing system pressures pursuant to Rule 40C-21.631(1)(c), F.A.C.

When a critical water shortage is declared by the District, the initial pressure of City's water utility will be reduced by at least 15% where it is operationally feasible to do so. Prior to the reduction of pressure, the utility will notify the appropriate firefighting agencies and make arrangements for direct communication when additional pressure is required pursuant to Rule 40C-21.651(1) (c) 1, F.A.C.

**GOAL 4-3: PROVIDE ADEQUATE SANITARY SEWER FACILITIES.** PROVIDE A LEVEL OF SANITARY SEWER TREATMENT THAT MEETS THE ESTABLISHED WATER QUALITY BASED EFFLUENT LIMITATIONS ESTABLISHED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THE CALCULATED LEVEL OF SERVICE FOR THE SYSTEM.

**Objective 4-3.1: Reconcile Existing Sanitary Sewer System Deficiencies.** The City shall ensure that deficiencies in public wastewater facilities are corrected and will amend the Plan to provide for the correction.

**Policy 4-3.1.1: Enforce Conditions Governing Development Orders or Permits.** Issuance of development orders or permits shall be conditioned upon demonstration of compliance with applicable federal, State, and local permit requirements for on-site wastewater treatment systems.

The City shall regulate the location, timing, and scale of development in order to assure that new development shall be effectively served by wastewater services. The City shall discourage the proliferation of package treatment plants and discourage use of septic tanks and wastewater drain fields in areas unsuited for their adaptation. System reviews shall be coordinated with the State Department of Environmental Protection (DEP) in order to promote best management practices

and compliance with relevant State permitting procedures.

**Policy 4-3.1.2: Maintain Sanitary Sewer LOS Standard.** The City's wastewater system shall provide a LOS standard of 132 gallons per person per day.

**Objective 4-3.2: Enforce Standards For On-Site Sanitary Sewer Treatment Systems.** The City shall assist in assuring implementation of State regulations imposing mandated standards for inspections, operation, and maintenance of on-site wastewater treatment systems. The City shall require residents connect to the public wastewater system where available. When wastewater facilities are not available, the City shall enforce the following design, collection performance, and disposal criteria for wastewater facilities:

- Design flows
- Pump selection
- Wet well design
- Emergency pump connections
- Pump motors and pump controls
- Submersible pump facilities
- Landscaping and buffer requirements
- Testing procedures

The City shall enforce State regulations imposing mandated standards for inspections, operation, and maintenance of on-site wastewater treatment systems.

**Policy 4-3.2.1: Condition On-Site Sanitary Sewer Treatment Systems Use.** On-site wastewater treatment systems use shall be limited to the following conditions:

- a. Existing septic tank and package treatment plants may remain in service until such time as the City of Sanford public wastewater system is made available.
- b. Use of private water septic tank systems for new development shall be restricted to sites which are inaccessible to the City's wastewater service system. However no such septic system shall be allowed without prior approval of Utilities Director. No construction or alteration of a septic tank shall be permitted without approval by the Seminole County Environmental Health Services Unit of all related plans and specifications governing the type, location, capacity, design, and layout. All such specifications shall comply with applicable State, County or City regulations.
- c. When City wastewater systems are temporarily unavailable, the City shall consider approving use of an interim treatment plant. Use of package treatment plants shall comply with applicable laws governing the location, use, and design of the facility. Package treatment plants shall be designed in a manner which facilitates future connection and integration with the City public wastewater system.

**Policy 4-3.2.2: Comply with On-Site Sanitary Sewer Treatment and Water Quality Regulations.** The City shall coordinate with appropriate federal, State, and County agencies and amend local ordinances as required to assure that issuance of permits for replacement or expansion of existing on-site wastewater treatment systems is conditioned upon compliance with current regulatory requirements and water quality standards.

**Policy 4-3.2.3: Coordinate with the Seminole County Public Health Unit.** The City shall require that all proposed development that impacts an existing septic tank or generates need for a new septic tank be required to provide evidence of approval by the Seminole County Public Health Unit prior to receiving a development order or permit from the City. Any such approval by the City shall be conditioned upon the applicant's compliance with Seminole County requirements for ongoing facility maintenance and operation.

**GOAL 4-4: PROVIDE SOLID WASTE COLLECTION AND DISPOSAL.** PROVIDE SOLID WASTE COLLECTION ON A REGULAR BASIS IN ORDER TO MAINTAIN THE APPEARANCE OF THE CITY AND PROTECT THE PUBLIC HEALTH.

**Objective 4-4.1: Provide Adequate Solid Waste Service.** The City will continue to collect household refuse in residential areas. The City shall coordinate with Seminole County to ensure that the County provided facilities will continue to maintain sufficient capacity to accommodate solid waste generated by the City.

**Policy 4-4.1.1: Maximize Existing System.** The City shall coordinate with Seminole County to achieve improvements in hazardous and solid waste collection and disposal and continue to reduce solid waste volumes. In addition, the City shall cooperate with the County and other appropriate agencies to increase recycling programs and address:

- Enhance solid waste collection and transfer operations;
- Curb illegal dumping of solid waste as well as disposal activities which adversely impact natural systems;
- Draft policy for appropriate regulatory measures governing solid waste and hazardous waste including identification of long term operating costs and capital improvement needs associated with various policy options.

**Policy 4-4.1.2: Maintain Solid Waste LOS Standard.** The City hereby adopts the Seminole County solid waste LOS standards and will continue to coordinate with the County to recalculate the LOS standards when needed.

Facility Type	Service Area	Adopted LOS
Osceola Road Landfill	Countywide	4.2lbs /capita/day
County Central Transfer Station	Countywide	4.3 lbs/capita/day

Source: Seminole County Evaluation and Appraisal Report Amendments Solid Waste.  
 Adopted by Seminole County Ordinance 2007-46

**GOAL 4-5: PROVIDE ADEQUATE STORMWATER MANAGEMENT FACILITIES.** PROVIDE ADEQUATE STORMWATER MANAGEMENT IN ORDER TO PROTECT AGAINST FLOOD CONDITIONS AND PREVENT DEGRADATION OF QUALITY OF RECEIVING WATERS AND ENVIRONMENTALLY SENSITIVE NATURAL RESOURCES.

**Objective 4-5.1: Protect Natural Drainage Features.** The City shall regulate land development to ensure that the natural functions of wetlands, river basins, lakes and ponds, natural drainage corridors, and floodplains are maintained and perpetuated.

The City shall require that all new development shall be required to submit site plans which incorporate management techniques for preserving the functions of natural drainage features. The site plan review process shall incorporate performance standards which ensure that techniques applied by private developers are designed to achieve this objective. The City shall incorporate LOS standards cited herein. The City shall include a concurrency management program which ensures that all new development will construct requisite drainage improvements which meet or exceed the adopted LOS standards prior to the impacts of development.

**Policy 4-5.1.1: Coordinate and Implement Storm Water Management Policy.** The City shall enforce the stormwater management and flood prevention requirements. The City shall require:

- Wetland protection. Protect existing wetlands from the impacts of development. Wetlands shall continue to be identified based on hydric soils and wetland vegetative species.
- Wetland buffers. Wetland buffers of twenty-five (25) feet in width shall be provided adjacent to wetlands that are five (5) acres or less; a wetland buffer of fifty (50) feet in width shall be provided adjacent to wetlands that are greater than five (5) acres. The area of wetlands in question shall include all contiguous wetlands on the site and adjacent to the site. The width of the wetland buffer shall be measured and provided parallel to the wetland buffer in question.
- Floodplain protection. New development shall not reduce the storage capacity of the floodplain or limit the flow capacity of the floodway. Retention and detention facilities shall comply with level of service criteria and no alterations shall be allowed within the ten (10) year floodline. Soils which have been identified by the Soil Conservation Service as having a very low potential for septic tank absorption fields shall be considered unsuitable for retention-detention ponds.

Traversing works in a floodplain shall not create a net reduction in either flood flow or flood storage capabilities immediately upstream or downstream of the structure.

- Compensatory storage. Reshaping and filling within floodprone areas shall be balanced by providing an equal volume of compensatory storage. Such compensation shall be located between the ordinary high water elevation and the one hundred (100) year elevation. Fill shall be placed below the ten (10) year flood elevation and in no case shall fill in the floodplain extend beyond one hundred (100) feet beyond the original floodline. Reshaping the floodplain shall not create a rise in flood elevation, reduce flood storage capabilities, increase flood flow velocities, or reduce flood flow capacity.
- Predevelopment conditions maintenance. In general, neither the rate nor the quantity of stormwater runoff shall be increased. All site alteration activities shall provide for such water retention, settling structures, and flow-attenuation devices as may be necessary to ensure that level of service standards are met. Whenever possible, the nonstructural approach shall be used to meet both surface quantity and quality requirements. Drainage systems for each development shall be sized to accommodate existing upstream runoff. Site alternations shall not adversely affect the existing surface water flow pattern. Drainage sub-basin boundaries shall be maintained.

- Natural drainage ways and watercourses protection. Developments that contain an existing natural drainage way or watercourse, related floodplain and adjacent vegetation shall maintain and incorporate such features into the project design. Drainage system design shall ensure that sediment from runoff will not enter the natural drainage way.
- Existing surface drainage maintenance and adverse impacts prevention. Site alteration shall not cause siltation of wetlands, pollution of downstream wetlands, or reduce the natural retention or filtering capabilities of wetlands.
- Maximize recharge. Sites shall be developed to maximize the amount of natural rainfall which is infiltrated into the soil and to minimize direct overland runoff into adjoining streets and watercourses. Stormwater runoff from roofs and other impervious surfaces shall be diverted into swales or terraces on the site when possible. To the extent feasible, runoff from impervious areas shall be diverted so as to flow over vegetative areas prior to flowing into gutters, storm drains, and retention areas. Easements for drainage facilities must be shown on required plans. In addition, the City shall prohibit land use activities which generate or use such hazardous substances as oil, gasoline, and other toxic substances on sites which are designated as the City's "most effective" recharge areas. These areas are delineated on the water resources map in the land use data inventory and analysis.

**Policy 4-5.1.2: Coordinate Watershed Management Plans and Policies with Appropriate Public Agencies.** Coordinate management plans and policies, with appropriate local, regional, state and federal agencies, including Seminole County, St. Johns River Water Management District, East Central Florida Regional Planning Council, the State Department of Environmental Regulation, the Agricultural Extension Service, the United States Army Corps of Engineers, and other appropriate agencies.

**Policy 4-5.1.3: Maintain Stormwater LOS Standard.** The City hereby establishes the following LOS standards for stormwater quantity and quality:

<b>Drainage System by Facility Type</b>	
Facility Type Event <sup>1</sup>	LOS Standard/Storm
Retention/Detention for parcels with positive outfall	25-Year, 24-Hour
Retention for parcels without positive outfall	25-Year, 96-Hour
Closed drainage for urban streets with piped drainage	10-Year, 24-Hour
Open drainage for rural streets with swales	10-Year, 24-Hour
Canals, ditches, culverts, and other off-the-premise facilities	25-Year, 24-Hour
Bridges and major highway crossings	100-Year, 24-Hour

(1) The design frequency may be increased if deemed necessary by the Administrative Official.

(2) Mill Creek/Cloud Branch basins shall have a 25-year, 6-hour retention/detention for parcels with positive outfall since these basins are currently incorporate significantly older drainage systems. For purposes of designing practical improvements to such older systems, the City shall adopt a 25-year, 6-hour storm event for the period 1991-1995. The City's long term objective for redesigning these older drainage systems shall be the 25-year, 24-hour storm event for the period 1996-2005.

**LOS Standard for Water Quality and Pollution Abatement:**

Pollution Abatement. The City shall maintain the LOS standards included in the City's current Land Development Regulations, Schedule O, Section 2.1 Retention-Detention Facilities, page O-3, which are as follows:

Retention of the first half-inch runoff - Provide on-site retention or detention with filtration for the first one-half inch of runoff or the runoff from the first one inch of rainfall, whichever is greater. Parcels greater than 100 acres shall retain runoff from the first one inch of rainfall.

Water Quality LOS:

- All storm water treatment and disposal facilities shall meet design and performance standards required by the City.
- Treatment of the first inch of run-off on-site to meet water quality standards required by the City.
- Stormwater discharge facilities must be designed so as not to degrade the receiving water body below the minimum conditions necessary to assure the suitability of water for the designated use of its classification. Where a conflict exists between two or more LOS standards, the more restrictive shall be enforced.

**Policy 4-5.1.4: Ensure the Quality and Quantity of Stormwater.** The City's surface water management program shall protect and preserve the hydrological and ecological functions of water resources while permitting the most favorable beneficial uses to occur. The City shall promote both land and water management programs and practices that limit runoff and enhance percolation in order to increase the quantity and protect the quality of groundwater. Land use controls shall be used to accomplish this program. The programs shall be updated based on improved knowledge of problems, issues, and best management practices.

**Policy 4-5.1.5: Pursue the Development of Adequate Off-Site Surface Water Management Facilities.** The City shall manage stormwater based on watershed management plans. Implementing strategies shall provide a basis for evaluating the performance of existing off-site drainage facilities, identifying existing and potential future problems or issues, and funding necessary structural and non-structural system improvements for effective surface water management. Existing structures which cause adverse impacts to water resources or sensitive natural resources shall be identified and corrective measures shall be coordinated with appropriate entities. No new development shall be allowed which overloads existing off-site facilities or unduly increases the potential for flooding.

**Policy 4-5.1.6: Implementing Storm water Management Plan.** The City has commissioned a fifty thousand (50,000) dollar engineered drainage study designed to provide a basis for establishing a stormwater utility. The study shall examine assessment alternatives for achieving revenues required for operation and maintenance of stormwater infrastructure. The City shall establish a program and funding mechanisms necessary to identify needed drainage improvements within the Cloud Branch/Mill Creek basins. As stated in the drainage system data inventory and analysis, the Cloud Branch/Mill Creek basins. The study shall address, but shall not necessarily be limited to:

- a. Plans for protecting natural drainage corridors and other natural drainage features, including acquiring necessary drainage easements;
- b. Funding mechanisms necessary for achieving any needed future drainage improvements within the Lake Monroe Sub-Basin and other sub-basins;
- c. Organizational structure and funding mechanisms for carrying out necessary operation and maintenance programs;
- d. Cleaning and reshaping approximately 33,000 linear feet of open drainageway in the Mill Creek basin and 11,000 linear feet in the Cloud Branch basin;
- e. Upgrading and adding several new road crossings in both basins;
- f. Adding three retention/detention ponds in the Mill Creek basin and two ponds in the Cloud Branch basin to attenuate peak flow rates and lesson flooding in upstream areas; and
- g. Adding piping to carry water from Mill Creek and Cloud Branch more efficiently.

**Policy 4-5.1.7: Continue to Manage Stormwater Impacts of New Developments.** The City shall protect natural resources by requiring that all new development comply with the following criteria:

- preserve the natural function of floodplains and floodprone areas and maintain natural topography and hydrological functions of floodplains;
- maximize aquifer recharge areas;
- minimize dredge and fill operations requiring removal of natural vegetation; and
- protect wetlands from untreated runoff.

In addition, the City shall require that all new development be effectively integrated into the City's existing stormwater management system. For instance, new development shall neither overload existing natural or man-made conveyance systems nor adversely impact water quality. New development shall comply with the following criteria:

- **Maintain Predevelopment Conditions** - In general, neither the rate nor the quantity of stormwater runoff shall be increased.
- **Provide Necessary Facilities** - All site alteration activities shall provide for such water retention and settling structures and flow-attenuation devices as may be necessary to insure that the foregoing standards and requirements are met.
- **Favor Nonstructural Approach** - When possible, the nonstructural approach shall be used to meet both surface water quantity and quality requirements.
- **Provide Stand-Alone System** - The drainage system for each phase of a development shall meet the requirements of these regulations. Such systems shall be functionally independent of planned but unbuilt phases of the development project in question.

- Accommodate Upstream Runoff - The drainage system for each development shall be sized to accommodate existing upstream runoff.
- Maintain Existing Surface Drainage - Site alteration shall not adversely affect existing surface water flow pattern. Drainage subbasin boundaries shall be maintained.
- Prohibit Deep Ditches - Open drainageways with slopes of greater than three to one (3:1) shall be prohibited.
- Permit Natural Drainage ways and Watercourses - Developments that contain an existing natural drainage way or watercourse, related floodplain and adjacent vegetation shall maintain and incorporate such features into the project design. Drainage system design shall insure that sediment from runoff will not enter such natural drainageways.
- Regulate Runoff Rates and Volumes - Permitted rates and volumes of stormwater runoff, whether discharged into natural or artificial watercourses, shall meet existing water quality standards at the first downstream receiving water body for which such standards have been established.
- Prevent Adverse Impact - Site alteration shall not cause siltation of wetlands, pollution of downstream wetlands or reduce the natural retention or filtering capabilities of wetlands.
- Maximize Recharge - The parcel shall be developed to maximize the amount of natural rainfall which is infiltrated into the soil and to minimize direct overland runoff into adjoining streets and watercourses. Stormwater runoff from roofs and other impervious surfaces shall be diverted into swales or terraces on the lot when possible.
- Divert Overland Flow - To the extent feasible runoff from impervious areas shall be diverted so as to flow over vegetated areas prior to flowing into gutters, stormdrains and retention areas.
- Provide Drainage Easements, General - Where necessary and as otherwise prescribed or required in this ordinance, easements for drainage facilities, as approved by the Administrative Official, shall be provided.
- Provide Off-site Easements - Off-site easements necessary to the function of the drainage system shall be provided.
- Show Easements on Plans - Easements for drainage facilities must be shown on required plans and approved by the City.
- LOS Standards for Facilities and Pollution Abatement.
- Retention of the First Half Inch of Runoff.
- Level of Service Standards for Water Quality.
- Provide Storm Water Management Facilities Compatible with Soils - The design of stormwater management facilities shall be designed in a manner compatible with soil conditions as set forth in the Soil Survey of Seminole County, Florida and supplements thereof as prepared by

the U.S. Department of Agriculture, Soil Conservation Service. In areas where the soils are poorly drained or experience a high groundwater table, such facilities shall be designed for detention with filtration.

- Adopt Design Specifications for Stormwater Facilities - The City shall adopt specifications for the following stormwater management facilities and easements consistent with best management principles and practices:
  - Outfall Criteria
  - Retention Ponds
  - Construction Requirements
  - Underdrains
  - Roadway Drainage Design
  - Storm Sewer Design Criteria
  - Culvert Design Criteria
  - Drainage Pipes and Structures
  - Open Storm Drainage Systems
  - Drainage Structure Material Specifications
  - Easements

**Objective 4-5.2: Reconcile Existing Stormwater Management Deficiencies.** The City shall continue to reconcile deficiencies in the drainage system through the implementation of identified capital improvements projects, and by maintaining the stormwater utility district as a dedicated funding source for drainage improvements. The City shall continue to comply with the standards for discharge authorized by EPA permit No. FLS 000038 or its successor under the National Pollutant Discharge Elimination System.

**Policy 4-5.2.1: Continue Stormwater Management System Inspection and Maintenance.** The City shall ensure that major drainage systems are inspected and receive required maintenance on an annual basis.

**GOAL 4-6: PROTECT GROUNDWATER AQUIFER RECHARGE AREAS FUNCTION.**  
THE FUNCTIONS OF NATURAL GROUNDWATER AQUIFER RECHARGE AREAS WITHIN THE CITY SHALL BE PROTECTED AND MAINTAINED.

**Objective 4-6.1: Coordinate Surrounding Aquifer Recharge Issues.** The City shall maintain the functions of natural groundwater aquifers and regulate development that may present a threat to the natural aquifer recharge process. New development proposed within aquifer recharge areas shall be coordinated with the SJRWMD in order to ensure maintenance of aquifer recharge area functions. During the development review process the City shall ensure that the functions of the City's most effective natural groundwater recharge areas are protected by:

- Conserving open space;
- Prohibiting uses within recharge areas which generate or otherwise require on site use of hazardous materials;
- Preserving predevelopment soil types, grade elevations, drainage rates, and water levels; and
- Minimizing reduction of recharge to the surficial aquifer.

**Policy 4-6.1.1: Protect Surficial Aquifer Recharge Areas.** The City shall assist with protecting groundwater from point and non-point pollution sources by including the St. Johns River Water Management District in the review of development plans located within areas designated as "most effective" recharge areas. This review process shall ensure conservation and efficient use of water as it travels through groundwater systems.

The City shall regulate new development to ensure the maintenance of adequate supplies of high quality groundwater. The City shall assist the State and in managing water quality by involving appropriate State agencies and the SJRWMD review of water quality management issues, including the discharge of inadequately treated wastewater and poor quality stormwater into public water bodies.

The City shall require and enforce standards which minimize impervious surface coverage in the City's "most effective recharge areas". The City shall further enhance the natural groundwater aquifer recharge function in the City's most effective recharge areas through the City's water reuse system.

The City has identified 16 potential recharge sites which can be used for groundwater recharge in order to offset groundwater withdrawal.

The City shall coordinate with SJRWMD and other applicable regulatory agencies to identify free flowing deep aquifer wells and require protective measures that include, but are not limited to, capping, plugging, or installing regulatory devices which control the discharge of water from the deep aquifer.

**Policy 4-6.1.2: Protect Deep Aquifer Water Resources** The City shall coordinate with the SJRWMD and other applicable regulatory agencies to identify free flowing deep aquifer wells and require protective measures that include, but are not limited to, capping, plugging, or installing regulatory devices which control the discharge of water from the deep aquifer.

**Policy 4-6.1.3: Retain Run-off to Maximize Recharge.** The City shall require stormwater management techniques for retention of storm water run-off to maximize groundwater recharge. In order to achieve such stormwater retention, the City shall require that the criteria for the following water retention, settling structures, and flow attenuation devices are met:

1. Drainage Easements, and Site Preparation or Excavation.
  - Maintain Existing Surface Drainage. Site alteration shall not adversely affect existing surface water flow pattern. Drainage subbasin boundaries shall be maintained unless it is determined to be in the public interest to allow such change in established drainage patterns.
  - Maximize Recharge. Parcels shall be developed to maximize the amount of natural rainfall which is infiltrated into the soil and to minimize direct overland runoff into adjoining streets and watercourses. Storm water runoff from roofs and other impervious surfaces shall be diverted into swales or terraces on the lot when possible.

- Divert Overland Flow. Runoff from impervious areas shall be diverted using one of the following techniques before entering a receiving water body:
    - The runoff shall be diverted so as to flow over vegetated areas.
    - The runoff shall be diverted to a detention pond with the ability to attenuate peak outflows to pre-development rates and to provide filtration for the pollution volume.
  - Design Dry Retention Ponds. Unless retention ponds are approved as a water feature or other similar special facility, such retention-detention facilities shall be designed to insure dry bottom within seventy-two (72) hours after the design storm event. Dry bottom shall mean the absence of standing water.
  - Design Without Positive Outfall. Developments without a positive outfall for discharge shall retain all runoff resulting from the design storm as computed for the developed condition.
  - Design Based on Soils. The design of stormwater management facilities shall be based upon soil conditions as set forth in the Soil Survey of Seminole County, Florida and any supplements thereof as prepared by the U.S. Department of Agriculture, Soil Conservation Service. In areas where the soils are poorly drained or experience a high groundwater table, such facilities shall be designed for detention with filtration.
    - Retention - Retention ponds shall be designed to retain the difference in runoff volume between pre and post-development or the pollution abatement volume, whichever is greater.
    - Exfiltration - Exfiltration systems shall be designed to store and exfiltrate over the duration of the storm the difference in runoff volume between pre and post-development or the pollution abatement volume, whichever is greater.
2. Wetlands, Flood-prone Areas, and Effective Aquifer Recharge Areas. These regulations shall apply to any use or alteration of a parcel which contains environmentally sensitive lands within the corporate limits of the City of Sanford. Environmentally sensitive lands include wetlands, soils with limited potential for certain manmade activities, flood-prone areas and areas with effective groundwater aquifer recharge characteristics.
- Wetland Design and Performance Criteria. Uses and activities in wetlands shall comply with the following design and performance criteria:
    - Retain Natural Drainage Characteristics - Natural surface water patterns shall be maintained. Proposed drainage conditions shall approximate existing drainage conditions. The velocity of water flowing through wetlands shall remain approximately the same before and after development.

- Minimize Alteration or Modification - No land use or development shall be permitted that would result in the elimination of any beneficial function of a wetland. If permitted, any alteration or modification of wetlands shall be the minimum necessary to conduct the use or activity.
3. Flood-Prone Area Design and Performance. Uses and activities in flood-prone areas shall comply with the following design and performance criteria:
- Retention - Detention Facilities. Retention - detention ponds proposed to be located in flood-prone areas shall:
    - Ten-year Flood Plain - Be located above the 10-year flood elevation. No alteration shall be allowed within the 10-year flood line.
    - Soil Suitability - Be located in soils that are suitable for retention-detention ponds. Soils which have been identified by the Soil Conservation Service as giving a very low potential for septic tank absorption fields shall be considered as unsuitable for retention-detention ponds.

**Policy 4-6.1.4: Coordinate with Other Recharge Protection Programs.** The City, in concert with local, State, and federal agencies, will achieve regional aquifer recharge protection through the following:

- Implement Drainage Policy Concerning Maximizing Ecosystems;
- Protect Surficial Aquifer Recharge Areas;
- Deep Aquifer Water; and
- Retain Run-off to Maximize Recharge.

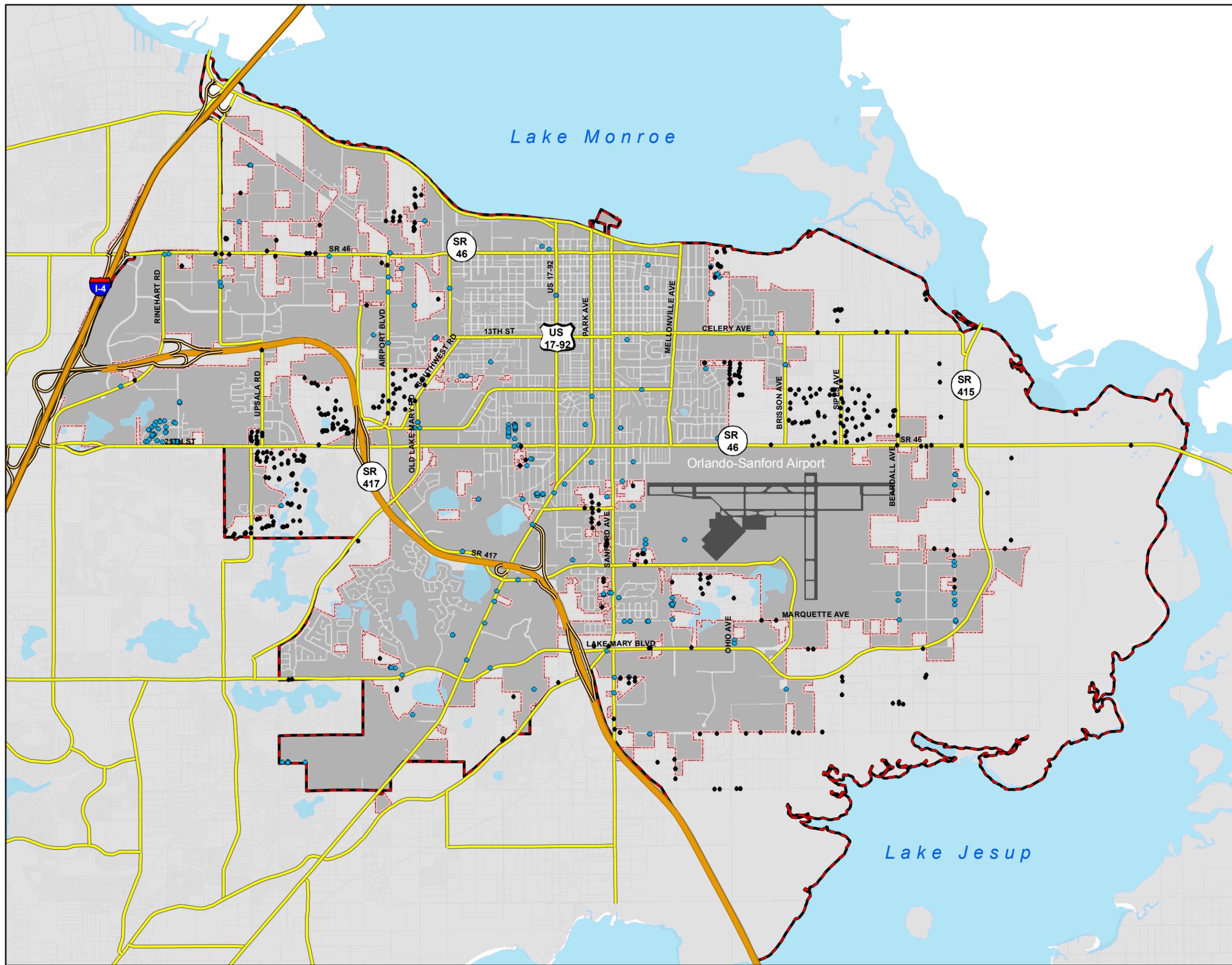
**Policy 4-6.1.5: Water Quality Standards for New Development.** New development shall be coordinated with appropriated State agencies to ensure that State water quality standards are met. Storm water discharge facilities shall be designed so as not to degrade the receiving water body below the minimum conditions necessary to ensure the suitability of water for the designated use of its classification.

**Policy 4-6.1.6: Coordinate Land Use and Development Activity to Protect Wellfields.** The City shall regulate land development activities in order to protect potable water from contamination by establishing protective zones around municipal potable water wells and prohibiting certain land uses and activities within the zones which have the potential to contaminate groundwater. No new development shall be allowed within a 200 foot radius of any proposed wellhead. In addition, no land uses which store, handle, or generate hazardous materials or wastes shall be located within the 10 year horizontal capture zones of the Upper Floridan aquifer for each wellhead. The location of the wellfield protection zones shall be based on analysis of the most current hydrological data and may be amended from time to time as updated information becomes available.

# City of Sanford

Map: 4-1

Septic Tank Areas



### Legend

- City Limits
- Water Service Area
- Septic Tanks in Water Service Area
- Septic Tanks within the City Limits



# City of Sanford

Map: 4-2

## Solid Waste Facilities

### Legend

● Solid Waste Facilities

▭ City Limits

### Municipality

▭ Altamonte Springs

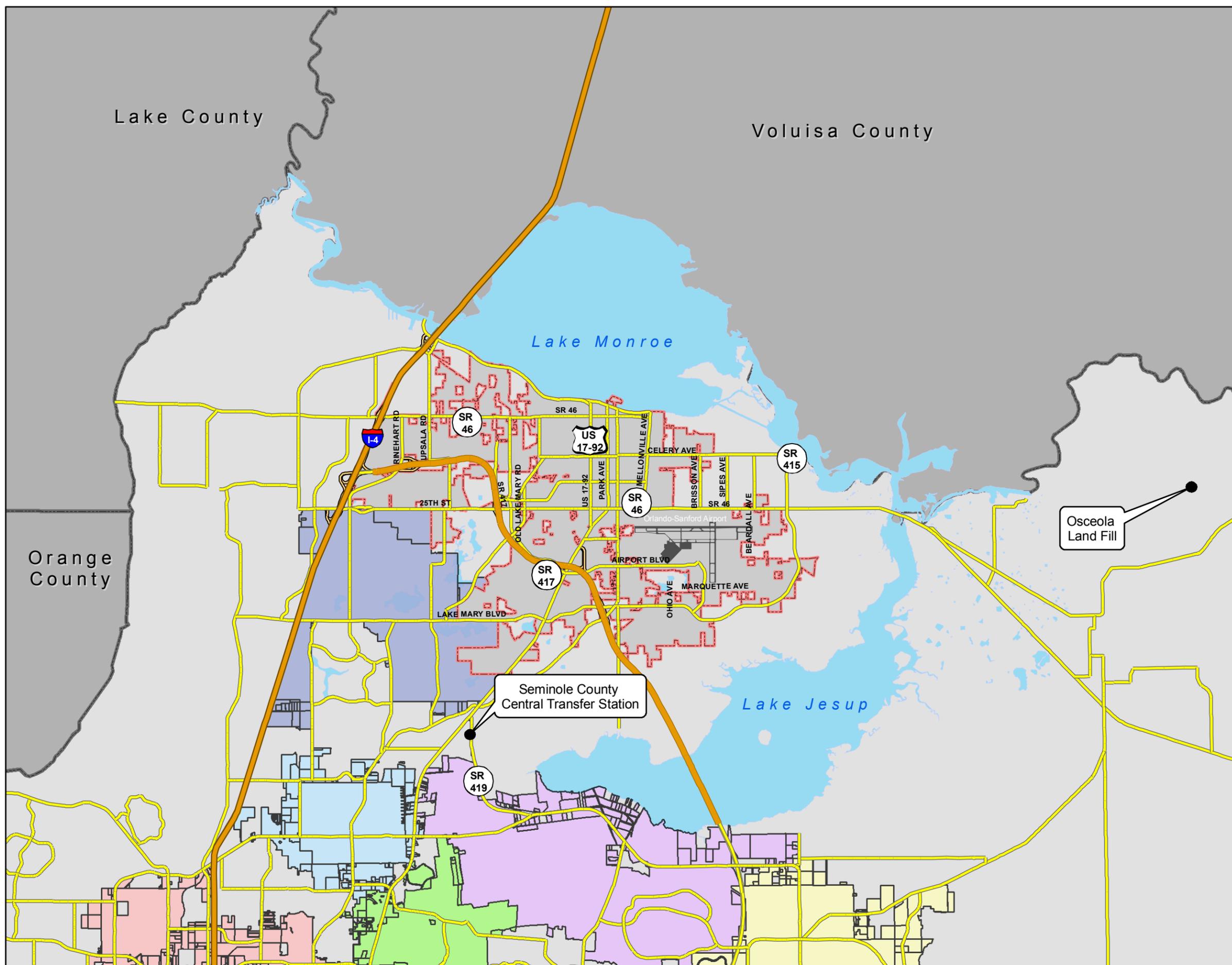
▭ Casselberry

▭ Lake Mary

▭ Longwood

▭ Oviedo

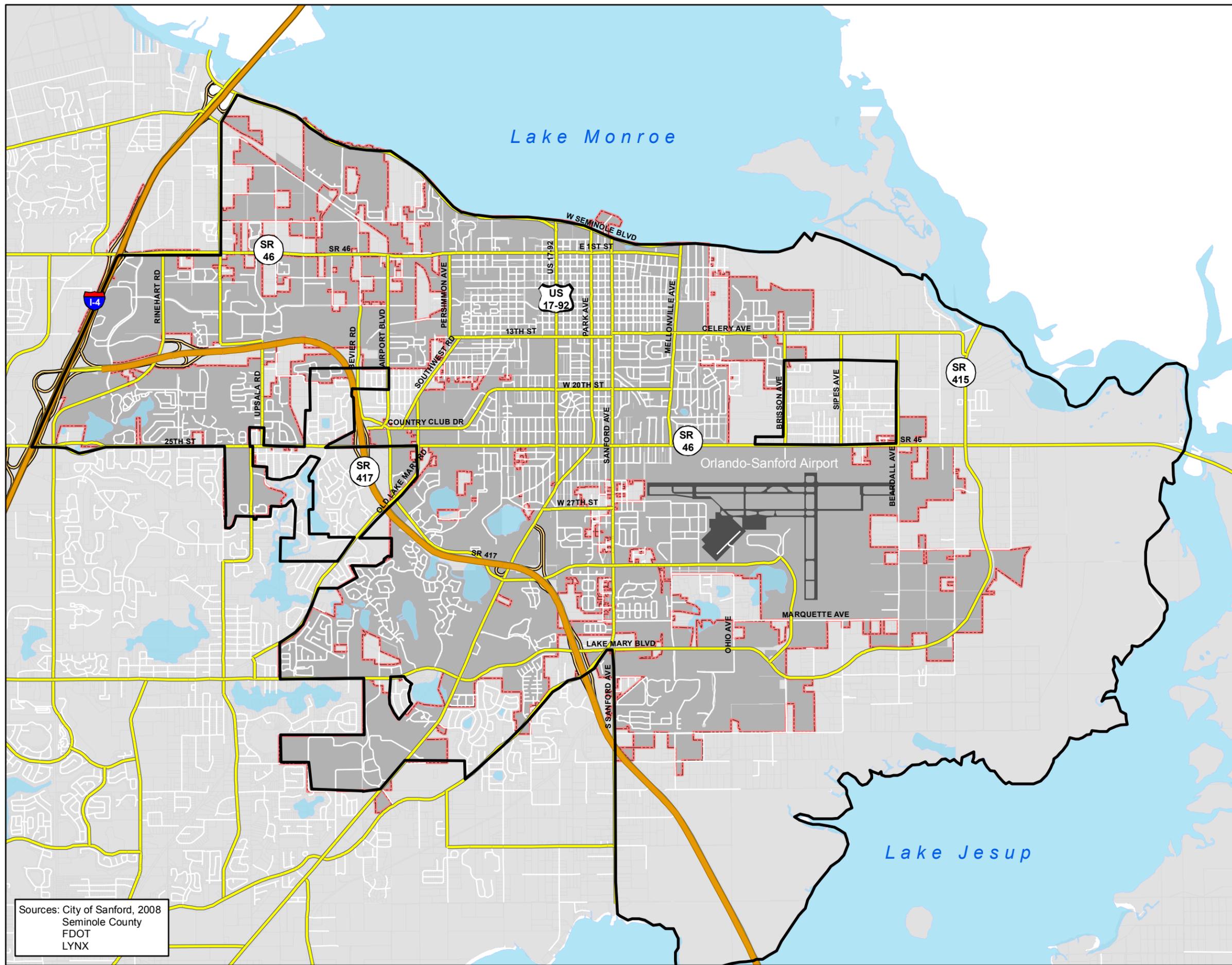
▭ Winter Springs



# City of Sanford

Map: 4-3

Water Service Area



## Legend

-  Water Service Area
-  City Limits
-  Local Roads



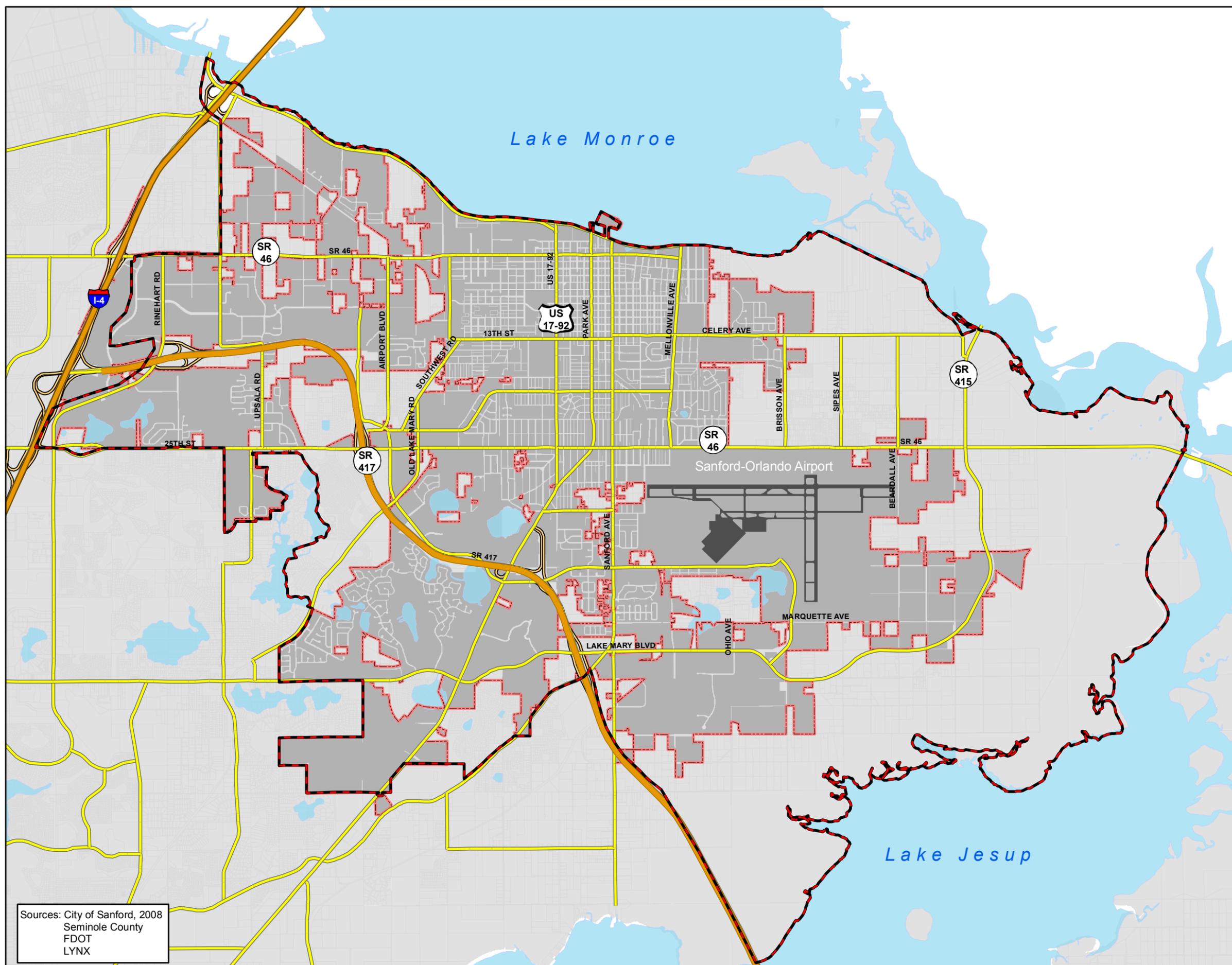
Sources: City of Sanford, 2008  
Seminole County  
FDOT  
LYNX



# City of Sanford

Map: 4-4

Sanitary Sewer  
Service Area



## Legend

-  City Limits
-  Sanitary Sewer Service Area



Sources: City of Sanford, 2008  
Seminole County  
FDOT  
LYNX

