CHAPTER 6 (D)

ST. LUCIE COUNTY
COMPREHENSIVE PLAN

SANITARY SEWER SUB-ELEMENT

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ST. LUCIE COUNTY
SANITARY SEWER -SUB ELEMENT

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ST. LUCIE COUNTY
SANITARY SEWER ~~-~~SUB ELEMENT

INTRODUCTION

The Sanitary Sewer Sub-Element provides a complete summary of the wastewater treatment facilities in St. Lucie County. Sanitary sewer services are provided in only a small portion of the unincorporated County. Central utility services are provided by ~~either~~ the Ft. Pierce Utilities Authority (FPUA), the Port St. Lucie Utility Systems Department ~~or~~, St. Lucie County Utilities, or St. Lucie West Utility District. Generally, St. Lucie County Utilities provides sanitary sewer service to those properties located on North and South Hutchinson Island and within the Holiday Pines neighborhood on the mainland. The County also owns and operates a small wastewater treatment facility in the Lakewood Park subdivision. Those multi-family residential developments and Planned Unit Developments in the unincorporated County that are not serviced by St. Lucie County Utilities are serviced by their own on-site wastewater treatment plants (WWTP). Most of the single-family home sites in the unincorporated County are served with individual septic tanks. The importance of the municipal regional systems and on-site treatment facilities is noted.

BACKGROUND

A. TERMS AND CONCEPTS

Wastewater treatment systems occur in many different types. They may range from individual septic tanks and drain fields to large regional systems that include gravity collection sewers, low-pressure collection systems, lift stations, regional treatment plants, and effluent disposal facilities.

Regional Facilities: Regional facilities are large-scale sanitary sewage systems that generally provide service to densely populated areas. These facilities are comprised of three components that perform the basic functions of collection, treatment, and disposal of domestic sewage. Some regional facilities may also treat industrial waste on which pre-treatment may have already been performed.

The collection system is composed of a network of gravity sewer pipes or low-pressure conveyors that collect sewage from individual sources and convey it to a central location for treatment. **Figure 6-D-1**~~,~~ schematically represents a typical system.

A gravity system is normally made up of ~~a branching system of gently sloping pipes. Small pipes that come from an individual source are called services. Small pipes that combine several services are called~~ laterals~~. A larger pipe that may combine several laterals is called a main. Several~~, mains ~~may be combined~~and manholes used to ~~form a trunk~~collect water and convey it by gravity to a pumping station. The small pipes that come from a home or business are called laterals. These laterals take the wastewater from the home or business to the main or a manhole. The main~~. Large diameter sewers that normally flow to~~, through gravity, takes the wastewater from the laterals or the manholes to a lift station which pumps the wastewater through a force main to the wastewater treatment plant~~s are called interceptors~~.

In South Florida, gravity sewers would become very deep long before they reached regional treatment plants. Therefore, collection systems usually contain several lift stations within the system. These lift stations discharge into force mains, which may in turn discharge into larger force mains, other lift stations, other gravity sewer systems, or into a treatment plant. Lift stations, which receive flow from several sub-systems, are often called master lift stations. Large force mains, which receive flow

FIGURE 6-D-1 - TYPICAL SYSTEM SCHEMATIC

from several lift stations, are called manifolds.

The treatment plant is the component of the regional sanitary sewer facility that functions to remove solid and organic materials from the sewage. There are a large number of processes that can accomplish this, but they are generally grouped into one of the following three categories depending on the proportion of the material removed.

Primary Treatment: This refers to a removal of between 30% to percent and 35% percent of the organic materials and up to 50% percent of the solids from the sewage. This may also be referred to as physical treatment, because screens and settling tanks are the most common methods used to remove the solids.

Secondary Treatment: Secondary treatment processes remove between 80% to percent and 90% percent of total organic material and suspended solids from sewage. This level of treatment generally requires multiple steps involving at least one biological process and one or more processes for removal of suspended solids. The effluent from a secondary plant may also be chemically treated and filtered. This is sometimes referred to as enhanced secondary treatment.

Tertiary Treatment: Sewage may also contain large quantities of synthetic organic compounds or inorganic chemicals which may create pollution problems if not removed. Tertiary or advanced treatment provides processes to remove these pollutants. The most common tertiary processes remove compounds of phosphorus and nitrogen, nutrients that promote unwanted growth of biota in the environment, which may remove oxygen necessary for desirable environmental conditions. The effluent of advanced treatment processes often approaches potable water purity.

The treated water produced by the wastewater treatment system is known as effluent. Effluent disposal alternatives in St. Lucie County include discharge to a water body, irrigation reuse, percolation into the shallow groundwater, or injection into deep aquifers.

The solid by-product, or residual, of the treatment process is known as sludge. Prior to final disposal, sludge is usually subjected to one or more additional processes to remove pathogens, stabilize, and/or dewater. These processes allow for a safe disposal and facilitate transportation and deposition. Common disposal methods include burial in solid waste landfills, land application as a soil conditioner for agricultural purposes, and incineration.

Package Treatment Plants: Package treatment plants are essentially small treatment systems, which have a collection network, treatment plant, and disposal system. In St. Lucie County a few small package plants are actually very large septic tanks with sand filters and chlorination.

Package plants may be designed to provide any level of treatment, but in St. Lucie County plants providing, at a minimum, secondary treatment is used. Package plants are available in a range of capacities up to one-million gallons per day (MGD). They are generally used to serve isolated developments and are usually partially, or completely, preassemble by the manufacturer prior to shipment to the site of use.

Effluent disposal in package plants may take a variety of forms. Most common in St. Lucie County are drain fields, percolation ponds, and spray irrigation. Except for disposal by deep well injection, all effluent from package plants must be chlorinated for disinfection prior to disposal.

Small package plants usually do not require full-time attendance by an operator, and many small package plants in the County are run by operating services. Some small package plants only require an operator for two or three non-consecutive visits per week, totaling one to one and one-half hours per week. The average small

package plant has an operator on-site for only one-half hour per day, five days per week. As a result, preventive maintenance of the plant and/or collection system may not be ~~neglected~~fully achievable, potentially leading to premature deterioration of facilities. Some of the larger package plants have their own operators, usually for only a portion of the day.

Septic Tanks: Septic tank systems are usually used to serve single housing units, although relatively large scale systems have proven successful. The system consists of two components, the septic tank and the drainfield. The tank receives wastewater from the home and provides a period of settling, during which time a significant portion of the suspended solids settles out. The remaining liquids are discharged through underground perforated drainage pipes into the drainfield and percolate into the soil where microorganisms and filtration processes purify the liquids. Septic tanks generally require cleaning every two to three years to remove accumulated solids. These solids, called septage, are generally transported to regional sanitary septage facilities for treatment prior to disposal.

Septic tanks can be adversely affected by a number of conditions. These include high water table, poor drainage, lack of space, and miscellaneous effects from other conditions such as hydraulic overloads from washing machines.

B. REGULATORY FRAMEWORK

The Federal Water Pollution Control Act (PL -92-500) is the controlling national legislation relating to the provision of sanitary sewer service. The goal of this act is the restoration and/or maintenance of the chemical, physical and biological integrity of the nation's waters. The act established the national policy of implementing area-wide waste treatment and management programs to ensure adequate control of courses of pollutants. Under Section 201 of PL 92-500, grants are made available to local governments to construct facilities to treat "point sources" of pollution, which include effluent from sewage treatment processes. The U.S. Environmental Protection Agency is responsible for implementing the act.

The Florida Department of Environmental Protection (FDEP) is responsible for ensuring that the State carries out responsibilities assigned to it under PL 92-500. FDEP has adopted rules for the regulation of wastewater facilities in Chapter 64-600, Florida Administrative Code (F.A.C.). These rules apply to facilities that treat flows exceeding 5,000 gallons per day (gpd) for domestic establishments, 3,000 gallons per daygpd for food service establishments, and where the sewage contains industrial, toxic, or hazardous chemical wastes.

The Florida Department of Health (DOH) regulates septic tank and drainfield installation within the State. These requirements have been adopted by rule in Chapter 69E-6, F.A.C.

Individual septic tanks are permitted by the County Health Department and regulated in accordance with Chapter 69E-6, F.A.C. When a privately or municipally owned utility serves a community and charges on an individual basis, it is regulated by an overseeing Commission or Authority. Until recently, this body was the Public Service Commission. The Public Service Commission still regulates privately owned systems.

EXISTING CONDITIONS

A. EXISTING PLANNING DOCUMENTS

In 1992, St. Lucie County completed and adopted its Water and Wastewater Master Plan. In 1999, St. Lucie County underwent a revision to the 1992 Water and Wastewater Master Plan. In August 2000, the Board of County Commissioners adopted the St. Lucie County Utilities Water and Wastewater Master Plan. The Master Plan is in the process of being updated and a revised Master Plan is anticipated to be complete in 2008. The two major urban areas of the County, Ft. Pierce and Port St. Lucie, have regionalized wastewater collection treatment and disposal systems. The City of Ft. PierceFPUA completed a master plan for water and wastewater in

1987 and updated most recently in September 2006. **Figure 6-D-2**, shows the intended area of service for these municipal systems in St. Lucie County.

Figure 6-D-2 Service Areas

In late 1990s, St. Lucie County initiated condemnation proceedings against the assets of the General Development Utility (GDU) Corporation in St. Lucie County.

~~FIGURE 6-D-1 - TYPICAL SYSTEM SCHEMATIC~~

~~General Development Utilities~~ GDU was providing wastewater services for certain areas of the City of Port St. Lucie and the unincorporated areas around the River Park Subdivision area.

~~In~~ On October 1, 1994, the City of Port St. Lucie acquired the Utility's assets from St. Lucie County ~~transferred, to the City of Port St. Lucie, all the former GDU assets that it had acquired~~through an Agreement of Transfer. The City ~~of Port St. Lucie then initiated~~subsequently implemented a phased water and sewer expansion plan that ~~will, by the year 2005, provide to all properties within the City limits access to~~ now provides a centralized water and wastewater treatment ~~service. The first areas of the utility improvement are in the most northern part of the City.~~
system to nearly every property within the City's limits, as well as to certain properties located in the unincorporated County.

Prior to the ~~Citywide~~City's expansion efforts, ~~several smaller~~seventeen (17) sub-regional systems existed within the boundaries of Port St. Lucie's Utility Service Area. These sub-regional systems were not interconnected to each other and ~~serve~~ only served a small part of the ~~overall area of the city~~population within the City's Utility Service Area. As the City's primary water and sewer ~~system is~~ systems were extended ~~through the city,~~ throughout the community, twelve (12) of these isolated ~~sub-regional-regional areas are being interconnected and~~ treatment systems have been connected to the City's wastewater system and their treatment facilities ~~consolidated~~decommissioned.

In ~~addition~~additional to the system operated under the direction of the City of Port St. ~~Lucie~~ Lucie's Utility Systems Department, there ~~is one~~are two other sizable sub-regional ~~provider~~providers located within the City's corporate limits.

The water and wastewater system belonging to St. Lucie West Community Development~~/~~ Services District~~. This water/wastewater system~~ was constructed as part of the St. Lucie West Development of Regional Impact in the late ~~1980's~~1980's and is operated under the oversight of the Development ~~District~~ District's Board of Supervisors.

The water and wastewater system belonging to The Reserve Community Development Services District was constructed in the early 1980's to serve the Go Team Industrial Park that is located within the City and a portion of The Reserve, an adjacent residential community that is located in unincorporated St. Lucie County.

As of ~~June 2001~~May 2008, there were no plans to have ~~this system~~ either of these systems absorbed ~~into~~by the ~~Port St. Lucie Utility Department operations~~City; however, ~~there have been~~ operational interconnects exist between the ~~system~~ water systems to provide for back up services, should they be needed~~.~~

B. REGIONAL FACILITIES

Figure 6-D-2 outlines the general areas of service for the major regional facilities now operating in the County~~,~~ which are described below. These areas were franchised by the Public Service Commission ~~(PSC)~~.

Other sub-regional franchises also operate in the County, but their area is usually limited to a single development or a relatively small area. These sub-regional franchises are listed with the package plants.

Ft. Pierce Utilities Authority (FPUA): ~~The Ft. Pierce Utilities Authority maintains a 9.0 MGD (million gallon per day) wastewater treatment plant on the southwest~~

~~extremity of Causeway Island on the Indian River in Ft. Pierce. Currently,~~According to the September 2006 FPUA ~~has a Temporary Operating Permit from FDEP, which rates the wastewater treatment plant at a flow of 9.0 MGD (maximum month) to serve the City of Ft. Pierce through the year 2000~~Water and Wastewater Master Plan, FPUA operates the Island Water Reclamation Facility with ~~an estimated existing service area population of 40,867. At present this plant has approximately 4 MGD of excess capacity with the highest maximum~~a permitted capacity of 12 MGD (max month average daily flow) on the barrier island. This facility provides service to approximately 49,029 residents throughout their service area and treats an average of 5.62 MGD, less than half of the permitted capacity. FPUA produces reclaimed water which is almost exclusively provided to the Florida Municipal Power Agency for use in cooling towers at the Treasure Coast Energy Center. The Island Water Reclamation Facility also utilizes approximately 300,000 gpd of reclaimed water for wash down and irrigation purposes. ~~flow of 6.0MGD.~~

~~The long-range plans call for construction of a new wastewater treatment plant on the mainland. Planning for the mainland wastewater treatment plant has been put on hold as a result of excess capacity created by an extensive infiltration/inflow reduction program undertaken by FPUA.~~

~~The FPUA~~

FPUA is in the planning process for the construction of a mainland water reclamation facility located in the proximity of the County's landfill. Reclaimed water from the proposed facility may be allocated to the proposed Plasma Arc Gasification Facility planned at the landfill.

The FPUA, via a bulk user agreement with the County, has extended its wastewater service beyond the boundaries of the City of Ft. Pierce, and presently serves ~~many~~ areas in unincorporated St. Lucie County.

Port St. Lucie Utility Systems Department: ~~In 1997, the~~ The City of Port St. Lucie ~~acquired the regional water and wastewater utilities from St. Lucie County. This facility serves extensive portions of the city. Since acquiring the facility, Port St. Lucie Utility Systems Department (PSLUSD) has undertaken an aggressive utility expansion program that will extend water and wastewater service to most developed properties within the city by the year 2005. PSLUSD~~ owns and operates three ~~wastewater treatment plants with a combined~~ WWTPs within its city limits. The Northport WWTP was phased out in 2007 due to the recent completion of the Glades Water Reclamation Facility. The Glades Water Reclamation Facility came on line in 2007 has a permitted capacity of ~~4.05 mgd. Plans for expansion of these plants~~6 MGD. An expansion to 12 MGD is currently underway and there are ~~in progress to accommodate the increase in flows that will result from the expansion of the collection system. Future development west of the City of Port St. Lucie and south of Midway Road will eventually be served by PSLUSD or by private facilities until PSLUSD service becomes available~~provisions for ultimate build out of 24 MGD. This facility utilizes 100 percent of the reuse produced to serve existing developments, and relies on a deep injection well for alternate disposal during wet weather. The Southport Reuse WWTP operates at a three month average daily flow of approximately 2.8 MGD. This facility provides reclaimed water to the Ballentine Golf and Country club, and also relies on a deep injection well for alternate disposal. The City plans to decommission the Southport WWTP in 2012. The Westport WWTP has a permitted capacity of 4 MGD, with provisions for expansion to 12 MGD in approximately 2012. Flow from the Southport facility will be redirected to the expanded Westport WWTP when it is decommissioned.

~~Figure 6-D-2 Regional Facilities~~

North Hutchinson Island Utility District: In 1992, St. Lucie County acquired the North Hutchinson Services Corporation. ~~This~~The North Hutchinson Island facility and service area of this private utility provider became the foundation for the establishment of the North Hutchinson Island Utility District of St. Lucie County. The North Hutchinson Island Utility District was consolidated into the St. Lucie County Water and Sewer District in August 2005. The St. Lucie County Utilities Department provides wastewater service to approximately 7~~0 percent of the developed units~~,490 residents on North Hutchinson Island. St. Lucie County Utilities owns and operates the North Hutchinson Island wastewater collection system and a 0.5 ~~mgd wastewater treatment plant that is expandable to accommodate buildout wastewater flows on the island. This~~ MGD WWTP. The County is currently evaluating the potential for a future expansion of the facility to increase the capacity to 0.8 MGD. This plant produces reclaimed water that is made available to nearly all of the larger developed parcels on the island.

The upgraded ~~wastewater treatment plant~~WWTP was placed into service in January 1996. This facility is permitted through the FDEP for 0.50 ~~mgd~~MGD of treatment capacity. ~~The 1999 average daily flow at this facility is 0.201 mgd.~~ The current FDEP wastewater facility permit expires on October 21, ~~2002~~2008. This upgraded ~~wastewater treatment plant~~WWTP replaced two smaller sub-regional package treatment plants, ~~-~~one at the Bryn Mawr utility site and one at the Sands utility site, in addition to a number of individual ~~wastewater treatment plants~~WWTPs that served individual residential developments.

~~As of June 2001, all of the individual package treatment plants located on North Hutchinson Island had been eliminated or were scheduled for elimination within the next 12 months as required by the Indian River Lagoon Act. St. Lucie County has been found to be consistent with the Indian River Lagoon Act.~~

South Hutchinson Island: In 1996/1997, the South Hutchinson Island wastewater collection and treatment system was constructed by St. Lucie County to provide central sewer service for the portion of South Hutchinson Island located outside of the City of Ft. Pierce. ~~-~~Just as with the North Hutchinson Island service area, this system was intended to eliminate all of the ~~-~~numerous individual wastewater package treatment plants that had been constructed in the absence of a centralized treatment network. Many of these existing ~~wastewater treatment plants~~WWTPs and all existing lift stations were upgraded or replaced to meet St. Lucie County Utility standards and a force main system was constructed to connect these lift stations to the new ~~wastewater treatment plant~~WWTP. The ~~wastewater treatment plant~~WWTP was designed to accommodate ~~build~~build out flows for South Hutchinson Island (based on a build out population of 15,150 residents. The primary method of effluent disposal is reclaimed water irrigation, with backup disposal provided by discharge to the FPL Nuclear Power Plant ocean discharge canal.

This ~~wastewater treatment plant~~WWTP is permitted for 1.6 ~~mgd~~MGD and utilizes a conventional plug flow, extended aeration, activated sludge process followed by filtration and high-level disinfection to produce reclaimed water for irrigation. The plant is located on a 19.2 acre, county-owned site approximately two miles south of the FPL Nuclear Power Plant on the west side of A-1-A.

~~North~~St. Lucie County ~~Utility~~Water and Sewer District (f~~.k.a.~~ ormerly known as Holiday Pines Service Corporation): The service area of the ~~North~~St. Lucie County ~~Utility~~Water and Sewer District water and wastewater utilities lies within the St. Lucie County Utilities (SLCU) mainland north county service area. The ~~North~~St. Lucie County ~~Utility~~Water and Sewer District service area includes the Holiday Pines subdivision and some additional commercial and residential areas fronting Kings Highway and Indrio Road.

~~The~~ In August 2005, the North Hutchinson Island Utility District, the Airport Utility District, the North ~~County~~County (Holiday Pines) Utility District, the Mid County District, the Indian River Estates MSBU District and the H.E.W. Utility District ~~wastewater treatment plant~~were consolidated into a single utility district now known as the St. Lucie County Water and Sewer District. As such, the above mentioned North Hutchinson Island Utility District service area is now included in this District.

The St. Lucie County Water and Sewer District (Holiday Pines) WWTP is a field-erected, precast package plant with a design capacity of 0.~~210 mgd~~3 MGD. The ~~wastewater treatment plant~~WWTP is located on a 9.8-acre utility site near the Indian Pines Golf Course. ~~The plant=s permitted capacity is limited to 0.176 mgd because of clarifier limitations and the owners desire to maintain surge capacity in the aeration tanks. This plant utilizes the extended aeration process and received an average daily flow of 0.126 mgd in 1997.~~
Seven percolation ponds are utilized for effluent disposal. ~~Brine~~Concentrate from the ~~North~~St. Lucie County ~~Utility~~Water and Sewer District water treatment plant is also discharged into these ponds. Sludge from the facility is lime stabilized and hauled to land application sites.

~~Expansion~~There are no plans to expand the Holiday Pines WWTP. Upon completion of ~~this~~the North County ~~Utility District~~Regional Water Reclamation Facility (WRF), the Holiday Pines WWTP will be ~~primarily in response to public and private demand for services.~~decommissioned and replaced with a master lift station to redirect flow to the new facility.

C. PRIVATELY OWNED UTILITIES WITH CAPACITIES GREATER THAN 0.1 MGD

Port St. Lucie: There are ~~five~~three privately owned ~~wastewater treatment plants~~WWTPs in Port St. Lucie with capacities greater than 0.1 ~~mgd~~MGD: Reserve Utility Corporation (0.122 ~~mgd~~MGD), St. Lucie West Utilities (~~1~~2.0 ~~mgd),~~ MGD) and Savannah Club (0.15 ~~mgd),~~MGD). Spanish Lakes East (0.294 ~~mgd~~MGD) and Spanish Lakes Riverfront (0.1 ~~mgd)~~MGD) WWTPs were decommissioned in 2003. Since these private utilities lie within the ~~PSLU~~ Port St. Lucie Utilities service area, any acquisition, interconnection or expansion associated with these facilities would not involve SLCU.

Panther Woods: ~~The~~ Panther Woods ~~wastewater treatment plant is a field-erected concrete extended aeration plant that is~~ owns and operates an on-site WWTP with a permitted ~~for 0.180 mgd. The plant has an average daily flow of 0.020 mgd, resulting in sufficient available~~ capacity~~. Treated effluent flows into two irrigation holding ponds with a combined capacity~~ of 0.18 MGD, but is limited to 0.105 MGD due to the size of ~~1.0 mg. Wastewater effluent is mixed with irrigation water pumped from shallow wells and is irrigated onto approximately 120 acres of golf course within the development. An upset holding pond with 0.054 mg capacity is provided for storage of effluent that does not meet reuse standards. This wastewater treatment plant is currently undergoing an expansion to~~ the ~~facility that includes the construction of two 8,500-gallon~~existing chlorine contact basins~~ with effluent flow meter; automatic effluent diversion system; continuous on-line monitoring facilities of turbidity, pH and chlorine residual; new 150-pound chlorination facility; polymer feed facilities;~~. The facility serves a current population of approximately 1,040 residents. Treated effluent is supplemented with well water and ~~new sand media~~used to irrigate the 120-acre Panther Woods Golf Course.

Spanish Lakes Country Club: Spanish Lakes Country Club is an adult mobile home community with approximately 1,300 mobile home lots. The ~~wastewater treatment plant~~community is built out and is home to 3,040 residents. The WWTP serving the Spanish Lakes Country Club is a field-erected, precast concrete package plant with a permitted capacity of 0.160 ~~mgd~~MGD. Average daily flow is 0.121 ~~mgd~~MGD. This plant utilizes the extended aeration process to produce a secondary effluent. Effluent disposal facilities include a one-cell percolation pond and a three-cell drainfield. Sludge from this facility is lime stabilized on-site and hauled to land application sites.

The ~~wastewater treatment plant~~WWTP is adequately sized for the development it serves, but is has no excess capacity. ~~The maximum month flow for 1998 was 0.146 mdg, 91 percent of the permitted capacity.~~ There is minimal area available for expansion on the ~~wastewater treatment plant~~WWTP site.

Spanish Lakes Fairways: Spanish Lakes Fairways is a 1,600 unit (3,200 residents) adult community located in the northwest portion o f the St. Lucie County ~~Utilities mainland north-county~~Water and Sewer District service area. The Spanish Lakes Fairways ~~wastewater treatment plant~~WWTP is a field-erected, precast concrete

package plant with a permitted capacity of 0.250 ~~mgd~~MGD. Average daily plant flow is 0.116 ~~mgd~~MGD. The plant utilizes the extended aeration process to produce reclaimed water that meets FDEP standards for public access irrigation. The plant consists of two separate treatment trains which include: two 0.127 mg aeration basins with mechanical surface aerators, two rectangular clarifiers, two sand filters, two 0.025 mg digesters and a baffled chlorine contact tank. The primary means of effluent disposal is irrigation on the development~~=~~'s private golf course. A lined pond is provided adjacent to the ~~wastewater treatment plant~~WWTP for reclaimed water storage. Backup effluent disposal capacity is provided by three percolation ponds at the ~~wastewater treatment plant~~WWTP site. Sludge from the facility is lime stabilized on-site and hauled to land application sites.

The ~~wastewater treatment plant~~WWTP is designed to accommodate the community to ~~build~~build out. The maximum flow ~~was~~is 0.142 ~~mgd,~~MGD, or approximately 56~~%~~ percent of the plant~~=~~'s permitted capacity. The excess capacity will be utilized to serve additional phases of the development. There is limited area available for expansion of the wastewater treatment plan.

D. PACKAGE TREATMENT PLANTS

~~Package~~There are numerous package treatment ~~plants~~plants within the County that make up a ~~large~~significant portion of the wastewater treatment capacity in the County. **Figure 6-D-3** shows ~~wastewater treatment plants~~WWTPs throughout the County, including package treatment plants, and was last updated in 1999. **Table 6-D-1**~~,~~ lists the plants by name and groups these plants by land use, and was also last updated in 1999. The table shows the location of the plants, the design capacity, operating capacity, percentage of capacity allocated for the unincorporated County, current number of people served, projected 2000 and 2010 population served, and the current level of service. Many of these package plants are concentrated in the White City and Indrio Road areas. ~~There are presently 31 package wastewater treatment plants in the County and urban areas.~~ Some of these plants have experienced difficulties in effluent disposal, where disposal systems have failed. The majority of the package plants within the County are under consent order and the Florida Department of Environmental Protection (FDEP) has urged each facility (through their permit renewal process) to seek connection to a central sewer system where available and feasible. As such, these facilities are slowly being connected to the public sewer systems available within the County. Both the Figure and Table require will require extensive efforts to update with current information. The County intends to update these items and the related information at a later date in the near future. Updates are, therefore, not included in the May 2008 revision to this sub-element.

E. SEPTIC TANKS

Septic tank systems are used principally for the treatment of wastewater from individual residences. In rural areas they are also used for establishments such as schools, motels, rural hotels, trailer parks, housing projects, camps and others. It is impossible to determine the current number of septic tanks in the County since, prior to 1984, the rules and regulations were different and some septic tanks were installed without permits. According to the Environmental Health Section of the County's Public Health Unit, from ~~1986~~1985 to ~~July 1999, 19,595~~January 2008, 27,193 septic tanks were permitted (approximately) 10~~%~~ percent of permitted septic tanks are never installed). Approximately 50 septic tanks are permitted each month. **Figure 6-D-4** indicates the areas within St. Lucie County with the greatest concentrations of septic tank systems. With the expansion and availability of public utility in the Port St Lucie area, the concentration of septic system use is being decreased by attrition as systems reach the end of their useful life and connection to sewer is mandated by Statute and city policy.

Septic tank systems were ~~developed in France with the first appearing in the U.S. in the 1890's~~invented by Colin Scott-Moncrief of the Indian Civil Service in 1892. These systems treat wastewater by allowing the solids to settle out of the waste and permitting a clarified effluent to be discharged. Although single chamber tanks are

often used, two or more chambers in series are ~~preferable~~required by Florida Administrative Code. In a dual-chamber septic tank, the first compartment provides for sedimentation, sludge digestion, and sludge storage. The second compartment provides additional sedimentation and sludge storage capacity and thus serves to

Figure 6-D-3

TABLE 6-D-1
(Not Updated in May 2008 Revision)
Wastewater Treatment Plants, St. Lucie County

Map Key	Wastewater Plant	Location	Design Capacity (1 MGD)	Operating Capacity - average (1 MGD)	% Capacity for UNC	Current # of People Served	Projected 2000 Population Served	Projected 2005 Population Served	Current LOS GPCD
	RESIDENTIAL								
5	Benton Wood Mobile Home Park (MHP)	County	.008	.003	100	134	134	134	22[d]
6	Beverly MHP	County	.0033	.002	100	48	48	48	42[d]
8	Country Cove MHP	County	.030	.025	100	296	296	296	84[d]
11	FPUA	Ft. Pierce	9.000	5.103	x[a]	x[a]	x[a]	x[a]	130[a]
16	The Grove of Ft. Pierce	County	.160	.007	100	288	1120	1120	24[d]
17	Harbour Ridge	County	.120	.013	100	900	1520	1520	14[d]
20	Indian River Landing	County	.025	.005	100	44	136	136	114
24	La Buona Vita MHP	County	.040	.008	100	334	340	340	24[d]
25	Lake Manor MHP	County	.010	.008	100	120	120	120	67[d]
26	Lakewood Park Subdivision		.020	.009	100	150	210	210	60[d]
27	Meadowood Country Club	County	.180	.005	100	30	100	500	167
35	Orange Co. of Florida	County	.010	.003	100	42	42	42	71[d]
36	Orchid Acres Trailer Park	County	.005	.004	100	150	150	150	27[d]
38	The Reserve Utility Corp.		.175	.020	100	220	400	1000	91[d]
39	Ridgecrest MHP	County	.020	.011	100	364	364	364	30[d]
40	Rio del Mar MHP	County	.015	.008	100	128	128	128	63[d]
41	Riviera Apartments	County	.005	.001	100	42	42	42	24[d]
43	Savanna Club PUD	County	.065	.017	100	1874	3384	4700	9[d]
44	St. Lucie West		1.000	.026	0	185	1832	26335	141
46	Spanish Lakes Country Club Village	County	.160	.111	100	1200	1200	1200	93[d]
47	Spanish Lakes Fairways	County	.300	.058	100	300	1000	1600	193
48	Spanish Lakes One MHP	County	.294	.159	100	1000	1000	1000	159

TABLE 6-D-1
(Not Updated in May 2008 Revision)
Wastewater Treatment Plants, St. Lucie County

Map Key	Wastewater Plant	Location	Design Capacity (1 MGD)	Operating Capacity - average (1 MGD)	% Capacity for UNC	Current # of People Served	Projected 2000 Population Served	Projected 2005 Population Served	Current LOS GPCD
49	Spanish Lakes Riverfront	County	.100	.058	100	800	1000	1284	73[d]
50	Tanglewood MHP	County	.020	.011	100	316	316	316	35[d]
52	Tropical Isle MHP PUD	County	.050	.005	100	334	668	668	15[d]
53	Vista St. Lucie	County	.125	.029	100	924	924	924	31[d]
54	Whispering Creek Village	County	.025	.016	100	300	300	300	53[d]
	COMMERCIAL								
	INDUSTRIAL								
71	Harbor Branch Foundation	County	.015	.003	100	159	***	***	19
	PUBLIC								
76	SLC Juvenile Detention Center	County	.015	.005	100	106	***	***	47
77	Savannas Recreation Area	Ft. Pierce	.0075	.003	0	unknown	***	***	x[e]

a FPUA data is based on connections. A connection could be hooked up to a single family residence or to a condominium with numerous units. It is impossible to determine the exact numbers with the information available. Also, some residential units are considered commercial and are included in the AGeneral@ category. From September, 1990, the connection count is: residential inside city 9146; residential outside city 736; general inside city 1724; and, outside city 89. The Utilities Authority estimates the total number of residents served currently (December, 1989) at 30,000. The projections for 1995 and 2000, taken from the 1988 FPUA Master Plan, are 39,125 and 40,867 respectively. The level of service (LOS) of 130 gpod is taken from the FPUA 1988 Master Plan.

b GDU currently serves a total population of 22,922 with 2,380 customers residing in the unincorporated County. The total percent capacity allocated by the GDU facilities for the unincorporated County is 10 percent. From the information available, the number of residents served per plant is not known. At this time, the projected service population for 1990 and 1995 and the current capacity surplus/deficiency is unavailable.

c Current LOS was determined by dividing the average current operating capacity by the current number of people served.

d Strongly influenced by seasonal population 60 percent of the year, off-season population is approximately 65 percent of current number of people served.

e Current LOS not determined due to lack of design capacity data and/or current # of people served.

*** The 2005 and 2010 projected population served is unavailable due to lack of data.

Notes:
1. Not in file refers to information the local FDEP office would have normally have in their files.
2. Due to lack of sufficient data, it is not possible to determine the current capacity surplus or deficiency.
3. UNC refers to Unincorporated St. Lucie County.

Insert Figure 6-D-4

protect against the discharge of sludge and other material that might escape the first chamber.

Septic tanks designed for residential use generally have a 24-hour detention period. For larger installations serving multiple families or institutions, a shorter detention period may be permissible. In either case, it is essential that adequate storage capacity be provided so that the deposited sludge remains in the tank for a sufficient length of time to undergo decomposition or digestion before being withdrawn. In general, sludge should be removed every 2 to 3 years. Tanks are normally pumped-out by a septage hauling company when contacted by the septic tank owner. The overall life of a septic tank system is 10 years.

St. Lucie County is presently served by several privately owned sewage/septage hauling companies. A few of the companies are located in Martin County and haul septage back into Martin County where it is disposed of at their septage treatment facility. The remaining haulers are located in St. Lucie County and dispose of their septage in St. Lucie County.

Effluent from septic tanks is normally discharged to a drainfield where it is allowed to percolate into the ground. Soil permeability and depth to the wet season water table are limiting factors on septic tank drainfield performance and may require construction of elevated drainage field grounds to -ensure adequate performance. **Figure 6-D-5** indicates the general soil types present in St. Lucie County as identified in the Soil Survey of St. Lucie County.\ (U.S. Department of Agriculture, 1980)). As this figure indicates, virtually all soils within the County (98.4 percent), excluding a small area located on the ridgeline east of Atlantic Coastal Ridge west of the Intracoastal Waterway, have moderate or severe limitations for septic tank drainage fields. Due to the unsuitability of the soil, the St. Lucie County Health Department, which permits all septic tank system installations in the County, requires 95 percent excavation of the drainfield area and backfilling with acceptable material.

Of the areas with high concentrations of septic tank systems shown on Figure 6-D-4, (not updated as part of the May 2008 revision) all, excluding The Reserve development located west of I-95, have been experiencing some drainfield failures. These drainfield failures are caused by one or any combination of the following:

1. Hydraulic Overloading: This involves the application of septic tank effluent at rates greater than the rate at which the effluent can percolate through the soil in the drainfield.

2. Suspended Solids Clogging: This clogging occurs when the septic tank is not operating properly and a portion of the solids which normally settle out in the tank flow to the drainfield in the effluent.

3. High Groundwater Table: In some areas of the County, poor drainage allows the groundwater table to reach levels which intersect with the percolation area of septic tank systems thus lowering the drainfield capacity.

4. Proximity of Drain fields: In several areas noted, drain fields are in some cases located within 10 feet of each other. This circumstance causes the groundwater in the area of these drain fields to be higher than if a greater separation of the drain fields existed. Ultimately this higher groundwater level reduces the drain fields' capacity to dispose of effluent.

The Public Health Unit Department has no verified cases of well contamination by septic tanks (July, 1999in St. Lucie County (January, 2008). This stems from the fact that, in many of the developments located in these areas, the home septic tank system and potable water well are all constructed on a 1/4 acre lot. As these developments approach 100 percent build-out, the possibility of non-disinfected septic tank effluent reaching a potable water well increases. It is a well-documented fact

that domestic wastewater carries bacteria and viruses capable of causing serious illness and, therefore, well contamination poses severe health implications. In

Figure 6-D-5 Soils Map

areas that may experience failures, the distinct possibility of groundwater contamination exists.

It is therefore reasonable to project that areas of high septic tank concentration will experience an increasing number of septic tank system failures~~ as growth occurs~~. This is especially the case in older areas where the systems may be reaching the end of their functioning life.. Additionally, those areas with private well water supplies could see cases of well contamination by septic tanks.

NEEDS ASSESSMENT

The unincorporated County presently has wastewater service provided by three major municipal utilities (~~Ft. Pierce Utilities Authority~~FPUA, Port St. Lucie ~~Utility Systems Department~~ Utilities and ~~St. Lucie County Utilities~~SLCU), several medium sized utilities (St. Lucie West and private utilities), small package plants, and septic tanks. This section examines the needs of those areas in the County which are not included in the ~~three~~ major or medium sized utilities or in the service areas now identified by those ~~three~~ waste water utilities.

The area of growth in the unincorporated County directly corresponds to the urban service areas for water and sewer service. The area west of this growth area of the County is planned as agricultural.

The most intense development in these areas is expected to occur along the I-95 corridor with concentrations at the Gatlin Boulevard I-95 Intersection, mid-County, and the north County area. Other areas of the unincorporated County exhibiting needs include the Savannah Club area extending north past Tilton Road to Easy Street.

~~Of the private wastewater treatment plants in the unincorporated County, Spanish Lakes One Mobile Home Park in the Savannas area, and Spanish Lakes Fairways in the area of Indrio and I-95 have a capacity of 200,000 gallons or above (294,000, and 300,000 gallons respectively).~~ With a few exceptions, all of the package plants were designed to serve a small community, condominium, or commercial area. These plants are designed with a specific capacity in mind, determined by the proposed size of the development and the standards set by the FDEP for flow per unit. Therefore, these developments neither have appreciable excess capacity, nor do they exhibit appreciable needs beyond their initial design capacity. FDEP has urged each of the remaining facilities to seek connection to a central sewer system where available and feasible.

Because ~~the~~these smaller plants require daily attention, tend to wear out with time, and occupy increasingly valuable land, many are candidates for connection to a regional system within the next 20 years. With areas of proliferation of the small plants a County supported regional system would be a viable improvement in the future.

SERVICE AREA POPULATION PROJECTIONS

~~According to the~~ The St. Lucie County ~~Utilities Water and Wastewater Master Plan, there are three primary service areas within St. Lucie County~~utilities service area is separated into several sub-service area: North Hutchinson Island Service Area from the Ft. Pierce Inlet north to the Indian River County Line on the barrier island; South Hutchinson Island Service Area from the Martin County Line north to the Ft. Pierce City Limits ~~and~~on the ~~North County Service Area~~barrier island; the St. Lucie County Water and Sewer District from the Indian River Lagoon to the east, the Indian River County Line to the north, Interstate 95 to the west and St. Lucie Boulevard to the south~~.~~; and the unincorporated County service areas (north, central and south) as illustrated on Figure 6-A-1. The service areas for FPUA and the City of Port St. Lucie are also depicted on Figure 6-D-1.

~~Figure 6-D-3 Package Treatment Plant Locations~~

~~Figure 6-D-4 Septic Tank Locations~~

~~Figure 6-D-5 Soils Map~~

The population ~~projection~~projections for each of the service areas indicates that as St. Lucie County grows there will be a need for additional service capacity within the existing wastewater service facilities. **Table 6-D-~~3 indicates~~2** provides the projected population within the Service Areas for the ~~year 2000, 2005 and the buildout of the service area~~years 2007, 2012, 2017, 2022 and 2027. The information provided in Tables 6-D-2and **Table 6-D-3** was obtained from the March 2008 draft of the revised Water and Wastewater Master Plan. The Master Plan is still subject to change as it is finalized. Significant changes to the information provided in the tables will be revised as needed once the Master Plan is complete. As this table indicates a significant portion of the County~~=~~'s overall population resides in an area located outside the proposed service area of the St. Lucie County Utilities. Those areas lying outside of the County~~=~~'s service area~~,~~ will be provided ~~potable water~~wastewater service via the following methods: one of the other two public utility providers - ~~Ft. Pierce Utility Authority~~FPUA or City of Port St. Lucie ~~Utility Department~~Utilities; an ~~internal potable water~~on-site package ~~system~~wastewater treatment plant or via an on-site ~~well~~septic system.

~~TABLE~~Table 6-D-~~3~~
2
St. Lucie County Utilities Service Area - Connected Population Projections, ~~2000 - Buildout~~2007-2027

~~Service Area~~	~~2000~~	~~2005~~	~~2020~~	~~Buildout~~
~~North County Service Area~~				
~~Permanent Residents~~	~~15,095~~	~~16,725~~	~~21,686~~	~~See Note 2~~
~~Seasonal Residents~~	~~0~~	~~0~~	~~150~~	~~See Note 1~~
~~Employment~~	~~3,182~~	~~3,607~~	~~5,150~~	~~See Note 3~~
~~School Enrollment~~	~~500~~	~~500~~	~~500~~	~~500~~
~~North County Total~~	~~18,777~~	~~20,832~~	~~27,486~~	~~269,203~~
~~North Hutchinson Island Service Area~~				
~~Permanent Residents~~	~~2,189~~	~~2,193~~	~~3,862~~	~~7,000~~
~~Seasonal Residents~~	~~1,653~~	~~2,320~~	~~4,320~~	~~See Note 1~~
~~Employment~~	~~189~~	~~201~~	~~235~~	~~460~~
~~School Enrollment~~	~~0~~	~~0~~	~~0~~	~~0~~
~~North Hutchinson Island Total~~	~~4,031~~	~~4,714~~	~~6,753~~	~~8,860~~
~~South Hutchinson Island Service Area~~				
~~Permanent Residents~~	~~4,309~~	~~4,198~~	~~3,862~~	~~7,000~~

~~TABLE~~Table 6-D-~~3~~ 2

St. Lucie County Utilities Service Area - Connected Population Projections, ~~2000 - Buildout~~2007-2027

~~Service Area~~	~~2000~~	~~2005~~	~~2020~~	~~Buildout~~
~~Seasonal Residents~~	~~5,434~~	~~6,634~~	~~10,234~~	~~See Note 1~~
~~Employment~~	~~756~~	~~765~~	~~790~~	~~994~~
~~School Enrollment~~	~~0~~	~~0~~	~~0~~	~~0~~
~~South Hutchinson Island Total~~	~~10,499~~	~~11,597~~	~~14,886~~	~~14,994~~

~~1. Total Residential ERC-s - Permanent residents plus seasonal residents~~
~~2. Residential water demand and wastewater flow for this service area is based on future land use and not on project buildout ERC=s~~
~~3. Commercial/industrial water demand and wastewater flow for this service area is based on available commercial/industrial area.~~

~~Within St. Lucie County the average daily average daily wastewater demands were based on the following per capita demands: permanent & seasonal residents - 85 gpcd, employees - 102 gpcd, and school students - 17 gpcd. The estimated wastewater flow for the year 2000, 2005, 2020 and buildout are indicated in Table 6-D-4. As this table indicates, wastewater flow will increase as the population increases within the service delivery area.~~

~~TABLE 6-D-4~~
~~Estimated Total Wastewater Flows (MGD)~~

~~Service Area~~	~~2000~~	~~2005~~	~~2020~~	~~Buildout~~
~~North Hutchinson Island~~	~~0.35~~	~~0.40~~	~~0.58~~	~~0.75~~
~~South Hutchinson Island~~	~~0.91~~	~~1.00~~	~~1.28~~	~~1.29~~
~~North County Service Area~~	~~1.62~~	~~1.80~~	~~2.39~~	~~24.7~~

~~1. All water demands are in million gallons per day. Values for NHI and SHI are representative of peak season flows. For North County, values are representative of annual average daily flow.~~
~~2. Wastewater flows indicated are for the wastewater service areas located within St. Lucie County Utilities.~~
~~3. Per capita water demands were assumed to be: 85 gpcd for permanent and seasonal residents, 102 gpcd for each employee and 17 gpcd for students.~~
~~4. Wastewater flows for commercial acreage in the North County area were assumed to be 1,700 gpd per acre. Buildout wastewater flows for the North County area assume that development in the extensive airport and Indrio Road Mixed Use Districts achieve 70% of the maximum allowable density. Using this conservative assumption, these MXD areas account fo 66% of the total buildout flow.~~

~~Source: St. Lucie County Water and Wastewater Master Plan, August 2000.~~

~~The St. Lucie County Utilities Water and Wastewater Master Plan also identifies the total projected flow demands for wastewater connections through the buildout date. As Table 6-D-5 indicates the demand for wastewater connects will rise and at buildout will account for the total wastewater flow demand as previously indicated in Table~~

~~6-D-4.~~

~~TABLE 6-D-5~~ ~~Connected Wastewater Flow (MGD)~~				
~~Service Area~~	~~2000[1]~~	~~2005~~	~~2020~~	~~Buildout~~
~~North County Service Area~~				
~~Lakewood Park WWTP[2]~~	~~0.017~~	~~.0204~~	~~N/A~~	~~N/A~~
~~Fairwinds Golf and Country Club~~	~~0.0014~~	~~.0017~~	~~N/A~~	~~N/A~~
~~Holiday Pines WWTP[3]~~	~~0.126~~	~~0.194~~	~~N/A~~	~~N/A~~
~~Proposed North County Regional WWTP[4]~~	~~N/A~~	~~N/A~~	~~2.02~~	~~24.7[5]~~
~~North Hutchinson Island Service Area~~	~~0.26~~	~~0.36~~	~~0.58~~	~~0.75~~
~~South Hutchinson Island Service Area[6]~~	~~0.645~~	~~0.99~~	~~1.28~~	~~1.29~~

~~1. Year 2000 connected wastewater flows werre determined from the latest years MOR=s.~~
~~2. It is planned that Lakewood Park and Fairwinds WWTP=s will be decommissioned after 2005 and their flow will be redirected to either the Holiday Pines WWTP or the proposed North County Regional WWTP.~~
~~3. In 2010, the Holiday Pines WWTP will be decommissioned and its flow will be redirected to the proposed North County Regional WWTP along Taylor Dairy Road.~~
~~4. The North County Regional WWTP is proposed to be constructed in 2010.~~
~~5. Buildout wastewater flow is estimated as 85% of buildout water demand (29.1 mgd) but is not expected to occur until long after the 20 year planning horizon.~~
~~6. Connected wastewater flow projections for the SHI WWTP assume 100% of EDU=s within the service area are connected by 2005.~~

~~Source: St. Lucie County Utilities Water and Wastewater Master Plan, August 2000~~

~~TABLE 6-D-1~~ ~~Wastewater Treatment Plants, St. Lucie County~~										
~~Map Key~~	~~Wastewater Plant~~	~~Location~~	~~Design Capacity (1 MGD)~~	~~Operating Capacity (1 MGD)~~	~~% Capacity for UNC~~	~~Current # of People Served~~	~~Projected 2000 Population Served~~	~~Projected 2005 Population Served~~	~~Current LOS GPCD~~
	~~RESIDENTIAL~~								
~~5~~	~~Benton Wood MHP~~	~~County~~	~~.008~~	~~.003 ave.~~	~~100~~	~~134~~	~~134~~	~~134~~	~~22[d]~~
~~6~~	~~Beverly MHP~~	~~County~~	~~.0033~~	~~.002 ave.~~	~~100~~	~~48~~	~~48~~	~~48~~	~~42[d]~~
~~8~~	~~Country Cove MHP~~	~~County~~	~~.030~~	~~.025 ave.~~	~~100~~	~~296~~	~~296~~	~~296~~	~~84[d]~~

~~TABLE 6-D-1~~
~~Wastewater Treatment Plants, St. Lucie County~~

~~Map Key~~	~~Wastewater Plant~~	~~Location~~	~~Design Capacity (1 MGD)~~	~~Operating Capacity (1 MGD)~~	~~% Capacity for UNC~~	~~Current # of People Served~~	~~Projected 2000 Population Served~~	~~Projected 2005 Population Served~~	~~Current LOS GPCD~~
~~11~~	~~FPUA~~	~~Ft. Pierce~~	~~9.000~~	~~5.103 ave.~~	~~x[a]~~	~~x[a]~~	~~x[a]~~	~~x[a]~~	~~130[a]~~
~~16~~	~~The Grove of Ft. Pierce~~	~~County~~	~~.160~~	~~.007 ave.~~	~~100~~	~~288~~	~~1120~~	~~1120~~	~~24[d]~~
~~17~~	~~Harbour Ridge~~	~~County~~	~~.120~~	~~.013 ave.~~	~~100~~	~~900~~	~~1520~~	~~1520~~	~~14[d]~~
~~20~~	~~Indian River Landing~~	~~County~~	~~.025~~	~~.005 ave.~~	~~100~~	~~44~~	~~136~~	~~136~~	~~114~~
~~24~~	~~La Buona Vita MHP~~	~~County~~	~~.040~~	~~.008 ave.~~	~~100~~	~~334~~	~~340~~	~~340~~	~~24[d]~~
~~25~~	~~Lake Manor MHP~~	~~County~~	~~.010~~	~~.008 ave.~~	~~100~~	~~120~~	~~120~~	~~120~~	~~67[d]~~
~~26~~	~~Lakewood Park Subdivision~~		~~.020~~	~~.009 ave.~~	~~100~~	~~150~~	~~210~~	~~210~~	~~60[d]~~
~~27~~	~~Meadowood Country Club~~	~~County~~	~~.180~~	~~.005 ave.~~	~~100~~	~~30~~	~~100~~	~~500~~	~~167~~
~~35~~	~~Orange Co. of Florida~~	~~County~~	~~.010~~	~~.003 ave.~~	~~100~~	~~42~~	~~42~~	~~42~~	~~71[d]~~
~~36~~	~~Orchid Acres Trailer Park~~	~~County~~	~~.005~~	~~.004 ave.~~	~~100~~	~~150~~	~~150~~	~~150~~	~~27[d]~~
~~38~~	~~The Reserve Utility Corp.~~		~~.175~~	~~.020 ave.~~	~~100~~	~~220~~	~~400~~	~~1000~~	~~91[d]~~
~~39~~	~~Ridgecrest MHP~~	~~County~~	~~.020~~	~~.011 ave.~~	~~100~~	~~364~~	~~364~~	~~364~~	~~30[d]~~
~~40~~	~~Rio del Mar MHP~~	~~County~~	~~.015~~	~~.008 ave.~~	~~100~~	~~128~~	~~128~~	~~128~~	~~63[d]~~
~~41~~	~~Riviera Apartments~~	~~County~~	~~.005~~	~~.001 ave.~~	~~100~~	~~42~~	~~42~~	~~42~~	~~24[d]~~
~~43~~	~~Savanna Club PUD~~	~~County~~	~~.065~~	~~.017 ave.~~	~~100~~	~~1874~~	~~3384~~	~~4700~~	~~9[d]~~
~~44~~	~~St. Lucie West~~		~~1.000~~	~~.026 ave.~~	~~0~~	~~185~~	~~1832~~	~~26335~~	~~141~~
~~46~~	~~Spanish Lakes Country Club Village~~	~~County~~	~~.160~~	~~.111 ave.~~	~~100~~	~~1200~~	~~1200~~	~~1200~~	~~93[d]~~
~~47~~	~~Spanish Lakes Fairways~~	~~County~~	~~.300~~	~~.058 ave.~~	~~100~~	~~300~~	~~1000~~	~~1600~~	~~193~~
~~48~~	~~Spanish Lakes One MHP~~	~~County~~	~~.294~~	~~.159 ave.~~	~~100~~	~~1000~~	~~1000~~	~~1000~~	~~159~~
~~49~~	~~Spanish Lakes Riverfront~~	~~County~~	~~.100~~	~~.058 ave.~~	~~100~~	~~800~~	~~1000~~	~~1284~~	~~73[d]~~
~~50~~	~~Tanglewood MHP~~	~~County~~	~~.020~~	~~.011 ave.~~	~~100~~	~~316~~	~~316~~	~~316~~	~~35[d]~~
~~52~~	~~Tropical Isle MHP PUD~~	~~County~~	~~.050~~	~~.005 ave.~~	~~100~~	~~334~~	~~668~~	~~668~~	~~15[d]~~
~~53~~	~~Vista St. Lucie~~	~~County~~	~~.125~~	~~.029 ave.~~	~~100~~	~~924~~	~~924~~	~~924~~	~~31[d]~~
~~54~~	~~Whispering Creek Village~~	~~County~~	~~.025~~	~~.016 ave.~~	~~100~~	~~300~~	~~300~~	~~300~~	~~53[d]~~

~~TABLE 6-D-1~~
~~Wastewater Treatment Plants, St. Lucie County~~

~~Map Key~~	~~Wastewater Plant~~	~~Location~~	~~Design Capacity (1 MGD)~~	~~Operating Capacity (1 MGD)~~	~~% Capacity for UNC~~	~~Current # of People Served~~	~~Projected 2000 Population Served~~	~~Projected 2005 Population Served~~	~~Current LOS GPCD~~
	~~COMMERCIAL~~								
	~~INDUSTRIAL~~								
~~71~~	~~Harbor Branch Foundation~~	~~County~~	~~.015~~	~~.003 ave.~~	~~100~~	~~159~~	~~***~~	~~***~~	~~19~~
	~~PUBLIC~~								
~~76~~	~~SLC Juvenile Detention Center~~	~~County~~	~~.015~~	~~.005 ave.~~	~~100~~	~~106~~	~~***~~	~~***~~	~~47~~
~~77~~	~~Savannas Recreation Area~~	~~Ft. Pierce~~	~~.0075~~	~~.003 ave.~~	~~0~~	~~unknown~~	~~***~~	~~***~~	~~*~~[e]

~~a FPUA data is based on connections. A connection could be hooked up to a single family residence or to a condominium with numerous units. It is impossible to determine the exact numbers with the information available. Also, some residential units are considered commercial and are included in the ΔGeneral® category. From September, 1990, the connection count is: residential inside city 9146; residential outside city 736; general inside city 1724; and, outside city 89. The Utilities Authority estimates the total number of residents served currently (December , 1989) at 30,000. The projections for 1995 and 2000, taken from the 1988 FPUA Master Plan, are 39,125 and 40,867 respectively. The LOS of 130 gpod is taken from the FPUA 1988 Master Plan.~~

~~b GDU currently serves a total population of 22,922 with 2,380 customers residing in the unincorporated County. The total % capacity allocated by the GDU facilities for the unincorporated County is 10%. From the information available, the number of residents served per plant is not known. At this time, the projected service population for 1990 and 1995 and the current capacity surplus/deficiency is unavailable.~~

~~c Current LOS was determined by dividing the average current operating capacity by the current number of people served.~~

~~d Strongly influenced by seasonal population 60% of the year, off-season population is approximately 65% of current number of people served.~~

~~e Current LOS not determined due to lack of design capacity data and/or current # of people served.~~

~~*** The 2005 and 2010 projected population served is unavailable due to lack of data.~~

~~Notes:~~
1. ~~Not in file refers to information the local FDEP office would have normally have in their files.~~
2. ~~Due to lack of sufficient data, it is not possible to determine the current capacity surplus or deficiency.~~
3. ~~UNC refers to Unincorporated St. Lucie County.~~
4. ~~LOS refers to Level-of-Service.~~

Service Area	2007	2012	2017	2022	2027
North County Service Area	3,194	15,821	48,968	69,041	80,059
Central County Service Area	0	8,852	20,384	31,337	41,962
South County Service Area	0	6,292	18,703	28,131	32,508
North Hutchinson Island[1]	6,580	7,419	8,258	9,097	9,935

[1]Connected population refers to Equivalent Residential Connections (ERC) connected to North Hutchinson Island wastewater system and assumes 2.2 people per ERC.

Table 6-D-3
Estimated Connected Wastewater Flows[1] (MGD)

Service Area	2007	2012	2017	2022	2027
North County Service Area	0.319	1.582	4.897	6.904	8.006
Central County Service Area	0.000	0.885	2.038	3.134	4.196
South County Service Area	0.000	0.629	1.870	2.813	3.251
North Hutchinson Island	0.658	0.742	0.826	0.91	0.994

[1]Wastewater Demand based on Population projections and an assumed per capita flow of 100 gpd/person

Within St. Lucie County the average daily average daily wastewater demands were based on an average per capita flow of 100 gpd. Wastewater flow will increase as the population increases within the service delivery area.

The St. Lucie County Utilities Water and Wastewater Master Plan is currently being updated (and a revised Master Plan is anticipated to be complete in 2008) and will identify the total projected flow demands for wastewater connections through the build out date. Updated projections for each WWTP will be provided in Table 6-D-3 through the amendment process upon completion of the Master Plan Update.

CAPACITY ASSESSMENT

A level of service for wastewater facilities has been defined by the FDEP at 100 gallons per day per capita (gpcd) of capacity ~~per capita~~. This makes some allowance for infiltration. Treatment facilities should be planning for expansion when they reach 80~~%~~ percent of their flow capacity, and under construction at 90~~%~~ percent of their flow capacity.

The level of service standard for sanitary sewer systems other than those owned and operated by ~~Ft. Pierce Utilities Authority~~FPUA shall be 100 ~~gallons per day per~~

~~capita~~gpcd. Upon completion of the Sanitary Sewer Master Plan, any necessary changes in the level of service standard will be made through a Comprehensive Plan Amendment.

The ~~level of service~~LOS standard for those areas of the unincorporated County served by ~~Ft. Pierce Utilities Authority~~FPUA shall be ~~130 gallons per capita per day (Ft. Pierce Utilities Authority July, 1999~~110 gpcd (FPUA Master Plan, September 2006).

Many of the ~~wastewater treatment plants~~WWTPs in St. Lucie County are small package plants intended to serve individual communities, businesses, and condominiums. This type of facility has no significance in a capacity assessment, since it is not large enough to provide service to an expanded service area. As previously discussed, Table 6-D-1, identifies the average operating capacity for treatment plants. These figures were obtained from FDEP records and/or the individual utilities.

The following particular observances are made:

$ The ~~Ft. Pierce Utilities Authority, at 56% of capacity,~~FPUA is capable of receiving flow from their expanded service area.

~~$ Of the~~ The South Hutchinson ~~plants, the following are noteworthy:~~

$ Island ~~Dunes is presently under capacity, but construction is now under way for two condominium towers, with another one planned~~WWTP is capable of handling flows at the projected build out conditions (district south of the FPL nuclear power plant).

~~Meadowood~~

$ Panther Woods Country Club ~~(3% of capacity)~~ is ~~far~~ underutilized, but is designed to serve a specific development at build out. Although continued development has not been significant, future use of this plant as additional development does take place is likely.

~~$ In 1996, St. Lucie County Utilities completed the construction of a new plant in the North Hutchinson Island Utility District.~~

$ Reserve Utility Corporation ~~(11% of capacity)~~ is adequate for present needs, and is planning to expand as development takes place inside The Reserve.

$ St. Lucie West is ~~a new plant (3% of capacity),~~ capable of handling growth in its service area and planned to grow with the development.

$ Spanish Lakes Country Club Village ~~(70% of capacity)~~ is built out.

$ Spanish Lakes ~~One Mobile Home Park (54% of capacity)~~MHP is built out.

$ Port St. Lucie Utility Systems Department has adequate capacity for incoming flows and for growth.

The above analysis indicates in general a capacity for growth in the municipal service areas, newer planned developments in the unincorporated County (e.g., The Reserve), and some of the Hutchinson Island communities. Growth in all of the other unincorporated areas of the County will require additional wastewater transport and treatment facilities.

A. ~~THE SAVANNAS~~

~~Table 6-D-2 indicates the projected population and sewage flows for the Savannas area. Many of the existing plants in the area are nearing capacity, too small to be significant, or designed only for businesses, with no plans for expansion. Newer planned communities in the area (The Savannah Club, Vista St. Lucie, The Grove) have adequate capacity for their present growth.~~

~~The area is generally low and flat, so effluent disposal could become a problem. It is also an area where septic tanks must be used with special care, and a limit exists on the size and number which can be expected to function in the area.~~

~~A solution to the future capacity deficiency problem and the effluent disposal problem in this area would be a wastewater treatment system of regional or sub-regional size. Prior to this system, the possibility exists that the County could acquire one or two of the large existing package plants and expand them to handle the flow from the existing developments which are presently experiencing effluent disposal problems.~~

~~As new development occurs within the Savanna Club area, the developments will be required to select a service provider for wastewater treatment services. The Port St. Lucie Utility Systems Department has designated the area where the Savannas are located as being within their service area.~~

~~TABLE 6-D-2~~
~~Projected Population and Flows for the Savannas Area~~

	~~1985~~	~~1995~~	~~2000~~	~~2005~~	~~2010~~	~~2015~~
~~Resident Population~~	~~6,884~~	~~11320~~	~~13548~~	~~15776~~	~~18004~~	~~20232~~
~~Average Daily Flow (1000 gpd)~~	~~688.4~~	~~1132.0~~	~~1354.8~~	~~1577.6~~	~~1800.4~~	~~2023.2~~
~~Commercial Flow (1000 gpd)~~	~~130~~	~~180~~	~~180~~	~~180~~	~~180~~	~~180~~
~~Total Flow (1000 gpd)~~	~~818.4~~	~~1312~~	~~1534.8~~	~~1757.6~~	~~1980.4~~	~~2203.2~~

~~Source: Kimley-Horn and Associates, Inc. and SLCMPO, 1988~~

SOUTH HUTCHINSON ISLAND

South Hutchinson Island is serviced by St. Lucie County Utilities. ~~In 1995, St. Lucie County constructed a 1.7 mgd wastewater and reclaimed water facility.~~ The ~~new facility is designed to accommodate buildout of~~ South Hutchinson Island District Wastewater Utility was created under Resolution 07-208. In 1995, St. Lucie County constructed a 1.6 MGD wastewater and reclaimed water facility. This facility is designed to accommodate build out of South Hutchinson Island (approximately 15,150 residents). Approximately 7,000 units of wastewater capacity exists ~~and~~ , of which 280 units remain in the bank that can be transferred to properties within the service area to accommodate development. The County has adopted a policy to transfer capacity through the County Utility Office.

Currently over 90~~%~~ percent of the total wastewater flow from the South Hutchinson Island ~~Service Area~~ District Wastewater Utility service area is collected and treated. The only area not currently connected to the system includes five condominiums in the Island Dunes Complex. This condominium complex is serviced by a private WWTP~~. Recently, a force main was constructed in the North District, north of the FPL powerplant, to collect the wastewater flow from this area. This system was designed to collect the wastewater flow through buildout of the area. It is anticipated~~ that ~~by 2020, the remaining unconnected condominiums will be connected the St. Lucie County municipal system.~~produces reclaimed water for irrigation of the golf course. As the overall system on South Hutchinson Island was designed to accommodate the maximum ~~buildout growth~~ build out within the County's service area on the island, no additional expansions are required or planned within the 20-year planning cycle.

~~**Formation of a MSTU or MSBU:** In 1994, St. Lucie County Utilities established a special improvement/benefit district. In 1995, the property acquisition was completed and final construction permits were issued authorizing the construction of a 1.75 mg wastewater treatment facility, located just south of the FPL Nuclear Power Plant. To approach~~ FPUA serves all wastewater customers on South Hutchinson Island within their service ~~options in a rational manner, the adopted Water and Wastewater Master Plan for the County shall be updated~~area. SLCU serves the Island from FPUA's service boundary south to the Martin County line.

~~C~~B. NORTH COUNTY AREA

In 1999, St. Lucie County acquired the Holiday Pines ~~Wastewater Treatment Plant (~~WWTP~~)~~. This acquired facility allowed the County to provide and plan future collection service of wastewater into the central county area. The ~~North~~ St. Lucie County ~~Utility~~ Water and Sewer District service area was created. ~~This~~In August 2005, the North Hutchinson Island Utility District, the Airport Utility District, the North County (Holiday Pines) Utility District, the Mid County District, the Indian River Estates MSBU District and the H.E.W. Utility District were consolidated into the St. Lucie County Water and Sewer District. The St. Lucie County Water and Sewer District area incorporates the land mass between the Indian River County Line south to St. Lucie Boulevard, east to the Indian River Lagoon and west to the Interstate 95 Interchange, as well as North Hutchinson Island. The current ~~North County~~Holiday Pines facility is an extended aeration concrete package plant with a permitted capacity of 0.~~210 mgd. In 1998, this plant received an average daily flow of about 0.122 mgd~~3 MGD. Effluent is disposed through two groups of percolation ponds. The first group is comprised of three ponds with a total of area of 95,900 square feet. The second group is comprised of four ponds with a total area of 70,600 square feet. The combined ponds are also permitted to dispose up to 0.120 ~~mgd~~MGD of Reverse Osmosis brine from the ~~North County~~ Holiday Pines Water Treatment Plant. It is anticipated that the ponds will provide adequate effluent disposal capacity up to the permitted 0.~~210~~3 MGD capacity of the existing facility.

Current wastewater flows at the ~~North County~~ Holiday Pines Wastewater Treatment Facility ~~is about 0.122 mgd. Connected wastewater flow projections for the North County service area~~ are ~~0.217 mgd in 2005, 2.17 mgd in 2020 and 24.7 mgd at buildout. As these projections indicate, this facility will reach~~nearing capacity ~~by 2005~~. In

order to accommodate the population growth needs and wastewater demands into the year 2020 and the north county buildout2025 and anticipated growth in the North County area, the following wastewater facility needs and improvements were identified:

$ Expansion ofDecommissioning of the Holiday Pines WWTP into a Regional Wastewater Treatment Plant, increasing the facility from the current 0.210 mgd capacity to 5.0 mgd capacity by 2005.in FY 2010/2011

$ Construct and operate, by 2010, a new regional wastewater treatment plant2013, a new North County Regional WRF to be located south of Indrio Road and east of Taylor Dairy Road. This facility shall at construction contain:

a) Initial capacity of 1.5 mgd by 2010 2 MGD by 2013.

a)b) Increase capacity to 2.5 mgd by 2020 4 MGD by 2017, with provisions to expand to 6 MGD as needed.

b)c) Provide equipment capable of treating the wastewater product to unrestricted public access irrigation.

d) InstallPotentially construct a 0.3 mgd process train by 2015deep injection well for wet weather disposal of reclaimed water, or implementation of identified alternative beneficial reuse project for disposal of reclaimed water.

c)e) Construct a biosolids dewatering facility at the North County Regional WRF.

$ Provide service to the existing developments within the NorthSt. Lucie County Water and Sewer District Service Area.

D. NORTH HUTCHINSON ISLAND

St. Lucie County Utilities (SLCU) owns and operates a wastewater collection system that serves all commercial and most multi-family development on the majority of North Hutchinson Island (with the exception of four condominiums and several single-family developments still served by private package wastewater treatment plants or private septic system. In 1999, there were approximately 2000 ERC=s connected to SLCU=s central wastewater collection system on North Hutchinson Island. The condominiums still served by private package plants are the Atlantic View Beach Club, The Breakers, Ocean Harbor South and Treasure Cove Dunes. These four developments have a total of 657 units or ERC=s. Design of a collection system and lift station to connect the Ocean Harbor South and Treasure Cove Dunes was completed in 1999, construction began in 2000 and is anticipated to be completed in 2002. Atlantic View Beach Club and The Breakers are actively pursuing connection to SLCU wastewater collection system. Other developed units not connected to the SLCU system include approximately 383 single-family homes, a county fire station, Pepper Park and the Ft. Pierce Inlet State Recreation Area.Park. The County is currently evaluating the potential for a future expansion of the facility to increase capacity from 0.5 MGD to 0.8 MGD.

The projected connected wastewater flow approaches the design capacity of the existing North Hutchinson Island WWTP around 2012. In order to maintain sufficient wastewater capacity at the North Hutchinson Wastewater Plant Island WWTP to maintain quality service at the buildbuild out of North Hutchinson Island, the following required improvements have been identified:

- ~~Expand~~Possible expansion of the existing facility from 0.5 ~~mgd capacity to 0.75 mgd by 2012.~~

- ~~Expand the existing facility from 0.75 mgd~~MGD capacity to ~~1.0 mgd by 2020.~~

- ~~Connect those facilities that have private package plants on North Hutchinson Island to the expanded North Hutchinson Island Wastewater Treatment Facility~~0.8 MGD, if needed.

- Replace the 6-inch force main north of the Hibiscus Lift Station with an 8-inch force main by ~~2005~~2009.

- Design and construct the Queens Cove wastewater collection system including lift station and force main by ~~2010~~2012.

- Design and construct the Bimini Drive, Bermuda Drive and Marina Drive wastewater collection system including lift station and force main by ~~2010~~2012.

- Design and construct the Ft. Pierce Shores wastewater collection system including lift station and force main by ~~2010.~~

- ~~Extend the existing 8-inch force main from Bryn Mawr north to the County line and construct a lift station by 2020~~2012.

- At ~~build~~build out of North Hutchinson Island expand the existing facility ~~from 1.0 mgd to 1.5 mgd~~to 1.0 MGD, if needed.

E. GENERAL PERFORMANCE OF EXISTING FACILITIES

As can be seen in the preceding data, with the exception of ~~Fort Pierce Utilities~~FPUA, Port St. Lucie ~~Utility Systems Department~~Utilities and ~~St. Lucie County Utilities~~SLCU, all other treatment facilities in the County are project specific. Information was not readily available with which to analyze the general performance of these facilities that serve the unincorporated County, evaluate the adequacy of the current level of service provided by the facilities, the general condition and expected life of the facilities, and the impact of the facilities upon adjacent natural resources.

In 1992, St. Lucie County adopted the Water and Wastewater Master Plan. In 1999, the St. Lucie County Water and Wastewater Master Plan was updated and adopted by the Board of County Commissioners in August 2000. The Master Plan is currently being updated (completion is anticipated in 2008) and will include changes to the information provided herein. The Comprehensive Plan will be updated via the amendment process upon completion of the Master Plan.

F. SANITARY SEWER MASTER PLAN FOR THE UNINCORPORATED COUNTY

Because of the importance that the provision of sanitary sewer service will play in the development of the County and also significant pressures for the County to enter into the provision of such services, St. Lucie County Utilities adopted a Water and Wastewater Master Plan for the unincorporated County in 1992. _The ~~County has since drafted an update to the Water and Wastewater~~ Master Plan~~, January 1999. There has been further developments, due to~~ is currently being updated (completion is anticipated in 2008) and will include changes to the information provided herein. The Comprehensive Plan will be updated via the ~~acquisition~~amendment process upon completion of the ~~Holiday Pines Service Corporation which will require major revisions to the draft Water and Wastewater~~ Master Plan.

G. SANITARY SEWER FACILITY REPLACEMENT, EXPANSION AND NEW FACILITY SITING

~~Not having an overall plan for the provision of this service or even having the necessary data base for such a plan, and with those facilities which do exist being designed to be project or area specific, there is not a clear direction for the overall provision of sanitary sewer systems in the urban areas of the County. Therefore, there is not a set of criteria which may be rationally applied in replacement, expansion or siting of new facilities. It is intended that these deficiencies will be addressed through the Sanitary Sewer Master Plan. Upon completion of this Master Plan, pertinent information will be incorporated into this sub-element through the plan amendment process.~~

SLCU has been relying on the 2004 Water and Sewer Master Plan as a planning tool and the Comprehensive Plan for planning purposes. The 2004 Water and Sewer Master Plan is currently undergoing an update (completion is anticipated in 2008). The 2004 Master Plan identified the need for expansions, upgrades and new facilities needed to maintain a functioning and adequate wastewater system. The 2008 Water and Wastewater Master Plan will further address these needs for the next 5-year planning period. Upon completion of this Master Plan, pertinent information will be incorporated into this sub-element through the plan amendment process.

GOALS, OBJECTIVES AND POLICIES

The following Comprehensive Plan Goals, Objectives, and Policies are modifications of the portions of the Element as adopted in 1990.

SANITARY SEWER SUB-ELEMENT
GOALS, OBJECTIVES AND POLICIES

GOAL 6D.1 **THE COUNTY SHALL PROVIDE NEEDED PUBLIC UTILITIES IN A MANNER WHICH PROVIDES THE MOST EFFECTIVE, ENVIRONMENTALLY SOUND, SAFE AND ECONOMIC WASTE WATER TREATMENT SYSTEM AND PROMOTES ORDERLY, COMPACT URBAN GROWTH.**

Objective 6D.1.1 **Sanitary sewer facilities shall be provided by the County in a manner that shall not promote urban sprawl.**

Policy 6D.1.1.1 The utility service areas, as delineated in the Water and Wastewater Master Plan, will be determined on the basis of economy and efficient operation but will not promote linear or leapfrog development. The utility service areas shall be reviewed and updated every 5 years (beginning 2008).

Policy 6D.1.1.1~~b~~ The utility service areas, as delineated in the Water and Wastewater Master Plan, will be determined on the basis of economy and efficient operation but will not promote linear or leapfrog development. The utility service areas shall be reviewed and updated every 5 years (beginning 2002).~~The County will determine the most cost effective and efficient means of providing sanitary sewer service to all areas of the urban service area as depicted in Policy 1.1.5.1 of the Future Land Use Element and in a manner that will not promote linear or leapfrog development consistent with Policy 1.1.5.2 of the Future Land Use Element. The County utility department will publish on an annual basis a Service Availability Report setting forth the availability of sanitary sewer service from the various potential suppliers of such service to the unincorporated areas of the County that meets the requirements of Goal 6D.1 and this Policy.~~

~~Policy 6D.1.1.1b~~ ~~The County will determine the most cost effective and efficient means of providing sanitary sewer service to all areas of the urban service area as depicted in Policy 1.1.5.1 of the Future Land Use Element and in a manner that will not promote linear or leapfrog development consistent with Policy 1.1.5.2 of the Future Land Use Element. The County utility department will publish on an annual basis a Service Availability Report setting forth the availability of sanitary sewer service from the various potential suppliers of such service to the unincorporated areas of the County that meets the requirements of Goal 6D.1 and this Policy.~~

Policy 6D.1.1.2 Provision of centralized (not including package treatment plants) sanitary sewer service shall be limited to the utility service availability options set forth in the annual Service Availability Report described in Policy 6D.1.1.1b.

Policy 6D.1.1.3 The County shall investigate alternate methods of waste disposal other than septic tanks.

~~**Objective 6D.1.2**~~ ~~**The County shall implement procedures for ensuring that when a development permit is issued, pursuant to then current Service Availability Report, adequate facility capacity is available or will be available when needed to serve the development, concurrent with the impacts, in order to meet adopted level-of-service standards.**~~

Objective 6D.1.2 **The County shall implement procedures for ensuring that when a development permit is issued, pursuant to then current Service Availability Report, adequate facility capacity is available or will be available when needed to serve the development, concurrent with the impacts, in order to meet adopted level-of-service standards.**

Policy 6D.1.2.1 Levels of service for on-site improvements, including sewer connection lines, shall be as required of the developer in the land development regulations.

~~Policy 6D.1.2.2~~ ~~The level of service standard for those areas of the unincorporated County served by Ft. Pierce Utilities Authority shall be 380 gallons per capita per day (Ft. Pierce Utilities Authority 1988 Water and Wastewater Master Plan, July, 1988).~~

~~Policy 6D.1.2.3~~ ~~The standards for level of service for sanitary sewer systems other than those owned and operated by Ft. Pierce Utilities Authority shall be Permanent & Seasonal Residents - 85 gpcd; Employee - 102 gpcd and school student - 17 gpcd.~~

Policy 6D.1.2.3 The standards for level of service for sanitary sewer systems other than those owned and operated by FPUA shall be Permanent & Seasonal Residents - 100 gpcd; Employee - 100 gpcd and school student - 17 gpcd.

Policy 6D.1.2.4 The County shall include in the annual Service Availability Report an update of all improvements, expansions, or increases in the capacities of facilities, of the various potential suppliers of service to the unincorporated areas of the County to ensure compatibility with the established level of service standards for~~.~~ such facilities.

Policy 6D.1.2.5 The County shall prepare annual summaries of capacity and demand information for each facility of the various potential suppliers of service to the unincorporated areas of the County.

~~Policy 6D.1.2.6~~ ~~Development within the unincorporated areas of the County will only be permitted when such development ties into or makes provision for tying into a regional or sub-regional system that is available as set forth in the annual Service Availability Report.~~

Policy 6D.1.2.6 Development within the unincorporated areas of the County will only be permitted when such development ties into or makes provision for tying into a regional or sub-regional system that is available as set forth in the annual Service Availability Report.

Policy 6D.1.2.7 The County shall condition development orders to provide that when a regional sanitary sewer system is available, the development will be required to tie into it. Issuance of development orders or permits will be further conditioned on demonstration of compliance with applicable federal, state and local permit requirements for on-site wastewater treatment systems.

Objective 6D.1.3 The County will establish and maintain a five-year and twenty-year schedule of capital improvement needs for sanitary sewer facilities in recognized County service areas.

Policy 6D.1.3.1 The following public facility improvements within a facility type are to be considered in the following order or priority, as determined by the Board of County Commissioners:

A. Replacement of obsolete or worn out facilities, including repair, remodeling and renovation of facilities that contribute to achieving and/or maintaining levels of service.

B. New facilities that reduce or eliminate existing deficiencies in levels of service.

C. New facilities that provide the adopted levels of service for new growth during the next five fiscal years, as updated by the annual review of the Capital Improvements Element.

D. Improvements to existing facilities, and new facilities that significantly reduce the operating cost of achieving and/or maintaining levels of service.

E. New facilities that exceed the adopted levels of service for new growth during the next five fiscal years by either:

1) providing excess public facility capacity that may be needed by future growth beyond the next five fiscal years, or

2) providing higher quality public facilities that are contemplated in the County's normal design criteria for such facilities.

F. ~~Facilities not described in Subsections A through E, above, but which the County is obligated to complete, provided that such obligation is evidenced by a written agreement the County executed prior to July 31, 1990.~~

~~G.~~ All facilities scheduled for construction or improvement in accordance with this Policy shall be evaluated to identify any plans of State agencies or the South Florida Water Management District that affect, or will be affected by, the proposed capital improvement.

~~H~~G. Project evaluation may also involve additional criteria that are unique to each type of public facility, as described in other elements of this Comprehensive Plan.

Policy 6D.1.3.2 In the event that the planned capacity of public facilities is insufficient to serve all applicants for development orders, the Board of County Commissioners will schedule capital improvements to serve developments in the following order of priority:

A. previously approved orders permitting new development,

B. new orders permitting redevelopment, and

C. new orders permitting new development.

Objective 6D.1.4 **The County will enforce the mandatory requirements for design, operation, and maintenance of on-site wastewater treatment systems.**

Policy 6D.1.4.1 The County shall develop and implement guidelines for on-site disposal systems. These guidelines will include: establishing general requirements for the construction, use, and abandonment of on-site sewage disposal systems; providing for permits with conditions and approvals; providing for standards for the approval of applications for an on-site sewage disposal system; providing for conditions under which on-site sewage disposal systems shall not be used; providing for system size determination; providing for soil classification data; providing for percolation tests; providing for alternative systems; and, providing for permit fees.

~~Policy~~ ~~The County shall, in conjunction with the Public Health Department, limit use of on-site wastewater treatment systems to the following conditions:~~

~~6D.1.4.2~~

~~Existing septic tank and package treatment plants may remain in service until such time as centralized service is made available;~~

~~Use of septic tank systems concurrent with on-site potable water wells for new single family detached residential development shall be limited, depending on soil and water table conditions, and shall be in compliance with State regulations;~~

~~Use of small package treatment plants shall be limited to use where central facilities are not available in the rural County area and shall be limited to use in order to provide pre-treatment of sewage where required for particular industries or commercial uses prior to discharge into regional systems in the sanitary sewer areas if such a system is available; and~~

~~Interim wastewater plants may be used for residential developments until central sewer service is available; in compliance with Section 381.272(1), F.S., all applicable guidelines shall be followed and all subdivisions must provide sewer utility easements and rights-of-way and the developer should give advance notice to purchasers of lots.~~

Policy 6D.1.4.2 The County shall, in conjunction with the Public Health Department, limit use of on-site wastewater treatment systems to the following conditions:

Existing septic tank and package treatment plants may remain in service until such time as centralized service is made available;

Use of septic tank systems concurrent with on-site potable water wells for new single family detached residential development shall be limited, depending on soil and water table conditions, and shall be in compliance with State regulations;

Use of small package treatment plants shall be limited to use where central facilities are not available in the rural County area and shall be limited to use in order to provide pre-treatment of sewage where required for particular industries or commercial uses prior to discharge into regional systems in the sanitary sewer areas if such a system is available; and

Interim wastewater plants may be used for residential developments until central sewer service is available; in compliance with Section 381.272(1), Florida Statute, all applicable guidelines shall be followed and all subdivisions must provide sewer utility easements and rights-of-way and the developer should give advance notice to purchasers of lots.

Policy 6D.1.4.3 The County shall require that construction of new residential development at densities greater than two units per acre only be permitted when central water (including package treatment plants) and central sewer (including package treatment plants) systems are available or will be provided concurrent with the impacts of development.

Policy The County shall coordinate with appropriate federal and State agencies, and amend local ordinances to require that issuance of permits for replacement or

6D.1.4.4 expansion of existing on-site wastewater treatment systems is conditioned upon compliance with current regulatory requirements and water quality standards.

Objective 6D.1.5 **The County shall provide for the coordination of the extension or increase in the capacity of existing facilities as well as the provision of new facilities to meet future needs through development and adoption of a Sanitary Sewer Master Plan. Prior to the completion of the Master Plan, residential development in excess of two units per acre and all other development shall not be permitted if it is intended to be served by on-site septic systems.**

Policy 6D.1.5.1 The County shall require that all building permit applicants prior to permit issuance verify that sewer service can be provided in conformance with the policies in this plan and that adequate system capacity is available if a central system is to be utilized.

~~**GOAL 6D.2**~~ ~~**BY THE YEAR 2003, ST. LUCIE COUNTY WILL ENSURE WASTEWATER SERVICE FOR SUB-REGIONAL OR REGIONAL AREAS TO MEET EXISTING AND PROJECTED DEMANDS IN THOSE AREAS.**~~

~~**Objective 6D.2.1**~~ ~~**Every 5-years beginning in 2005, the County will evaluate the County-wide master plan for wastewater in the unincorporated County areas.**~~

GOAL 6D.2 **ST. LUCIE COUNTY WILL ENSURE WASTEWATER SERVICE FOR SUB-REGIONAL OR REGIONAL AREAS TO MEET EXISTING AND PROJECTED DEMANDS IN THOSE AREAS.**

Objective 6D.2.1 **Every 5-years beginning in 2008, the County will evaluate the County-wide master plan for wastewater in the unincorporated County areas.**

Policy 6D.2.1.1 The County shall implement the master plan update for wastewater by ~~2002.~~2008. Every 5-years the county shall review and update the master plan to include the following:

A. An inventory of the existing package plants and wastewater treatment facilities in the unincorporated area of St. Lucie County. This inventory is to assess their current flow, committed flow, condition, useful life, ability to expand, and general need to connect to a regional system.

B. Redefine the potential service areas.

C. Provide population projections for the service areas based on the population projections used in the development of this Comprehensive Plan.

D. Estimate the size of necessary treatment facilities.

E. Suggest general locations for any new treatment facilities.

F. Identify any remaining potential utility acquisitions.

G. Provide budget estimates for the necessary capital improvements associated with the development of the County utility system, or components thereof.

~~H. Examine the existing wastewater service rate structure and connection fee charges to determine an estimate of potential revenues generated by a particular construction project.~~

H. Estimate operating costs for the facilities.

I. Provide an outline of financing options and implementation guidelines.

Policy 6D.2.1.2 In order to provide maximum coverage of wastewater service within the South Hutchinson Island District Wastewater Utility service area for the 5-year planning period and through build out of the area, the County shall implement the Water and Wastewater Master Plan, by maintaining the current operation of the South Hutchinson Island Wastewater Treatment facility.

Policy 6D.2.1.~~2~~3 ~~In~~By December 31, 2008, in order to provide maximum coverage of wastewater ~~service~~ collection within the ~~South Hutchinson Island service area~~St. Lucie County Water and Sewer District Service Area, for the 5-year planning period and through ~~build~~build out of the area, the County shall implement the Water and Wastewater Master Plan, by ~~maintaining~~determining if the ~~current operation of the South Hutchinson Island Wastewater Treatment~~following identified facility needs and/or improvements will be required:

A. Decommissioning of the Holiday Pines WWTP.

B. Construct and operate by 2013, a new regional WRF to be located south of Indrio Road and east of Taylor Dairy Road. This facility shall at construction contain:

1. Initial capacity of 2 MGD by 2013.
2 increase capacity to 4 MGD by 2017 with provisions to expand to 6 MGD if needed.
3. Provide equipment capable of treating the wastewater product to unrestricted public access irrigation.
4. Potentially construct a deep injection well for wet weather disposal of reclaimed water or implementation of identified alternative beneficial reuse project.
5. Construct a biosolids dewatering facility at the North County Regional WRF.

C. Provide service to the existing developments within the St. Lucie County Water and Sewer District Area.

Policy 6D.2.1.~~3~~4

By December 31, ~~2005~~2008, in order to provide maximum coverage of ~~potable~~ water ~~delivery~~and wastewater service within the North County~~Hutchinson Island~~ Service Area~~s~~, for the 5-year planning period and through ~~build~~build out of the area, the County shall implement the Water and Wastewater Master Plan, by determining if the following ~~identified~~ facility needs and/or improvements will be required:

A. ~~A. Expansion~~Potential expansion of the ~~Holiday Pines WWTP into a Regional Wastewater Treatment Plant, increasing the~~ existing facility from ~~the current~~ 0.~~210 mgd~~5 MGD capacity to ~~5.0 mgd capacity by 2005~~.8 MGD, if needed.

B. ~~B. Construct and operate by 2010, a new regional wastewater treatment plant to be located south of Indrio Road and east of Taylor Dairy Road. This facility shall at construction contain:~~Replace the 6-inch force main north of the Hibiscus Lift Station with an 8-inch force main by 2009.

~~1. Initial capacity of 1.5 mgd by 2010. 2 increase capacity to 2.5 mgd by 2020.~~

~~3. Provide equipment capable of treating the wastewater product to unrestricted public access irrigation.~~

~~4. Install a 0.3 mgd process train by 2015.~~

~~C. Provide service to the existing developments within the North County Service Area.~~

C. Design and construct the Queens Cove wastewater collection system including lift station and force main by 2012.

D. Design and construct the Bimini Drive, Bermuda Drive and Marina Drive wastewater collection system including lift station and force main by 2012.

E. Design and construct the Ft. Pierce Shores wastewater collection system including lift station and force main by 2012.

F. At build out of North Hutchinson Island expand the existing facility to 1.0 MGD, if needed.

~~Policy 6D.2.1.4~~ ~~By December 31, 2005, in order to provide maximum coverage of potable water delivery within the North Hutchinson Island Service Area, for the 5-year planning period and through buildout of the area, the County shall implement the Water and Wastewater Master Plan, by determining if the following facility needs and/or improvements will be required:~~

~~K. Expand the existing facility from 0.5 mgd capacity to 0.75 mgd by 2012.~~

~~L. Expand the existing facility from 0.75 mgd capacity to 1.0 mgd by 2020.~~

~~M. Connect those facilities that have private package plants on North Hutchinson Island to the expanded North Hutchinson Island Wastewater Treatment Facility.~~

~~N. Replace the 6-inch force main north of the Hibiscus Lift Station with an 8-inch force main by 2005.~~

~~O. Design and construct the Queens Cove wastewater collection system including lift station and force main by 2010.~~

~~P. Design and construct the Bimini Drive, Bermuda Drive and Marina Drive wastewater collection system including lift station and force main by 2010.~~

~~Q. Design and construct the Ft. Pierce Shores wastewater collection system including lift station and force main by 2010.~~

~~R. Extend the existing 8-inch force main from Bryn Mawr north to the County line and construct a lift station by 2020.~~

~~At buildout of North Hutchinson Island expand the existing facility from 1.0 mgd to 1.5 mgd.~~

~~**Objective 6D.2.2**~~ ~~**The following locations are targeted for higher intensity development or are currently experiencing problems with existing sewer systems and shall have central sanitary sewer service provided:**~~

~~**A. That area surrounding the I-95-Indrio Road Interchange.**~~

~~**B. That area surrounding the I-95-White City Road Interchange, west of I-95.**~~

~~**C. That area along U.S. 1 in the Savannas area.**~~

~~**D. That area along County Road 707 between the Savannas State Reserve and the Indian River Lagoon.**~~

~~**The date by which service will be provided will be determined in the Sanitary Sewer Master Plan Update, as amended from time to time. All amendments to the dates by which service will be provided will be incorporated into this sub-element through the comprehensive plan amendment process.**~~

Objective 6D.2.2 The following locations are targeted for higher intensity development or are currently experiencing problems with existing sewer systems and shall have central sanitary sewer service provided:

A. That area surrounding the I-95-Indrio Road Interchange.

B. That area surrounding the I-95-White City Road Interchange, west of I-95.

C. That area along U.S. 1 in the Savannas area.

D. That area along County Road 707 between the Savannas State Reserve and the Indian River Lagoon.

The date by which service will be provided will be determined in the various utility providers' Sanitary Sewer Master Plans, as amended from time to time. All amendments to the dates by which service will be provided will be incorporated into this sub-element through the comprehensive plan amendment process.

Policy 6D.2.2.1 The County shall study the development areas listed in ***Objective 2.2***, to establish growth projections, required facility sizes, and a schedule of capital improvements.

Policy 6D.2.2.2 The County shall undertake projects which shall be in accordance with the schedule of capital improvements.

Policy 6D.2.2.3 The County shall give priority to projects needed to correct existing deficiencies in the formulation and implementation of the annual work programs.

Policy The County shall consider initiating negotiations with other sanitary sewer service providers to serve those County areas that could be reasonably and cost

6D.2.2.4 effectively served by the other sanitary sewer service providers, either existing or proposed.

Policy 6D.2.2.5 The recipients of service shall be responsible for its cost.

~~**Objective 6D.2.3**~~ ~~**Upon completion of the update to the County-wide Water and Wastewater Master Plan, initiate programs to acquire private utilities serving the unincorporated area that are capable of expansion and of sustaining themselves with revenues.**~~

Objective 6D.2.3 **Upon completion of the update to the County's Water and Wastewater Master Plan (anticipated in 2008), initiate programs to acquire private utilities serving the unincorporated area that are capable of expansion and of sustaining themselves with revenues.**

Policy 6D.2.3.1 The County shall study those existing private utilities of appreciable service area size to determine their value and revenue-producing potential. In addition, needed capital improvements and service area expansion potential should be considered.

Policy 6D.2.3.2 The County shall consider for acquisition those private utilities which would benefit the public welfare through acquisition by the County.

Policy 6D.2.3.4 When areas previously served by package treatment plants are connected to a central system, it shall not be the responsibility of the central system to purchase these package treatment plants or incur the cost associated with removal.