Sanitary Sewer

Sub-Element

CONTENTS

LIST OF MAPS

II A. SANITARY SEWER SUB-ELEMENT

1. INTRODUCTION

Purpose: The purpose of the Sanitary Sewer Sub-Element is to ensure that sanitary sewer will be provided concurrently with the demand for services, to identify safe disposal methods for treated wastes, and to establish the level of service for sanitary sewer.

a. History

The City of Greenacres is provided wastewater collection and treatment services by Palm Beach County Water Utilities Department (PBCWUD). System No. 2 was formed in 1973 by an agreement between Palm Beach County and Utilities Development Company (UDC), a private corporation.

Initially Palm Beach County allowed UDC to construct a wastewater treatment plant on a 9.58 acre County owned site, located adjacent to Florida's Turnpike, south of Forest Hill Boulevard; and a water treatment facility, on County property approximately one mile east of the wastewater treatment plant, off Pinehurst Drive. In September of 1974, the entire system was sold to Palm Beach County.

b. Overview

Residents of the City of Greenacres presently receive service from two distinct sources, the Palm Beach County Water Utilities Department and private septic tanks.

1) Palm Beach County Water Utilities Department

PBCWUD owns and operates regional facilities. The City of Greenacres does not own or operate any wastewater facilities: however, the current and future boundaries are contained within the service area of PBCWUD.

To ensure economic efficiency in the operation of the regional sanitary sewer facilities, Palm Beach County Water Utilities Department has adopted regulations which require commercial and residential developments to connect to the PBCWUD's sewer system when service is made available. The Palm Beach County Water Utilities Department has also adopted design standards and review procedures to ensure that all connections to the system are compatible with the system design.

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 17-6 FAC.

2) Septic Tanks

Septic tanks are regulated by the Palm Beach County Public Health Unit (PBCPHU).

The Florida Department of Health and Rehabilitative Services (HRS) regulates septic tank and drain field installation within the State. These requirements have been adopted by rule in Chapter 10D-6, FAC. Palm Beach County Public Health Unit has adopted local rules and regulations for septic tank installation consistent with Chapter 10D-6. Septic tanks are being utilized in the original section of the City of Greenacres, Sherwood Forest, Pine Country and Sunland Estates subdivisions.

PBCPHU regulations adopted as Environmental Control Rule I (ECRI) regulate all aspects of septic tank use, installation, discontinuance, abandonment, etc. The ECRI is applicable in incorporated and unincorporated areas and the City coordinates efforts with PBCPHU. The following are excerpts from ECRI dealing with existing systems:

Existing System: Any existing septic tank system which remains in satisfactory operating condition shall remain valid for use in accordance with the State's Environmental Control Rule 1 and permit under which it was approved. If the use of a building is changed with additions or alterations to a building which will increase sewage flow or change sewage characteristics, any on-site sewage disposal system serving such building shall be upgraded to comply with the current public health provisions.

Discontinuance: Any existing on-site sewage disposal system installed under previous rules and regulations which becomes non-conforming with this Section for conditions or purposes as approved, and which has not been placed in use for a period of one (1) year or more, shall be deemed unapproved and its use for such purpose prohibited.

Abandonment: Whenever an approved sanitary sewer is made available under the conditions set forth in Sec. 16.1.E.1.a (sanitary sewer system available), any on-site sewage disposal system shall be abandoned and the sewage wastes from the residences or building discharged to the sanitary sewer within ninety (90) calendar days thereafter. When use of an on-site sewage disposal system is discontinued, it shall be abandoned and its further use for any purpose prohibited.

Responsibility for Inspection: It shall be the duty of the PBCPHU to conduct such technical inspections as are reasonable and necessary to determine compliance with the provisions of this section.

c. Terms and Concepts

The collection system is composed of a network of sewer pipes which collect sewage (also called wastewater) from individual establishments and convey it to a central location for treatment. The collection network is generally laid out in a pattern roughly analogous to the branching pattern of a tree. This classification scheme identifies sewers according to their size since sewage flow within the network is from the periphery toward the treatment plant. Trunk mains are defined as sewers which connect directly to and convey sewage to an interceptor. For more complex regional facilities, sewer mains will also be addressed.

Due to the relatively level terrain of Palm Beach County, a pumping system is used in conjunction with the major components of the regional collection systems. This allows sewage to be conveyed under pressure against the force of gravity and for long distances at minimal slopes. In conjunction with this type of system, the term "force main" is often applied to pressurized sewers without regard to their location within the network.

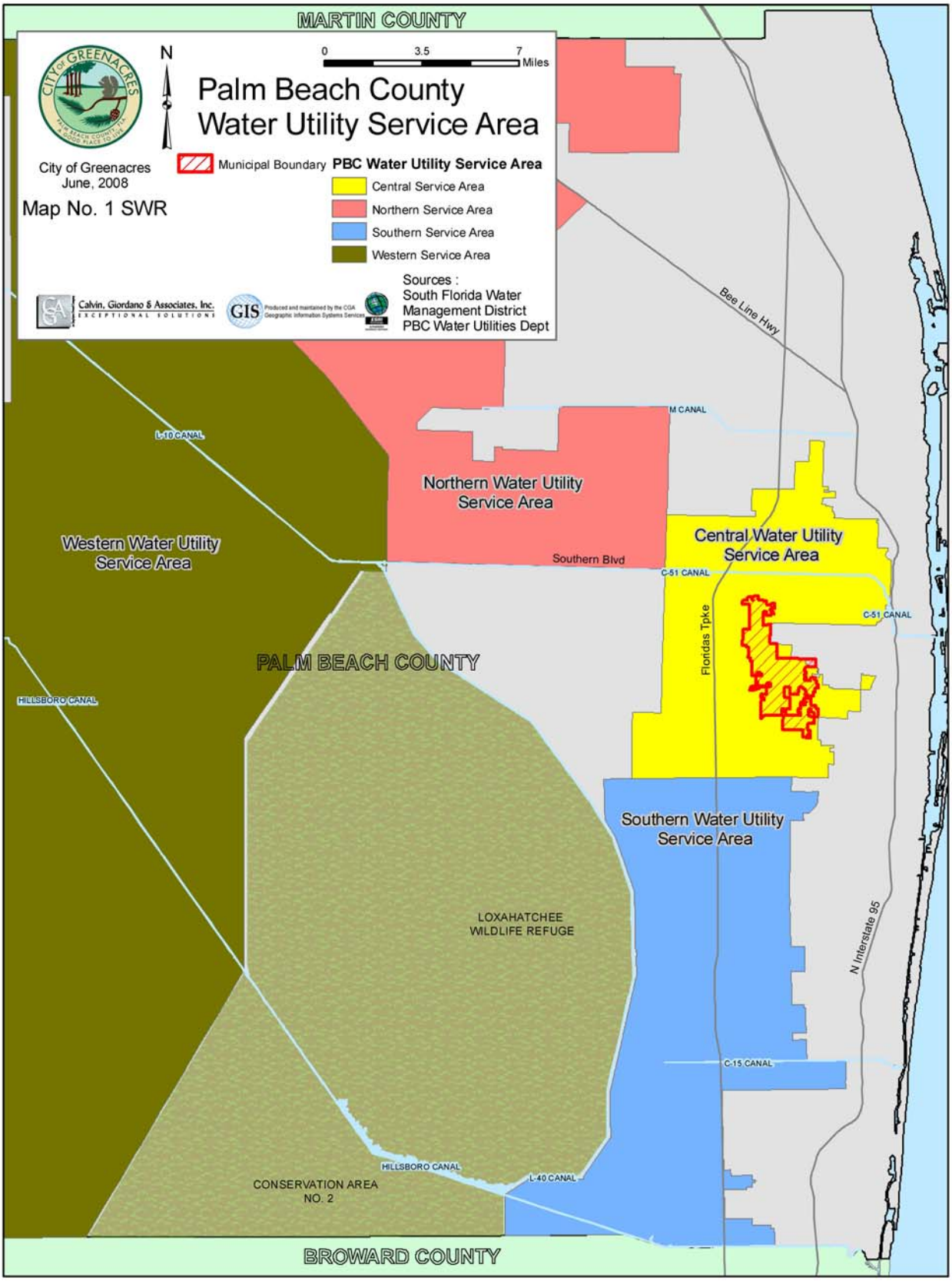
2. INVENTORY AND ANALYSIS

a. Operator and Service Area

Palm Beach County Water Utilities Department (PBCWUD), which serves the City of Greenacres, has prepared master plans for its entire system. The plan divides the service area into two (2) regions. The dividing line between the central and southern regions is Lake Worth Road.

1) Geographic Service Area

The Central Region is served by the East Central Region Wastewater Treatment Plant (ECR), which is operated by the City of West Palm Beach. The plant is owned by Palm Beach County Water Utilities Department and the cities of West Palm Beach, Lake Worth, Riviera Beach and the Town of Palm Beach. Of the 55 mgd capacity, 12.5 million gallons per day (mgd) capacity is allocated to PBCWUD. The Southern Region is served by Southern Region Wastewater Treatment Plant and two other plants.


MARTIN COUNTY
N
0 3.5 7 Miles
Palm Beach County
Water Utility Service Area
City of Greenacres
June, 2008
Map No. 1 SWR
Municipal Boundary
PBC Water Utility Service Area
Central Service Area
Northern Service Area
Southern Service Area
Western Service Area
Sources :
South Florida Water Management District
PBC Water Utilities Dept
Calvin, Giordano & Associates, Inc.
GIS
Bee Line Hwy
M CANAL
L-10 CANAL
Northern Water Utility Service Area
Western Water Utility Service Area
Central Water Utility Service Area
Southern Blvd
C-51 CANAL
Florida Tpke
PALM BEACH COUNTY
HILLSBORO CANAL
Southern Water Utility Service Area
LOXAHATCHEE WILDLIFE REFUGE
N Interstate 95
C-15 CANAL
HILLSBORO CANAL
L-40 CANAL
CONSERVATION AREA NO. 2
BROWARD COUNTY

Based on the PBCWUD master plan, the city of Greenacres is within both the central and southern regions. The geographic service area of the PBCWUD is shown on Map No. 1.

2) Land Uses Served

PBCWUD serves a variety of existing land uses in its service area including general residential, commercial and industrial land uses. The raw sewage generated throughout the entire service area is typical of domestic sewage generated throughout South Florida. Less than 15 percent of the sewage connections are commercial, and most of the commercial connections, such as retail establishments or restaurants, generate sewage typical of a domestic connection. However, waste strength does vary during the year, mostly as a result of dilution with stormwater during the wet season when infiltration/inflow is highest.

b. Facility Capacity Analysis

The projected sewage generation for the Central and Southern Regions of Palm Beach County service areas will be less than the available capacity of 44.0 mgd outlined in the County's Comprehensive Plan. All County projections account for the current and future residents of the City of Greenacres

c. General Performance - Level of Service

The existing Level of Service of the PBCWUD system~~,~~ is 85 gallons of wastewater produced and treated per capita per day as outlined in Palm Beach County's Comprehensive Plan. This level of service adopted by Palm Beach County will be the same for the City of Greenacres since it is served by PBCWUD.

d. Impact on Natural Resources

1) Treatment Plants

Because all sewage treatment facilities are located outside of the City of Greenacres, there is no real impact on the natural resources of the City. Effluent disposal from the treatment plants is through deep well injection and on-site irrigation.

Permitting of a deep well in Southeast Florida is the responsibility of the Florida Department of Environmental Protection (FDEP) with concurrence of the South Florida Water Management District (SFWMD) and the local County agency. Recently, SFWMD has been discouraging new deep wells for effluent disposal in order to promote effluent reuse options. The long-term permitability of deep well disposal is

questionable at this time without at least some provisions being made for reuse of a portion of the effluent from a given wastewater plant.

2) Septic Tanks

Septic tank systems provide on-site wastewater treatment for both residential and small-scale commercial developments used by a small portion of the City of Greenacres residents. The majority of these residential units are older, single family units. Locations of the septic tank areas are provided on Map No. 2.

Effluent from septic tank systems is discharged to the drain field where it is allowed to percolate into the soil. Soil permeability and depth to the water table are limiting factors on septic tank performance and may require construction of elevated drain fields to ensure adequate performance.

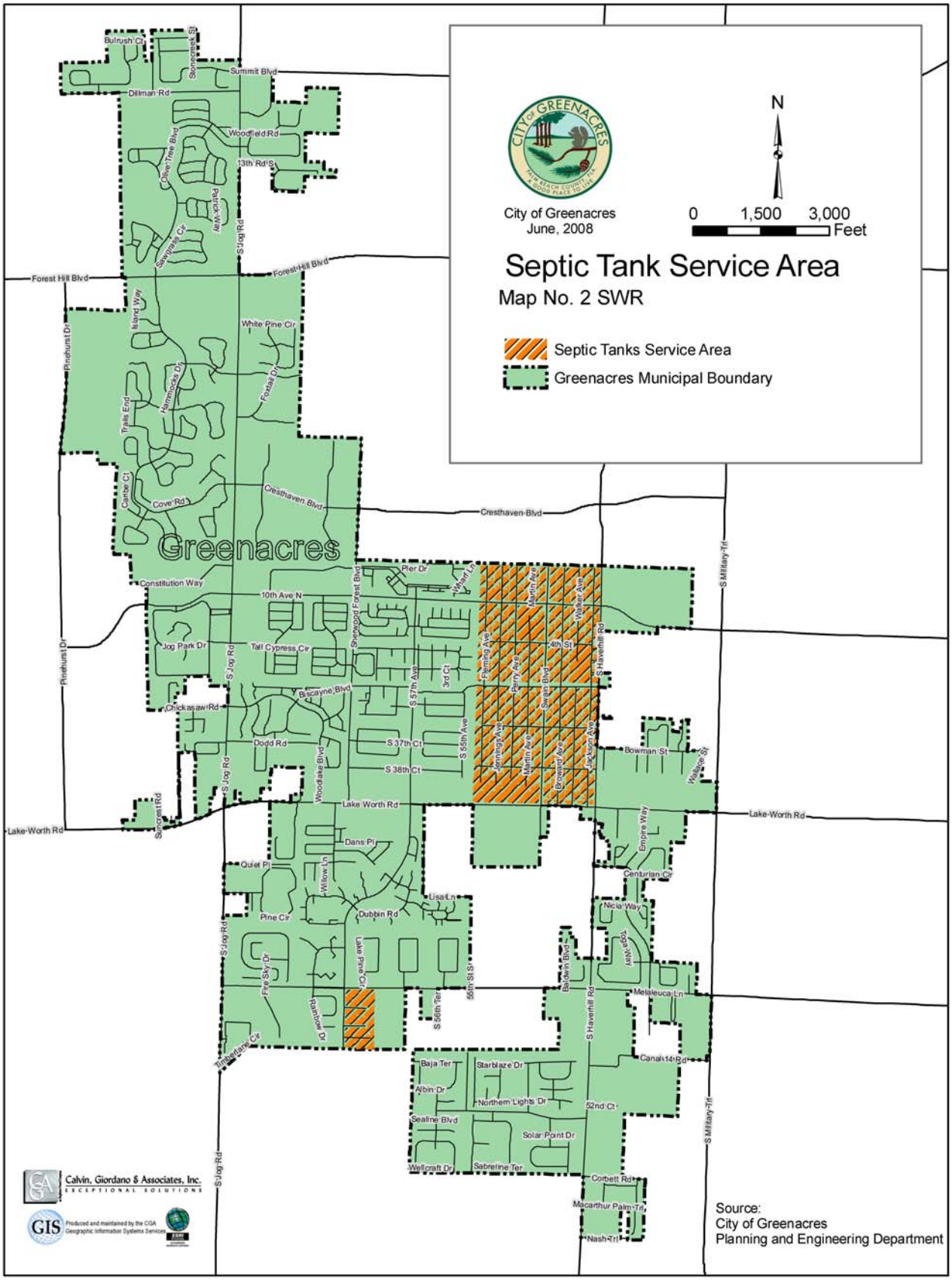
a) Suitability of Soils

Favorable soil properties and site features are needed for proper functioning of septic tank/drain absorption fields. "Septic tank absorption fields are subsurface systems of tile or perforated pipe that distribute effluent from a septic tank into the natural soil." Properties that affect absorption of effluent are:

1. permeability
2. depth to seasonal high water table
3. depth to bedrock
4. susceptibility to flooding

Basinger (Ba) and Myakka (MK) are the two types of soil identified by the U.S. Department of Agriculture, Soil Conservation Service, (shown on Map No. 6 of the Conservation Element of this plan), which make up the City of Greenacres' septic tank areas. "Both soils have a septic tank absorption field rating of severe," due to the high water table and contamination of local ground water.

The soil survey rates all soils within the county as having moderate or severe limitations for septic tank drainage fields. Both ratings indicate that special planning, design or maintenance is needed to overcome the limitations, with possible significant increased construction cost and maintenance requirements for severe conditions. The soil survey provides detailed soil maps suitable for determining specific site limitations and are found in the Future Land Use Element of this Plan.


City of Greenacres
June, 2008
N
0 1,500 3,000
Feet
Septic Tank Service Area
Map No. 2 SWR
Septic Tanks Service Area
Greenacres Municipal Boundary
Greenacres
Summit Blvd
Dillman Rd
Woodfield Rd
13th Rd S
Forest Hill Blvd
White Pine Cir
Cresthaven Blvd
Constitution Way
10th Ave N
Jog Park Dr
Tall Cypress Cir
Biscayne Blvd
Chickasaw Rd
Dodd Rd
S 37th Ct
S 38th Ct
Lake Worth Rd
Dans Pl
Quiet Pl
Pine Cir
Dubbin Rd
Lisa Ln
Nicia Way
Melaleuca Ln
Canal 14 Rd
Baja Ter
Starblaze Dr
Albin Dr
Northern Lights Dr
52nd Ct
Sealine Blvd
Solar Point Dr
Wellcraft Dr
Sabreline Ter
Corbett Rd
Macarthur Palm Trl
Nash Trl
Bowman St
Empire Way
Centurian Ct
Pier Dr
Ward Ln
Martin Ave
Walker Ave
Fleming Ave
Perry Ave
Swain Blvd
4th St
Jackson Ave
Broward Ave
Jennings Ave
S Haverhill Rd
S Military Trl
S Jog Rd
Pinehurst Dr
Woodlake Blvd
Sherwood Forest Blvd
S 57th Ave
S 55th Ave
3rd Ct
Wallace St
Sunset Rd
Lake Worth Rd
Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS
GIS
Produced and maintained by the CGA Geographic Information Systems Services
Source:
City of Greenacres
Planning and Engineering Department

b) Future Conditions

Some of the septic tank areas in the City could represent a potential health risk where water wells are involved. However, this situation has been addressed through the installation of a water distribution system in the original section of the City. The City of Greenacres encourages the use of a sanitary sewer system over septic tank use. However, the rate which septic tank conversion will occur is unpredictable at this time. Factors which could influence this conversion are:

1. availability of sanitary sewer service
2. the threat or occurrence of a public health hazard, and/or
3. financing.

Few additional septic tanks are anticipated to be approved in the City. As growth continues, developers will be required to connect to the PBCWUD Systems. Since treatment plant capacities were based on total population figures, sufficient treatment plant capacity will be available to accommodate the additional waste flows generated from these septic tank conversions.

e. Regulatory Framework

Favorable soil properties and site features are needed for proper functioning of septic tank/drain absorption fields. "Septic tank absorption fields are subsurface systems of tile or perforated pipe that distribute effluent from a septic tank into the natural soil." 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 areawide waste treatment and management programs to ensure adequate control of sources 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 17-6, FAC. These rules apply to facilities which treat flows exceeding 5,000 gallons per day for domestic establishments, 3,000 gallons per day for food service

establishments, and where the sewage contains industrial or toxic or hazardous chemical wastes. The Florida Department of Health and Rehabilitative Services (HRS) regulates septic tank and drain field installation within the state. These requirements have been adopted by rule in Chapter 10D-6, FAC.