DIRECT TESTIMONY OF BRUCE KENNEDY

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

ON BEHALF OF

PASCO COUNTY, FLORIDA

DOCKET NO. 090478-WS

COM ____
APA ____
ECR ____
GCL ____
RAD ____
SSC ____
ADM ____
OPC ____
CLK ____

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS

A. Bruce Kennedy, Pub. Wks./Utilities Bldg., S-213, 7530 Little Road, New Port Richey, FL 34654-5598.

Q. BY WHOM ARE YOU EMPLOYED AND WHAT POSITION DO YOU HOLD?

A. Pasco County, Assistant County Administrator, Utilities Services.

Q. PLEASE DESCRIBE YOUR DUTIES AND RESPONSIBILITIES IN THAT POSITION.

A. The focus of responsibility of my position is in directing the County service for water, wastewater, reclaimed water, solid waste management, and streetlight assessments. The programs and services include management of an annual budget in excess of $250,000,000.00. In addition to managing the Utilities Services Branch Administration, the position includes service as a member of the County Development Review Committee.

Q. PLEASE DESCRIBE YOUR EDUCATION AND PROFESSIONAL EXPERIENCE.

A. For over 30 years, I have worked in the area of public water and wastewater utility system management, planning, expansion and operations. I am a registered, professional engineer in the State of Florida, and have been registered since 1977. I obtained a BS in Engineering from USF in 1972. My resume is attached as exhibit BEK-1.

Q. ARE YOU SPONSORING ANY EXHIBITS IN THIS CASE?

A. In addition to my resume, I am sponsoring exhibit BEK-2, which is a 2009 engineering report ("Report") that was prepared in furtherance of a revenue bond issuance.

Q. WHAT IS THE NATURE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. My testimony relates to the water and wastewater utility services provided by Pasco County and the deficiencies in Skyland's application from a utility and engineering perspective.

Q. DESCRIBE THE SERVICES PROVIDED BY PASCO COUNTY.

A. Pasco County, Florida, established in 1887, contains approximately 745 square miles located along the Gulf of Mexico immediately north of the Tampa Bay area. The Pasco County Utilities Services Branch (PCUSB) was established in 1979 for the purpose of constructing, operating, and maintaining public potable water and centralized wastewater treatment facilities (WWTFs). PCUSB provides water, wastewater, and reclaimed water service as further described in BEK-2.

Q. DESCRIBE THE POTABLE WATER SUPPLY FACILITIES USED BY PASCO COUNTY TO PROVIDE POTABLE WATER TO ITS CUSTOMERS.

A. Since October 1998, PCUSB has been receiving potable water from Tampa Bay Water (TBW), the regional bulk water provider. Of the approximately 39.9 million gallons per day (MGD) of permitted potable water (including water purchased from TBW) supplied to the unincorporated areas of the county, an estimated 29.7 MGD, or 74 percent, comes from public water systems and 10.2 MGD, or 26 percent, comes from private water systems. Although PCUSB obtains approximately 80 percent of its raw water from TBW, the County owns and operates several groundwater supply wells with treatment that are transmitted directly into the distribution system, or provides raw water supply to PCUSB's water treatment facilities (WTFs). Raw water and water treated by TBW enters PCUSB's water storage and distribution system by four interconnects located at New Port Richey Maytum Plant (Starkey), US 41 (Cypress Creek), State Road 54 (Odessa), and Lakebridge. PCUSB also has three interconnects to obtain water from the City of Zephyrhills and Dade City, when needed, at Joylan, Florida

Estates, and Elred. PCUSB owns and operates 58 water supply wells and 12 treatment facilities to meet its existing average daily consumption of 29.26 MGD. The water distribution system consists of approximately 4,000 miles of water distribution lines, varying in diameter between 2- to 36-inches, 4,730 fire hydrants, 14,323 valves and associated appurtenances. Approximately 13 million gallons of storage provides adequate system flow, storage, and pressure.

Q. DESCRIBE THE WASTEWATER FACILITIES USED BY PASCO COUNTY TO PROVIDE WASTEWATER SERVICES TO ITS CUSTOMERS.

A. PCUSB owns and operates approximately 550 wastewater pump stations throughout its service area. The wastewater system currently serves a land area of more than 280 square miles, which is approximately 38 percent of the total area of the County. In 2008, there were approximately 77,598 wastewater service connections within the system with an average daily demand of 19.09 MGD. PCUSB's collection system consists of approximately 1,200 miles gravity lines, 867 miles of force mains, 18,404 manholes, 1,135 valves, and associated appurtenances. PCUSB owns and operates an interconnected system of WWTFs that collectively treat the sewage generated within its service area. There are approximately 77,598 wastewater and 11,315 water reuse connections within the County wastewater system, as of September 30, 2008. In 2008, PCUSB served approximately 77,598 wastewater service connections, which include single-family, multi-family, and commercial customers.

Q. ARE YOU FAMILIAR WITH THE SERVICE TERRITORY IN WHICH SKYLAND SEEKS TO PROVIDE WATER AND WASTEWATER SERVICES?

A. Yes.

Q. DOES PASCO COUNTY PROVIDE WATER OR WASTEWATER SERVICES IN THE SERVICE TERRITORY PROPOSED BY SKYLAND?

A. No.

Q. WHY NOT?

A. There are numerous reasons why we are not serving this area. We have not received any requests for service. The area is adequately and appropriately served by private water wells and individual septic tanks. The Comprehensive Plan does not forecast any need for central water and sewer service in the area and the Plan also prohibits such service in the area for numerous reasons as explained by Richard Gehring, Planning and Growth Management Administrator, in his testimony. Additionally, it is not efficient, cost-effective, good utility practice, or in the public interest to provide central water and sewer to such low density (one unit per 10 cares) as is proposed by Skyland. Skyland's proposed water and sewer rates will be substantially higher than those charged by Pasco County Utilities. It is not efficient, cost-effective, good utility practice, or in the public interest to provide central water and sewer to such widespread, non-contiguous parcels of property. Generally, density of at least 2 units per acre is necessary for central water and sewer service to be economical.

Q. HAS PASCO COUNTY RECEIVED ANY REQUEST FROM A PERSON OR ENTITY WITHIN THE PROPOSED SERVICE TERRITORY TO PROVIDE WATER OR WASTEWATER SERVICES?

A. No.

Q. HAS PASCO COUNTY RECEIVED ANY INQUIRY FROM A DEVELOPER REGARDING THE AVAILABILITY OF WATER/WASTEWATER SERVICES IN THE PROPOSED SKYLAND SERVICE TERRITORY?

A. No.

Q. ARE YOU AWARE OF ANY EFFORTS TO DEVELOP THE PROPERTY WITHIN THE PROPOSED SKYLAND SERVICE TERRITORY?

A. No.

Q. WHERE IS THE PROPOSED SKYLAND TERRITORY IN RELATION TO THE AREAS CURRENTLY SERVED WITH WATER AND WASTEWATER BY PASCO COUNTY?

A. PCU maintains an existing water system less than 0.5 miles to the East from the proposed area and PCU maintains other water facilities within 1.53 miles from the Skyland proposed area and wastewater facilities with 2.54 miles from the proposed area.

Q. DOES PASCO COUNTY HAVE PLANS TO PROVIDE WATER AND WASTEWATER SERVICES IN THE PROPOSED SKYLAND SERVICE TERRITORY?

A. We have no plans to serve most of these parcels because they would be adequately and efficiently served by individual well and septic consistent with the Comp Plan but one of the parcels (Parcel ID 4) of the proposed service area is within a designated Employment Center for which PCU plans to provide water and wastewater service consistent with the Pasco County Strategic and Comprehensive Plans. The proposed certificate, if granted, will result in private water and wastewater utility service to County citizens that will be significantly more costly than service that could be provided through individual wells and septic systems or that could be provided by Pasco County Utilities.

Q. IN YOUR OPINION, IS THERE A CURRENT NEED FOR WATER/WASTEWATER SERVICE IN THE PROPOSED SKYLAND SERVICE TERRITORY?

A. No.

Q. WHAT IS THE BASIS OF THIS OPINION?

A. Again, we have not received a request for service in the area or nearby and the existing buildings and land uses are adequately served by individual wells and individual septic tanks. Skyland's application contains no specific information as to need and the future development and bulk sales noted in the application is purely speculative at this time. The only development projects (Trilby Estates, Saran Ranch and Pine Ridge Estates) approved in the vicinity of Skyland's proposed service area will be developed on individual well and septic, consistent with the Pasco Comprehensive Plan. Furthermore, there are numerous private residences that would be encircled by Skyland's proposed service area (particularly Parcels ID 9, 11, 12A and 12B) and these property owners, currently on private well and septic, have not asked for central service.

Q. IF SKYLAND'S APPLICATION IS GRANTED, WOULD THE RESULTING SKYLAND SYSTEM BE IN COMPETITION WITH, OR BE A DUPLICATION OF, ANOTHER SYSTEM?

A. PCU maintains an existing water and wastewater system less than 0.5 miles from the proposed area and PCU maintains other water facilities within 1.53 miles from the Skyland proposed area. These facilities could be extended to provide service to proposed service area, if service was needed. Additionally, one of the parcels (Parcel ID 4) of the proposed service area is within a designated Employment Center for which PCU plans to provide water and wastewater service consistent with the Pasco County Strategic and Comprehensive Plans. *See* Exhibit 3, Northeast Pasco Future Land Use Map. Furthermore, Pasco has established as its service territory the entire unincorporated area of the County not currently served by a legally existing

private utility. *See*, § 110-28, Pasco County Code. Accordingly, Skyland's proposed service will be in competition with, or a duplication of, the PCU system.

Q. DOES THAT CONCLUDE YOUR TESTIMONY?

A. Yes.

BRUCE E. KENNEDY, P.E.
7530 Little Road
New Port Richey, FL 34654
(727) 847-8145

EDUCATION:

Bachelor of Science in Engineering
University of South Florida, 1972

Master of Science in Engineering – Course Work
University of South Florida

REGISTRATION:

Registered Professional Engineer
Florida, 1977

PROFESSIONAL HISTORY:

Over thirty (30) years of increasingly responsible experience in public water and wastewater utility system management, planning, expansion and operations. Experienced civil and environmental engineer with emphasis in water supply, wastewater treatment, re-use, drainage/stormwater management, water resources and highway design. Significant engineering management responsibilities have included staffing and development of a major regional consulting engineering office operation; directing the management, expansion and operation of major public water and wastewater utilities; and general management and operational responsibility for Florida's largest Regional Water Supply Authority.

EXPERIENCE:

2004 to Present
Assistant County Administrator
Pasco County Services Branch

The Assistant County Administrator for public utilities is a highly responsible administrative and management position appointed by the County Administrator and confirmed by the Board of County Commissioners. The focus of responsibility is in directing the County service for water, wastewater, reclaimed water, solid waste management, and streetlight assessments. The programs and services include management of an annual budget in excess of $250,000,000.00. In addition to managing the Utilities Services Branch Administration, the position includes service as a member of the County Development Review Committee.

1996 to 2004
Utilities Director
Pasco County Utilities Department

Responsible for the management and operation of the Pasco County public utilities system, which provides water, wastewater, and reclaimed water services to a rapidly growing customer base of over 70,000 accounts. Directs a staff of over 200 personnel actively involved in administration services, planning, engineering, construction, permitting, operation, and maintenance of the public utility system. Responsible for major facility expansion, budget, implementation of Board policy, and interaction/liaison with public/regulatory agencies regarding all aspects of utility system management and operation.

1992 to 1996
Director of Resource Management/Interim General Manager (4/94-4/95)
West Coast Regional Water Supply Authority

Served as the Authority's General Manager on an interim basis, pending recruitment of a new General Manager. The General Manager is appointed by the Board as the Chief Executive Officer for the Authority and is directly responsible for achieving the Authority's water supply mission. The General Manager provides leadership to develop and direct the organization in areas of administration, planning, permitting, engineering, development, and facility operations. Responsible for budget, implementation of Board policy, and extensive communication and interaction with the Board of Directors, public agencies, and member governments regarding the Authority's activities, programs, and water supply issues.

In position of Director of Resource Management, responsible for managing and directing the operations and maintenance activities for all facilities and equipment utilized at the Authority. Duties included water supply, treatment, and delivery systems management. Annual operating budget responsibilities are in excess of $8 million. Perform liaison and water delivery coordination with member utility system managers. Perform special project advisory functions and regulatory liaison. Serve as the coordinator and liaison for the Authority pipeline litigation activities. Oversee and manage Authority fleet management and risk management programs.

1985 to 1992
Vice President/Regional Manager
Dyer, Riddle, Mills & Precourt, Inc.

Manager of the Tampa Regional office of Dyer, Riddle, Mills & Precourt, Inc., (DRMP). Responsibilities included business development and marketing, supervising production of all work executed by the regional office, and profitability of the operation. Duties included staffing, office administration, and contracting. Directly responsible for environmental, transportation, civil and utilities management related project activities executed through the regional office.

1983 to 1985
Director of the Department of Water & Wastewater Utilities
Hillsborough County

Responsible for the management and operation of the Hillsborough County Public Utilities system. Directed a staff of approximately 300 personnel with functional responsibilities in the

areas of customer service; administration and fiscal services; engineering services, including planning, design, and construction management; and facilities operation and maintenance.

Responsible for private utility system franchise administration. Served as a liaison with all local, State, and Federal agencies directly involved in water and wastewater matters. Actively involved in establishing and implementing a major program of expansion and improvement of the County's water and wastewater system, including securing necessary financing for the expansion with utility revenue bonds, user fees, connection fees, and Federal grant assistance.

1977 to 1983
Deputy Director & Chief Engineer
City of Tampa Water Department

In position of Deputy Director, served as principal assistant to the Director in all aspects of management, personnel, regulatory permitting, engineering, budget, and financial matters of the Water Department. As Chief Engineer, directed all engineering programs, which included modernizing, upgrading, and expansion of water system facilities. Project responsibilities included regulatory and environmental permitting and all phases of planning, design, and construction of treatment plant renovations and expansion, pumping station renovations, and water transmission and distribution pipeline/storage improvements for the City's water system.

1975 to 1977
Water Resources Engineer – Planning and Programming Division
Southwest Florida Water Management District

Responsible for all water resources data acquisition programs throughout the water management district, and served as the program director for the United States Geological Survey (USGS) cooperative program. Water Resources Engineering duties included directing flood forecasting, watershed modeling, regulatory data collection, and reporting.

1973 to 1975
Project Engineer
Charter Engineering – Tampa, Florida

Responsible for execution of major civil engineering projects with emphasis on computer modeling. Projects involved: environmental impact studies for highways, development of regional impact studies for major land development projects, highway design, traffic studies, bridge hydraulics studies, drainage studies, noise and air pollution assessments, and land development engineering.

1970 to 1973
Professional Engineer Trainee/Co-op Student
Florida Department of Transportation

Performed training and work assignments in the areas of transportation planning, route surveys, design, right-of-way, construction maintenance, and program management. Performed assignments at the resident construction office, district office, and central office levels of the Department.

PROFESSIONAL AFFILIATIONS:

American Society of Civil Engineers
American Water Works Association
Water Environment Federation
American Water Resources Association
National Society of Professional Engineers
Florida Engineering Society

Final Report

Pasco County Utility Services Branch Engineering Report for Revenue Bond Issuance

Prepared for

Pasco County Utility Services Branch

New Port Richey, FL

August 2009

CH2MHILL
4350 W. Cypress Street
Suite 600
Tampa, FL 33607

Final Report

Pasco County Utility Services Branch Engineering Report for Revenue Bond Issuance

Submitted to

Pasco County Utility Services Branch

August 2009

I certify that the statements made in this Report are true, correct and complete to the best of my knowledge and belief.

Thomas J. Helgeson, P.E.
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Acronyms and Abbreviations

AADF	annual average daily flow
CIP	Capital Improvement Program
FDEP	Florida Department of Environmental Protection
gpd	gallons per day
MGD	million gallons per day
OROP	Optimized Regional Operations Plan
PCMRS	Pasco County Master Reuse System
PCUSB	Pasco County Utility Services Branch
RIB	Rapid Infiltration Basin
RMWP	Reuse Master Water Plan
SWFWMD	Southwest Florida Water Management District
TBW	Tampa Bay Water
WTF	Water Treatment Facility
WUP	Water Use Permit
WWTF	Wastewater Treatment Facility

1. Introduction

Pasco County, Florida, established in 1887, contains approximately 745 square miles located along the Gulf of Mexico immediately north of the Tampa Bay area. With an estimated current population of over 462,000 (US Census Bureau, 2008), Pasco is Florida's twelfth most-populated county (US Census Bureau, 2008). Pasco County, the sixth fastest-growing county in the State of Florida, and the fifty-second fastest-growing county in the nation[1], has accommodated rapid growth over the past several years. Since 2000, the overall population of the County has grown by more than 34 percent. The majority of this growth has occurred in the unincorporated central and eastern portions of the County.

Much of the growth in Pasco County has been due to residential construction. From 2005 to 2008, the volume of new housing starts decreased significantly, reflecting a downturn in home sales. This overall slowdown in growth is supported by the decreased number of building permits issued during this period, from 53,140 during 2005 to 26,708 during 2008. Considering current trends and the absence of new significant development approval requests, it is believed that the near-term growth in Pasco County will be moderating and will not mimic the rapid growth experienced in previous years.

1.1 Pasco County Utilities Services Branch

The Pasco County Utilities Services Branch (PCUSB) was established in 1979 for the purpose of constructing, operating, and maintaining public potable water and centralized wastewater treatment facilities (WWTFs). The policy of PCUSB was to acquire significant private water systems in order to develop a centralized, countywide public treatment and distribution system. It has acquired private potable water facilities and planned for centralized water treatment facilities. Where municipal facilities can better supply water services, agreements that allow for municipal service within unincorporated areas were reached. The Cities of New Port Richey, Zephyrhills, and Dade City currently extend service into unincorporated County areas.

Since October 1998, PCUSB has been receiving potable water from Tampa Bay Water (TBW), the regional bulk water provider. Of the approximately 39.9 million gallons per day (MGD) of permitted potable water (including water purchased from TBW) supplied to the unincorporated areas of the county, an estimated 29.7 MGD, or 74 percent, comes from public water systems and 10.2 MGD, or 26 percent, comes from private water systems (Pasco County, 2006). PCUSB has also sought to acquire the larger, private wastewater systems in the County to develop a network of subregional WWTFs to provide service for residents of unincorporated Pasco County. To achieve this objective, the County passed a $39M bond issue to purchase selected, private wastewater faculties and to plan for future expansion needs and facilities.

[1] Based on the numerical increase in population from 2000 to July 2007 (US Census Bureau, 2008)

In January 1995, approximately 36.3 MGD of wastewater was generated within the unincorporated area of the County. Public collection systems provided approximately 10.6 MGD of the permitted capacity for wastewater disposal. The majority of the 10.6 MGD permitted capacity was provided by PCUSB, with approximately one MGD provided by municipalities by interlocal agreements. Of the total amount of 36.3 MGD, approximately 25.7 MGD of the permitted capacity for wastewater disposal was available through private wastewater facilities, which included approximately 14.8 MGD provided through private septic tanks (Pasco County, 2006).

PCUSB has taken significant measures toward achieving the objectives of providing public potable water and centralized WWTFs within the unincorporated area of the County. Exhibit 1-1 depicts the current PCUSB levels of service in the total county area, based on estimated service areas.

EXHIBIT 1-1
PCUSB Service Areas in Unincorporated Areas of Pasco County

PCUSB System	Service Area (mi^2)	Percent of Total County Area
Water Systems	284	38%
Wastewater Systems	280	38%
Reuse Water	156	21%

Source: Pasco County, 2008

2. Existing PCUSB Systems

2.1 Water Systems

2.1.1 Tampa Bay Water

Tampa Bay Water (TBW) is a special district of the State of Florida funded by user fees for the sale of water to participating government agencies. It created an alliance with the Counties of Pasco, Hillsborough, and Pinellas, and the Cities of Tampa, St. Petersburg, and New Port Richey through interlocal agreements for the bulk sale of water at wholesale rates. The member agencies are represented on TBW's Board of Directors through two seats for each County and one seat for each City.

The main goals of the creation of the district was to reduce groundwater pumping from 11 long-producing well fields, develop new water supply sources, end litigation, and obtain funding from the Southwest Florida Water Management District (SWFWMD).

TBW and the participating agencies formed a partnership with SWFWMD to obtain funding for long-term development of alternative water supplies necessary to meet future demands of the region. TBW obtains raw water from groundwater, fresh surface water, and the waters of Tampa Bay through desalination.

SWFWMD executed a Consolidated Permit for the 11 Northern Tampa Bay well fields operated by TBW. Operation of these 11 well fields is governed by the Optimized Regional Operations Plan (OROP) approved by TBW's Board of Directors and SWFWMD's Governing Board. The OROP uses forecasts of surface water flows, current groundwater level conditions, and rainfall data to determine rotation of production among available supplies to meet demands in an environmentally sound manner.

TBW currently provides water supply for member governments that serve approximately 2.4 million residences and transmits about 175 MGD. Demand projections indicate an additional 12 MGD will be needed by 2012 and an additional 45 MGD will be needed by 2025 to meet the growing needs within the Hillsborough, Pasco, and Pinellas County region (Tampa Bay Water, 2008).

TBW is planning and performing system enhancements in preparation to meet these growing demands.

2.1.2 Water Supply

The unincorporated areas of Pasco County are served by both public and private water systems. The public water systems include PCUSB and the municipalities of New Port Richey, Dade City, and Zephyrhills. Of the public systems, PCUSB supplies the greatest amount of potable water.

Although PCUSB obtains approximately 80 percent of its raw water from TBW, the County owns and operates several groundwater supply wells with treatment that are transmitted

directly into the distribution system, or provides raw water supply to PCUSB's water treatment facilities (WTFs). Raw water and water treated by TBW enters PCUSB's water storage and distribution system by four interconnects located at New Port Richey Maytum Plant (Starkey), US 41 (Cypress Creek), State Road 54 (Odessa), and Lakebridge. PCUSB also has three interconnects to obtain water from the City of Zephyrhills and Dade City, when needed, at Joylan, Florida Estates, and Elred. PCUSB owns and operates 58 water supply wells and 12 treatment facilities to meet its existing average daily consumption of 29.26 MGD.

2.1.3 Water Treatment Facilities

The raw water transmitted to the WTFs and the distribution system is of high quality and enters the water system in its raw form or is disinfected at the well using liquid sodium hypochlorite solution or chloramines. PCUSB prepares annual water quality reports to publicize compliance with all drinking water standards. Exhibit 2-1 lists the water supply and treatment facilities and permitted capacities.

EXHIBIT 2-1
Pasco County Water Supply and Treatment Facilities and Permitted Capacities as of August 1, 2008

Facility	SWFWMD Withdrawal Permit Number	Permitted Capacity (MGD)	FDEP Facility Treatment Permit No.	Permitted Capacity (MGD)
West Service Area				
Little Road WTP[1]		20.20	651 1361	20.20
TBW Interconnect-Maytum Plant (Starkey)				
Autumn Oaks WTP/Well	20000266.05	0.55	651 1361	0.55
Kent St Well	20000266.05	0.20		
John St Well	20000266.05	0.20		
Southwest WTP[2]			651 1361	4.00
Mockingbird No. 7 Well	20000266.05	0.25		
Mockingbird No. 8 Well	20000266.05	0.25		
Mockingbird No. 9 Well	20000266.05	0.25		
Blue Bird No. 20 Well	20000266.05	0.20		
Tilson No. 25 Well	20000266.05	0.20		
Moog Rd No. 1 and IA Wells	20000266.05	0.25 ea		
Grand Blvd No. 1 Well	20006028.004	0.02		
Perrenial Dr No. 2 Well	20006028.004	0.10		
Perrenial Dr No. 4 Well	20006028.004	0.05		
Grand Blvd No. 5 Well	20006028.004	0.10		
Danger Dr No. 6 Well	20006028.004	0.10		

EXHIBIT 2-1
Pasco County Water Supply and Treatment Facilities and Permitted Capacities as of August 1, 2008

Facility	SWFWMD Withdrawal Permit Number	Permitted Capacity (MGD)	FDEP Facility Treatment Permit No.	Permitted Capacity (MGD)
Milestretch Dr No. 8 Well	20006028.004	0.074		
Mariposa Dr No. 10 Well	20006028.004	0.02		
Grand Blvd No. 11 Well	20006028.004	0.054		
Quail Ridge	20000266.05	0.08		0.65
Tampa Bay Water Interconnect US 41 (Cypress Creek)		18.0	651 2230	18.0
Tampa Bay Water Interconnect SR 54 (Odessa)		17.5	651 2230	17.5
Central Service Area				
Pasco One Center WTP/Well	2000230.005	0.868	651 1573	1.44
Gowers Corner No. 1 and No. 2 WTP/Wells	200025.06	0.30 ea	651 1573	0.293 ea
Double Branch Well	200025.06	0.035		
Saddlebrook Well	200025.06	0.02		
Williams Acres No. 4 Well	200025.06	0.008		
Lake Padgett A Well	200025.06	0.035		
Lake Padgett B Well	200025.06	0.035		
Lake Padgett C Well	200025.06	0.035		
Lake Jovita No. 1 and No. 2 WTP/Wells	20011863.001	0.327 ea	651 5250	0.737
Tampa Bay Water Interconnect Lake Bridge		17.5	651 5234	17.5
Southeast Service Area				
Southeast WTP(3)	20005245.008	1.10	651 2685	5.00
Lake Bernadette No. 1 Well	20005245.008	0.05		
Lake Bernadette No. 2R Well	20005245.008	0.59		
Oaks Royal Well	20005245.008	0.25		
Betmar Arrowhead Well	20005245.008	0.21		
Betmar No. 8 and Flint Wells	20005245.008	0.15 ea		
Betmar Kay St Well	20005245.008	0.15		
Shady Oaks No. 1 and No. 2 Wells	20005245.008	0.076 ea		

EXHIBIT 2-1
Pasco County Water Supply and Treatment Facilities and Permitted Capacities as of August 1, 2008

Facility	SWFWMD Withdrawal Permit Number	Permitted Capacity (MGD)	FDEP Facility Treatment Permit No.	Permitted Capacity (MGD)
Williams New River No. 1 and No. 2 Wells	20005245.008	0.03/0.05		
Williams Grove No. 1 and No. 2 Wells	20005245.008	0.06 ea		
Palmview Gardens Well	20005245.008	0.16		
Tropical Acres Well	20005245.008	0.05		
Northeast Service Area				
Northeast #1–Trilby WTP/Well	20611.05	0.052	651 2200	0.07
Northeast #1-Hillcrest No. 1 Well	20611.05	0.63 ea	651 2200	0.075
Northeast #1-Lacoochee WTP/Well	20611.05	0.047	651 2200	0.065
Hickory Hill No. 1 and No. 2 WTP/Wells	20614.02	0.047 ea	651 0760	0.12
Pasadena Shores No. 1 and No. 2 WTP/Wells	206010.0004	0.0119 ea	651 2205	0.016 ea
Parkview WTP/Well	NA	0.05	651 2204	0.05
Blanton WTP/Well			651 2033	0.027
Southeast Central Service Area				
Pinebreeze WTP/Well	NA	0.02	651 1388	0.2
Southeast #2-The Ponds WTP/Well	200006027.003	0.035	651 4120	0.12
Southeast #2-The Groves WTP/Well	200006027.003	0.01	651 4120	0.024
Sunburst No. 1 and No. 2 WTP/Wells	2007604.002	0.018/0.075	651 1745	0.072/0.18
Interconnects				
Joylan-City of Dade City			651 2200	
Parkview-City of Dade City				
Eldred-City of Dade City			651 0518	
Florida Estates-City of Zephyrhills			651 0603	
Court St.-City of Zephyrhills				

(1)Finished water is supplied at the Little Road WTP by TBW interconnect (Starkey) at the New Port Richey Maytum Plant (Starkey). The permitted capacity for withdrawal from this interconnect is predicated by FDEP permitted treatment capacity of the WTP.

(2)Treatment Plant is supplied by raw water by Pasco County owned wells in the service area.

(3)Treatment Plant is supplied by raw water by Pasco County owned wells in the service area.

The aggregate WTF permitted withdrawal capacity is approximately 82.2 MGD, of which PCUSB is permitted for an average daily withdrawal capacity of approximately 9.0 MGD and TBW is permitted to supplement PCUSB with an additional average daily withdrawal capacity of 73.2 MGD.

A summary of the water system is provided in Exhibit 2-2, below.

EXHIBIT 2-2
PCUSB Water System Summary

Pasco County Service Area Facts	
Population Served	239,000
Number of Service Connections	92,572
Number of Treatment Facilities	6 major and 12 minor facilities
Total Water Permitted Withdrawal Capacity	82.2[1] MGD
Daily Average Water Consumption	29.26 MGD
Number of Ground Water Wells	58
Total Water Well Permitted Capacity	9.0 MGD
Miles of Water Mains (greater than 4 in.)	2,906
Number of Fire Hydrants	4,730

[1]Pasco County = 9.0 MGD and TBW = 73.2 MGD

2.1.4 Water Distribution

The water distribution system consists of approximately 4,000 miles of water distribution lines, varying in diameter between 2- to 36-inches, 4,730 fire hydrants, 14,323 valves and associated appurtenances. Approximately 13 million gallons of storage provides adequate system flow, storage, and pressure.

2.1.5 Water System Demands

Exhibit 2-3 below shows the categorical breakdown of PCUSB's water use for the period from September 2004 through September 2005.

EXHIBIT 2-3
Categorical Water Use, 2004-2005
Customer Flows

Type of commercial	Flow (1000 gal/yr)	% of Overall Total
Retail	216,544	2.89
Irrigation	166,761	2.23
Other	108,263	1.45
Service	106,110	1.42
Education	83,761	1.12
Full service restaurant	77,368	1.03
Office	71,018	0.95
Nursing home	64,253	0.86
Hospital	61,117	0.82
Recreation	45,732	0.61
Church/vet	28,429	0.38
Single service restaurant	17,995	0.24
Laundromat	17,490	0.23
Effluent	10,024	0.13
Medical	9,201	0.12
Fire hydrants	2,438	0.03
Clinics	1,226	0.02
Hydrant meters	474	0.01
Fire lines	419	0.01
Commercial Total	1,088,623	14.53
Residential Total	6,403,162	85.47
Total	**7,491,785**	**100.00**

PCUSB serves 92,572 water service connections, which included single-family, multi-family, and commercial customers. In 2008, the top ten water users consumed approximately 1.5 percent of the total daily average water consumption of 29.26 MGD. Exhibit 2-4 indicates the 2008 top ten water customers.

EXHIBIT 2-4
Top Ten Water Customers (2008)

Customer	Annual Water Consumption (1000 gallons)
Board of County Commissioners	38,708
Southport Springs	33,115
Regional Medical Center	21,110
Seven Springs Villas	16,116
Calienta Resort LLC	15,781
Trail Port Richey	15,532
Saddlebrook Resort	13,476
Kimmons	12,465
Oak Trails Apartments	10,929
Word of Life	5,690

Exhibit 2-5 shows the historical average daily demand for the water system for the period of 1999 through 2008. The design water system peaking factor (peak day to average day) is 1.67 for residential service and 1.25 for bulk service customers as set in the Standards for Design and Construction of Water, Wastewater and Reclaimed Water facilities.

The water demand was relatively consistent from the years of 1999 to 2004. Between the years of 2004 and 2007, the County experienced a 46 percent increase in demand. This rate of increase is anticipated to have peaked and future projected demands are anticipated to stabilize at the current demand rate. Future demands may be reduced given PCUSB's conservation policies and efforts toward expanding its reclaimed water system to provide reuse water for irrigation to offset potable water demand.

EXHIBIT 2-5
Historical Average Daily Water Demand

Fiscal Year Ended	Number of Service Connections	Average Daily Consumption (MGD)
1999	52,248	18.9
2000	55,112	16.2
2001	58,687	18.7
2002	62,441	19.5
2003	67,090	19.6
2004	77,237	22.8

EXHIBIT 2-5
Historical Average Daily Water Demand

Fiscal Year Ended	Number of Service Connections	Average Daily Consumption (MGD)
1999	52,248	18.9
2000	55,112	16.2
2001	58,687	18.7
2005	83,224	21.6
2006	88,911	25.6
2007	92,134	24.9
2008	92,572	25.7

Maximum permitted withdrawal capacity of treatment facilities 82.2 MGD (PCUSB and TBW)

2.2 Wastewater Systems

2.2.1 Wastewater Collection

PCUSB is one of many public and private wastewater systems within the unincorporated County area, including private septic tanks. PCUSB owns and operates approximately 550 wastewater pump stations throughout its service area. The wastewater system currently serves a land area of more than 280 square miles, which is approximately 38 percent of the total area of the County. In 2008, there were approximately 77,598 wastewater service connections within the system with an average daily demand of 19.09 MGD.

Many of the pump stations have been contributed to the utility following design and construction by the development community in accordance with then-current County standards. Other stations have been acquired as a result of the absorption of former privately owned wastewater infrastructure into the County system. A smaller portion of the stations were designed and constructed under the County's continuing Capital Improvement Program (CIP).

PCUSB's collection system consists of approximately 1,200 miles gravity lines, 867 miles of force mains, 18,404 manholes, 1,135 valves, and associated appurtenances.

2.2.2 Wastewater Treatment Facilities

PCUSB owns and operates an interconnected system of WWTFs that collectively treat the sewage generated within its service area. There are approximately 77,598 wastewater and 11,315 water reuse connections within the County wastewater system, as of September 30, 2008.

PCUSB divides its wastewater service area into three regions. Within these regions, several WWTFs provide service for the local service areas. These facilities are summarized in Exhibit 2-6. The seven subregional facilities discharge public access quality reclaimed water into the Pasco County Master Reuse System (PCMRS). The PCMRS is permitted for

26.8 MGD under FDEP Permit No. FLA0127272. In addition, PCUSB has co-funded and shares flows with the City of New Port Richey's WWTF. Currently, 3.0 MGD of capacity is available for PCUSB's use at this facility.

EXHIBIT 2-6
Pasco County Wastewater Treatment Facilities and Permitted Capacities

Facility	Permit Number	Flow (MGD)
Western Service Area		
Deer Park Subregional WWTF	FL0040746	2.00
Embassy Hills Subregional WWTF	FLA012735	3.50
Hudson Subregional WWTF	FLA012738	3.00
Shady Hills Subregional WWTF[1]	FLA012741	2.00
City of New Port Richey WWTF[2]		3.00[3]
Central Service Area		
Land O' Lakes Subregional WWTF	FLA012731	3.50
Eastern Service Area		
Southeast Subregional WWTF	FLA012737	3.00
Wesley Center Subregional WWTF[3]	FLA016094	6.00
Cypress Manor WWTF	FLA012718	0.068
Total Permitted Capacity		**26.07**

[1] Shady Hills WWTF is currently under expansion to 14.0 MGD annual average daily flow (AADF), and is expected to be completed on 03/29/2010.

[2] Under Inter-local Agreement as of 05/14/1996.

[3] Pasco County USB portion only.

The system is designed to be flexible, and certain wastewater flow can be directed to more than one WWTF based on season, capacity, or other operating needs. The majority of the WWTFs were constructed, upgraded, and/or expanded in the 1990s. The Wesley Center Subregional WWTF has recently been expanded and a further increase in permitted capacity has been approved by the FDEP. Final design of the expansion of the Shady Hills Subregional WWTF is finished and construction is in process. Design of the capacity expansion at the Land O' Lakes WWTF is currently being developed.

A summary of the wastewater system is provided in Exhibit 2-7, below.

EXHIBIT 2-7
Wastewater System Summary

Pasco County Service Area Facts	
Est. Population Served	201,755
Number of Service Connections	77,598[4]
Number of Treatment Plants	7 subregional and 1 minor plants
Total Wastewater Design Treatment Capacity	29.07 MGD[1][2][3]
Total Volume of Wastewater Treated, AADF	19.09 MGD
Miles of Gravity Sewers	1,221
Number of Manholes	18,404 (est.)
Number of Sewage Pump Stations	554
Miles of Force Main	867 (est.)

[1] Wesley Center is designed for and operating at 6.0 MGD; however, the plant's permit reflects the construction of a 3.0 MGD upgrade, which will bring capacity to 9.0 MGD in 2010.

[2] Shady Hills WWTF is currently under expansion to 14.0 MGD AADF, and is expected to be completed on 03/29/2010.

[3] Including New Port Richey WWTF under Inter-local Agreement as of 05/14/1996.

[4] As of August 1, 2008

2.2.3 Wastewater System Plan

PCUSB created a CIP to consolidate certain operations over the next five to ten years to implement improving technologies and achieve economies of scale in treatment and operations. The goal of these consolidation efforts is to maximize operational efficiencies and respond to the changing demographic flows.

Under this plan, the western service area will be consolidated with flows from the current Hudson, Embassy Hills, and Deer Park WWTFs being directed to the expanded Shady Hills WWTF with a capacity of 14 MGD. In the central service area, the Odessa WWTF has been consolidated into the Land O' Lakes WWTF. No further consolidation of the southeast service area is planned.

Detailed information concerning wastewater system assets and operations, as well as projected future system configurations and timing, are provided in the *Pasco County Wastewater System Plan* (King Engineering, 2005).

2.2.4 Wastewater System Demands

In 2008, PCUSB served approximately 77,598 wastewater service connections, which include single-family, multi-family, and commercial customers. The top ten users equate to 9 percent of the total daily average treatment of 20.0 MGD for 2007 (the most recent data available). The top ten wastewater customers of the system during 2007 are indicated in Exhibit 2-9.

EXHIBIT 2-9
Top Ten Wastewater Customers

Customer	Annual Flow (1000 gallons)
Aloha Utilities	178,248
Mad Hatter Utilities	161,213
Hudson Utilities	100,255
Summertree	52,622
Southport Springs.	38,705
B of CC	30,149
Regional Medical Ctr.	24,800
St. Leo University	24,505
Timber Lake Estates	19,460
Paradise Lakes	13,322

Exhibit 2-10 indicates the historical average daily demand for the wastewater system for the period of 1999 through 2008. The wastewater demand was relatively consistent from the years of 1999 through 2002. Between the years of 2003 and 2007, the County experienced a 17 percent increase in demand. This rate of increase is anticipated to have peaked and future projected demands are anticipated to stabilize at the current demand rate. PCUSB prepares an annual Capacity Analysis for each facility to monitor the changes in demand patterns.

EXHIBIT 2-10
Historical Average Daily Wastewater Demand

Fiscal Year Ended	No. of Service Connections	Daily Avg. Treatment (MGD)
1999	42,360	10.9
2000	44,708	13.1
2001	47,310	13.2
2002	50,712	13.9
2003	55,383	17.1
2004	62,625	17.5
2005	67,593	17.6
2006	73,005	19.29
2007	76,832	20.0
2008	77,598	19.09

Maximum capacity of treatment facilities 26.07 MGD

2.3 Reclaimed Water Facilities

The existing reuse water system was constructed by PCUSB beginning in 1986. The Reuse Master Water Plan (RMWP), first developed in 1992, established a plan designed to include treated effluent from the various PCUSB WWTFs to supply irrigation water to customers within the County. Since then, the system has grown to include seven Pasco County WWTFs, as well as effluent from the New Port Richey WWTF. The system now serves 11,315 residential and 171 commercial customers within the County, as of July 1, 2008. There are approximately 300 miles of serviced pipe currently in the delivery system. Collectively, this system is known as the Pasco County Master Reuse System (PCMRS).

The PCMRS uses the treated effluent from eight of the wastewater treatment facilities for public access reuse under Part III of Chapter 62-610, FAC. The distribution system is interconnected, allowing great flexibility in direction of flows to areas of the County where demand is occurring. The system is supplemented by a series of rapid infiltration basins (RIBs) to allow for groundwater recharge.

Operation of the PCMRS is challenged by the absence of an effective, permitted wet weather discharge option. In recent years, under the heavier than normal rainfalls associated with increased tropical weather activity, instances of insufficient capacity available for storage of reuse water resulted in non-permitted discharges.

The County is currently designing and constructing enhancements to the reuse system, including reservoir storage. One such addition is the 100 MG Land O' Lakes reservoir that was completed as of May 2008 and is currently in operation. The Boyette Road reservoir, when constructed, will provide storage capacity of between 400 and 600 MG. In addition, RIB capacity is being increased through the planned addition of facilities in the northern region of the County. Finally, the County has initiated a study intended to provide for a reliable wet weather discharge option that will provide restoration of historically impacted wetlands areas.

3. Utility Systems Flow Projections

3.1 Water System

Water consumption projections were obtained from the TBW 2007 demand model for Pasco County. For this analysis, it is assumed that all increased demand will occur within the unincorporated areas of the County. Exhibit 3-1 indicates the projected water consumption to the year 2025.

EXHIBIT 3-1
Pasco County Projected Water Consumption
Data from TBW, 2007

Year	Projected Consumption (MGD)
2010	31.8
2015	37.9
2020	43.6
2025	49.0

These projections for water consumption are within PCUSB's current WTF permitted withdrawal capacity through the year 2025. PCUSB's adoption of water conservation measures incorporated within current building codes, implementation of an inverted rate structure to penalize high water use, and development of an expanded reclaimed water distribution system for irrigation, is anticipated to reduce the predicted per capita consumption of potable water.

3.2 Wastewater System

CH2M HILL prepares an annual Capacity Analysis Report (CAR) for each of the PCUSB WWTFs. The 2008 Update to the CAR has been completed and includes projected wastewater demand through the year 2018. Exhibit 3-1 below indicates the projected wastewater demand through the year 2025 extrapolated from the 2008 Update to the CAR analysis.

EXHIBIT 3-2
Pasco County Projected Wastewater Demand
2008 Update to the CAR

Year	Projected Demand (MGD)[2]
2010	21.0
2015	22.8
2020[1]	26.0
2025[1]	29.2

(1)Years beyond the projection period included in the 2008 Update to the CAR

(2) includes 3.0 MGD capacity of New Port Richey WWTF

As indicated in the 2008 Update to the CAR, the aggregate projected flows are not expected to exceed total permitted capacity through the year 2018. This analysis takes into account the Wastewater System Plan and the resulting modifications to the permitted capacities.

4. Permitting

4.1 Florida Department of Environmental Protection

4.1.1 Water Systems

Existing PCUSB WTFs and upgraded and new facilities are all designed and operated in compliance with Florida Department of Environmental Protection (FDEP) regulations as set forth in "Division of Water Facilities," Chapter 62-500 F.A.C. As indicated in Section 2.1.3, Water Treatment Facilities of this report, PCUSB is current with all necessary permitting requirements.

4.1.2 Wastewater and Reclaimed Water Systems

Existing PCUSB WWTF and upgraded and new facilities are all designed and operated in compliance with FDEP regulations as set forth in "Domestic Wastewater Faculties," Chapter 62-600 and "Reuse of Reclaimed Water and Land Application," Chapter 62-610. As indicated in Section 2.2.3, Wastewater Treatment Facilities of this report, PCUSB is current with all necessary permitting requirements.

The operating permit issued by FDEP (#FL0127272) covers the PCMRS. The County expects to increase the PCMRS customer base, as well as demand, concurrently with the scheduled treatment plant consolidation and upgrades. By 2010, the County expects flow handled by the reclaimed water system to reach 20 MGD.

PCUSB is party to a negotiated Consent Order (FDEP Office of General Counsel File #05-2682) approved by the Board of County Commissioners on July 25, 2006, and countersigned by FDEP on August 10, 2006. The Order arose from a series of incidents outlined in warning letters received in 2003, 2005, and 2006. Under the terms of the Order, the County is subject to a schedule of compliance that includes many capital upgrades to the existing system as well as other administrative requirements. In general, all requirements of the Consent Order must be met by or before December 31, 2011. The County has met all compliance deadlines as of this time and it is anticipated that the requirements of the Consent Order will be met by the stipulated deadline.

4.2 Southwest Florida Water Management District

PCUSB water and wastewater systems are under the jurisdiction of the Southwest Florida Water Management District (SWFWMD) for Water Use Permits (WUPs) for water supply and for issuance of the Environmental Resource Permits, administered by FDEP, for construction activities.

The SWFWMD has notified PCUSB that it is in violation of the Lake Jovita WUP. Specifically, the permitted average annual production quantity of 327,000 gallons per day (gpd) was first exceeded in June 2006 with an average annual quantity of 340,427 gpd.

PCUSB has continued to exceed this permitted quantity and as a result, is working closely with SWFWMD to correct this deficiency. PCUSB met with SWFWMD staff on February 28, 2008 to address this issue and agreed upon a plan of action that is mutually acceptable to the parties. Work under this agreement is proceeding satisfactorily.

PCUSB is in the process of creating a Master Water Consolidation Plan that includes permit renewals to enable the consolidation of the Southeast Central and Southeast systems into the West service area, which includes the Lake Jovita WTF. This plan will create a new service area that will meet the SWFWMD permitted capacity requirements. In addition, PCUSB will realize greater operating efficiencies as a result of the consolidation.

5. Conclusions

Based on the information reviewed and the analyses conducted and summarized in this report, CH2M HILL is of the opinion that:

1. *PCUSB water and wastewater systems are in generally good condition.* PCUSB has established policies to accommodate centralized public water and wastewater treatment, distribution, and collection systems within the unincorporated area of Pasco County. It has taken measures to achieving this objective by acquiring private facilities, and has planned for and developed centralized water and wastewater systems to meet demands. The Pasco County Water and Sewer Utilities Capital Improvement Plan contains a comprehensive list of system improvement projects based on the strategic planning efforts discussed in this report.

2. *PCUSB secured long-term water sources that accommodate projected water consumption demands within the unincorporated area of the County through interlocal agreements with Tampa Bay Water and other public utilities within the County.* These agreements provide flexible means of obtaining the necessary raw and treated water to meet consumption demands. Regional planning through established partnerships with TBW and SWFWMD accounts for projected increased growth to ensure future demands are met. Together, the public water systems in Pasco County are able to provide sufficient potable water to the existing and projected populations within the unincorporated area of the County.

3. *The projected growth for the region represents reasonable projections.* Pasco County experienced accelerated growth during the period from 2004 through 2007. Based on the current number of water meter installations, it is believed that the near-term system growth will be more stable and will not mimic the rapid growth experienced in previous years.

4. *The projections for future water consumption are within PCUSB's current permitted withdrawal capacity.* PCUSB's adoption of water conservation measures incorporated within current building codes, implementation of an inverted rate structure to penalize high water use, and development of an expanded reclaimed water distribution system for irrigation is anticipated to reduce the per capita consumption of potable water.

5. *The projections for future wastewater demand through 2018 are within PCUSB's current and anticipated WWTFs permitted capacity.* The 2008 Update to the CAR included an analysis of the WWTFs aggregate permitted capacity for the period of 2008 to 2018.

6. References

Pasco County. 2006. Pasco County Comprehensive Plan. June 2006

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