



gai consultants

**SUMMARY APPRAISAL REPORT FOR THE
POTENTIAL SALE OF
TEGA CAY WATER SERVICES, INC.
WATER AND WASTEWATER UTILITY SYSTEM**

DRAFT

GAI# A132116.00/01

Date of Report: 1/29/2014

Effective Date of Valuation: 11/15/2013

PREPARED FOR

**CITY OF TEGA CAY
TEGA CAY WATER SERVICES, INC.**

PREPARED BY

**GAI CONSULTANTS, INC.
618 E. SOUTH STREET, SUITE 700
ORLANDO, FLORIDA 32801**

. . . transforming ideas into reality

January 29, 2014
GAI Project #: A132116.00 and A132116.01

Mr. Charlie Funderburk, City Manager
Mr. Jim Sheedy, City Attorney
City of Tega Cay
7725 Tega Cay Drive
P.O. Box 3399
Tega Cay, SC 29708

Mr. Don Sudduth
Tega Cay Water Services, Inc.
2335 Sanders Road
Northbrook, IL 60062

Summary Appraisal Report for the Potential Sale of the Tega Cay Water Services Water and Wastewater Utility System

Dear Messrs. Funderburk and Sheedy and Sudduth:

GAI Consultants, Inc. ("GAI") presents this Summary Appraisal Report ("Report") for the Tega Cay Water Services, Inc. ("TCWS") water and wastewater system ("Utility") as of November 15, 2013, located in York County, South Carolina. This opinion of value was prepared for use by the City of Tega Cay ("City") and TCWS for the purposes of potential acquisition. This is a summary appraisal report with the back-up analyses and support information to be found in GAI's files under the above project numbers.

As a precedent for developing the opinion of value, the Utility was evaluated using approaches which are recognized throughout the industry as required for consideration by the Uniform Standards of Professional Appraisal Practice ("USPAP"), 2012 - 2013 edition, including:

- Replacement Cost New Less Depreciation;
- Income; and
- Comparable Sales.

In each valuation approach, considerations and adjustments are made which are typically conducted, considered, and/or performed in the determination of fair market

value. The applicable adjustments focus on providing existing and projected probable use of the assets. Each of the defined valuation approaches results in a separate distinct finding which are reconciled and considered to formulate an opinion of value for the subject assets.

To arrive at a final opinion of value, the cost approach was weighted at approximately 45%, the income approach at approximately 45%, and the comparable sales approach at approximately 10%, for this special purpose property.

The opinion of value presents my opinion of the amount of money a knowledgeable buyer would pay and a knowledgeable seller would accept, both willing to enter into a transaction with the Utility in its present and probable use. Utilities are special purpose properties with distinct characteristics. The subject assets as part of a system are, in effect, a monopoly and these assets represent an essential public utility of the area.

The results of the calculations and analyses performed in accordance with each applicable approach are detailed throughout the body of the Report and summarized as follows:

Valuation Approach	Value
Replacement Cost New Less Depreciation	\$ 9,130,000
Income	\$ 6,730,000
Comparable Sales	\$ 7,200,000

Considering the results provided above in conjunction with my prior experience and professional judgment, the opinion of the value of the Tega Cay Water and Wastewater utility system facilities as of November 15, 2013 is:

\$ 7,860,000

(seven million eight hundred sixty thousand dollars)

We appreciate this opportunity to provide the technical expertise you desire. Should you have any questions or need further assistance, please feel free to call.

Very truly yours,

GAI Consultants, Inc.

Gerald C. Hartman, P.E., BCEE, ASA
Vice President
South Carolina P.E. Registration # 15389
ASA No. # 7542

DRAFT

VALUATION CERTIFICATION

I certify that, to the best of my knowledge and belief, the statements of fact contained in this Report are true and correct. I further certify that the reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, unbiased professional analyses, opinions and conclusions.

I have no present or prospective interest in the property which is the subject of this report, and I have no personal interest or bias with respect to the parties involved. My compensation is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value estimate, the attainment of a stipulated result, or the occurrence of a subsequent event.

My analyses, opinions, and conclusions were developed, and this Report has been prepared, in conformity with the requirements of the Code of Professional Ethics and the Uniform Standards of Professional Appraisal Practice of The Appraisal Foundation.

The use of this Report is subject to the requirements of the American Society of Appraisers and the State of South Carolina relating to review by its duly authorized representatives. As of the date of this report, Mr. Gerald C. Hartman has completed the requirements of the continuing education program and testing of the American Society of Appraisers for public utility Accredited Senior Appraisers and the State of South Carolina Board of Professional Regulation as applicable to engineers.

I have made a personal inspection of the property that is the subject of this Report. GAI staff members performed various tasks directly under my supervision. All of the above was relied upon for this Report. Except as noted herein, no other person provided significant professional assistance to the person signing this Report. Note that no land or easement appraisal has been conducted here and the results thereof may alter the opinions stated.

I do not authorize the out-of-context quoting from or partial reprinting of this Summary Appraisal Report. Further, neither all nor part of this Report shall be disseminated to a third party without prior written consent of the City of Tega Cay and Tega Cay Water Services, Inc. Note that this report was prepared for a specific use and no other use is authorized.

Gerald C. Hartman, P.E., BCEE, ASA
ASA No. 7542
South Carolina P.E. No. 15389

Date

DRAFT



The American Society of Appraisers

Attests that

GERALD C. ~~CHARTMAN~~, ASA

has successfully participated in the
Society's mandatory Reaccreditation Program
and has complied with its continuing education requirements,
as set forth in the organization's Constitution, Bylaws and
Administrative Rules. Therefore, formal reaccreditation has
been granted by the International Board of Governors and will
remain valid through

August 15, 2016



International President

Chairman, Int'l Board of Examiners

Education

M.S. Duke University, 1976

B.S. Duke University, 1975

Relevant Training/Courses

AWRA, AWWA, ASCE, WEF, ASA

Seminars, Courses & Ethics ASA, NSPE,

PE USPAP 2003, 2004 2009/2010 Exams

ME 201, ME 202, ME 203, ME 204 ASA –
Public Utilities BV 201; PP 201 - American
Society of Appraisers, 2011

Public Utilities Specialty Designation Exam
Parts I, II, and III ASA

AAEE, ASA, NSPE, PE (multiple states)

Continuing Education

Numerous Technical Appraisal Exams in
personal property(tangible & intangible),
business valuation, and other areas

Affiliations

Diplomate – American Academy of
Environmental Engineers

American Society of Appraisers

American Society of Civil Engineers

American Water Works Association

Florida Engineering Society

Florida Water Works Association

National Society of Professional Engineers

Water and Environment Federation

Management Consulting/Valuation/Expert Testimony

Professional Summary

Mr. Hartman is an experienced utility engineer and appraiser specializing in utilities and systems. He is a qualified expert witness in the area of utility system valuation and financing, facility siting, certification/service area/franchises and formation/creation, management and acquisition projects. Mr. Hartman is accepted in various Federal Courts, Circuit Courts, Division of Administrative Hearings, Public Service Commissions, arbitration, and quasi-judicial hearings conducted by cities and counties, as a technical expert witness in the areas of utility systems (water, wastewater, stormwater, solid waste, gas and electric), certification/service area/franchises, facility planning, utility conveyance, transmission and distribution, utility resources, utility treatment, engineering, permitting and regulations, utility system design and construction, and utility systems valuation (water , wastewater, stormwater, solid waste, gas, and electric systems), costing and damages.

Registrations/Certifications

Alabama	No. 19422	Nebraska	No. E-12868
Arizona	No. 28939	Nevada	No. 20259
Colorado	No. 31200	New Mexico	No. 15990
Florida	No. 27703	New York	No. 088623-1
Georgia	No. 17597	North Carolina	No. 15264
Illinois	No. 062-053100	Ohio	No. 70152
Indiana	No. 10100292	Pennsylvania	No. 38216
Kentucky	No. 22463	South Carolina	No. 15389
Louisiana	No. 30816	Tennessee	No. 105550
Maryland	No. 12410	Texas	No. 106678
Mississippi	No. 12717	Virginia	No. 131184
NCEES National P.E.	No. 20481		

American Society of Appraisers Accredited Senior Appraiser No. 7542

Professional Experience

Machinery and Technical Specialties, ASA – Public Utilities

- + Public Utilities Appraisal Specialty Certified, ASA
- + Tangible Personal Property – VAB, Magistrate – Orange County, FL (2009 and 2010)
- + Tangible Personal Property – Special Magistrate
 - Osceola County, FL (2011, 2012, and 2013/2014)
 - Hendry County, FL (2012 and 2013/2014)
 - Lee County, FL (2013/2014)



Financial Reports

Mr. Hartman has been involved in over 300 capital charge, impact fee and installation charge studies involving water, wastewater and fire service for various entities. He also has participated in over 150 user rate adjustment reports. Mr. Hartman assisted in the development of over 70 revenue bond issues, 20 short-term bank loan systems, 10 general obligation bonds, numerous grant/loan programs, numerous capacity sale programs, and 20 privatization programs. Mr. Hartman has been involved in over \$3 billion in utility bond and commercial loan financings for water and wastewater utility, and over \$4 billion in utility grants, matching funding, cost-sharing; SRF loans and Federal Loans (R.D., etc.), assessments and CIAC programs.

Utility Appraisals, Valuations and Evaluations

Mr. Hartman has been involved in some 400 utility negotiations, valuations and evaluations, and has been a qualified expert witness by the courts with regard to utility, arbitrations and condemnation cases. He has participated in the valuation of numerous utility systems. His experience in the past few years includes:

Year	Project	Party Represented
2014	Tega Cay, South Carolina, W&WW	City/Owner
2013	Harrison, Ohio Water	City
2013	Water Management Services	Bank
2013	North Lee Rural Water Association, Tupelo, MS (Partial)	City
2013	NPUC (Cost/Comp) Wastewater	Bank
2013	Progress Energy Florida (Citrus County) TPP 1/1/2012	County
2013	Village of Oakwood Water and Wastewater System	Village
2013	Richmond Generation Station (Review, Ongoing)	City
2013	Peru Generation Station (Review Ongoing)	City
2013	Dover, Delaware Electric System	City
2013	C-51 Reservoir	Owner
2013	C-25 Reservoir	Owner
2013	Eglin Air Force Base	Proposer
2013	Fellsmere TTP Electric (Ongoing)	City
2013	Duke Energy (Citrus County) TPP Electric 1/1/2013	County
2012	Beverly Hills Waste Management	Owner
2012	Town of Belleair	Town
2012	Orchid Springs Utilities	City
2012	Tymber Creek Utilities – Stock Transfer	Owner(s)
2012	Peoples of Balstop - condemnation (ongoing)	Owner
2012	Senoia Water System	County
2011	Pine Island Utility System	Owner
2011	Town of Franklinton Water and Wastewater System	Both
2011	Kill Devil Hills Wastewater Treatment Plant	Bank
2011	Chesapeake Electric Utility – Marianna, Florida	City
2011	City of South Daytona Electric Utility	City
2011	On Top of the World Communities Water, Wastewater, and Reuse System – Marion County, Florida (Bay Laurel Center Community Development District)	District
2011	City of Vero Beach Electric Utility	City
2011	City of Vero Beach Water, Wastewater, and Reuse System	City
2010	Rolling Oaks Water and Wastewater System and the Beverly Hills Waste Management System (SW)	Owner/Bank
2010	Liberty Water – Tall Timbers Wastewater System, TX	Owner
2010	Heritage Hills Water and Sewer System, NY	Owner
2010	Waterside Villages of Currituck Waste Water Treatment Plant, NC	District
2010	Tindall Hammock Irrigation and Soil Conservation District Water and Wastewater System	District
2010	KW Resort Utilities	Owner

Year	Project	Party Represented
2010	Great Wolf Resort Utilities, PA	Owner
2010	Town of Indian River Shores Water and Sewer System Assets	Town
2010	City of Vero Beach Water and Sewer System Assets in the Town of Indian River Shores (Partial)	City
2010	City of Griffin Water System Assets, GA	Water Authority
2010	Golden Beach Water Assets	City
2010	Thunder Enterprises, Inc. Water System Assets, AL	Owner
2010	River Forrest, S.C.	Both
2010	Stonecreek, S.C.	Both
2010	Fearington Utilities	NFP
2009	On Top of the World Communities Water, Wastewater, and Reuse System – Marion County, Florida (Bay Laurel Center Community Development District)	District
2009	Aquarina Water and Wastewater	Bank
2009	Cocoa Beach (electric)	City
2009	Parkland Utilities	Owner
2009	GISTRO	NFP
2009	Fruitland Park (electric)	City
2009	Town of Golden Beach Water and Wastewater System	City
2008	Park Water Company	City
2008	Crooked Lake Sewerage Company	City
2008	Vanguard Wastewater System	City
2008	Traxler Enterprises	City
2008	Louisiana Land and Water Company	Owner
2008	Sandy Creek Water and Wastewater	County
2008	Bayside Water and Wastewater	County
2008	Fern Crest Utilities, Inc.	Buyer
2008	Turnpike Utilities, LLC – W/S North Carolina	Owner
2008	Nags Head, Moneray Shores, Currituck Sewer Corollo #1 & #2	Buyer
2008	Service Management Systems, Inc.	Bank
2008	Slash Creek Utility System	Owner
2008	Kill Devil Hills Utility Company	Owner
2008	Orchid Springs Utilities	City
2008	City of North Miami Beach – Utilities	Owner
2007	Pine Island Water System	Owner
2007	Pine Island Currituck Sewer	Owner
2007	Gulf Coast Electric Cooperative	County
2007	Marion Utilities, Sunshine Utilities and Windstream Utilities	County
2007	Ocean Reef/NKLUA/Card Sound I.Q.	FKAA
2007	Irish Acres	County
2007	I-20 Systems South Carolina	Owner
2007	Town & Country Update	Owner
2007	Service Management Systems, Inc.	C.B. Ellis
2007	Bulow Village Resort	County
2007	Intercoastal Utilities	Owner
2006	Donaldsonville/Peoples Utilities	Owner
2006	MSM Utilities, Inc.	Owner
2006	BSU/Citrus Park	Owner
2006	Jasmine Lakes and Palm Terrace	City
2006	The Arbors	County
2006	Oak Centre	County
2006	Silver Oaks Estates	County
2006	Regal Woods	County
2006	Golden Glen	County
2006	Willow Oaks	County
2006	South Oak	County

Year	Project	Party Represented
2006	Gulf State Community Bank – Utility Holdings	Bank
2006	Rolling Green	County
2006	South 40, Citrus Park and Raven Hill	County
2006	Holiday Utility Company, Inc.	Bank
2006	Old Bahama Bay	Management
2006	Utility Consolidation Program	County
2006	Loch Harbor Water & Wastewater System	Owner
2005	Lake Wales Utility Company	Bank
2005	Pennichuck Water Company	Confidential
2005	K.W. Resort Utilities, Inc.	Confidential
2005	Water Management Services, Inc.	Owner
2005	Town and Country Utility Co.	Confidential
2005	Village of Royal Palm Beach	Village
2005	Orange/Osceola/Lake/Seminole Counties	Confidential
2005	Utilities, Inc. (Partial)	Owner
2005	Village of Royal Palm Beach	Village
2005	Bald Head Island Utilities, Inc.	Village
2005	Broward County	Confidential
2005	Burkim Enterprises, Inc.	Owner
2005	Lyman Utilities, Inc. Harrison County, MS	Owner
2004	Quail Meadow Utility Company	County
2004	Silver Springs Shores Regional	County
2004	Matanzas Shores	County
2004	El Dorado Utilities, NM	Owner
2004	CDF to City of Tupelo, MS	CDF
2004	Pesotum, Illinois – IAWC	Village
2004	Philo, Illinois – IAWC	Village
2004	Central Florida	Confidential
2004	Skyview	City
2004	Polk Utilities	NFP
2004	St. Johns Services Company	County
2004	Intercoastal Utilities Company	County
2004	Stonecrest Utilities	County
2004	Meredith Manor	County
2004	Lake Harriet Estates	County
2004	Lake Brantley	County
2004	Fern Park	County
2004	Druid Hills	County
2004	Dol Ray Manor	County
2004	Apple Valley	County
2004	Kingsway Utility Area	County
2004	Lake Suzy Utilities (water portion)	County
2004	Sanibel Bayous Wastewater Corporation	City
2004	Ocean City Utilities	FCURIA/County
2004	Peoples Water of Donaldsonville, LA	Owner
2003	Harmony Homes	County
2003	Florida Central Commerce Park	County
2003	Chuluota	County
2003	District 3C (Miramar portion)	City
2003	Lincoln Utilities/Indiana Water Service	Owner
2003	Gibsonia Estates	City
2003	Lake Gibson Estates	City
2003	El Dorado Utilities, NM	Buyer
2003	Jungle Den Utilities	Association
2003	Holiday Haven Utilities	Association

Year	Project	Party Represented
2003	Salt Springs	County
2003	Smyrna Villas	County
2003	South Forty	County
2003	Citrus Park	County
2003	Spruce Creek South	County
2003	Spruce Creek	County
2003	Spruce Creek Country Club Estates	County
2003	Longwood Franchise (electric)	City
2003	Casselberry Franchise (electric)	City
2003	Apopka Franchise (electric)	City
2003	Winter Park Acquisition (electric)	City
2003	Stonecrest/Steeplechase	County
2003	Marion Oaks	County
2003	Kingswood Utilities	County
2003	Oakwood Utilities	County
2003	Sunny Hills Utilities	Confidential
2003	Interlachen Lake/Park Manor	Confidential
2003	Tomoka/Twin Rivers	Confidential
2003	Beacon Hills	Buyer
2003	Woodmere	Buyer
2003	Bay Lake Estates	City
2003	Fountains	City
2003	Intercession City	City
2003	Lake Ajay Estates	City
2003	Pine Ridge Estates	City
2003	Tropical Park	City
2003	Windsong	City
2003	Buenaventura Lakes	City
2002	Lelani Heights Utilities	County
2002	Fisherman Haven Utilities	County
2002	Fox Run Utilities, Inc.	County
2002	Ponce Inlet	City
2002	Amelia Island Utilities	City
2002	Florida Public Utilities	City
2002	AquaSource – LSU	County
2002	Park Place Utility Company, GA	Owner
2002	Kingsway Utility System	Owner/County
2002	Pennichuck Water Company, NH	City
2002	Philo Water System, IL	Village
2002	Pasco County – 2 systems	County
2002	Marion Consolidation – 10 systems	County
2002	Sugarmill	UCCNSB
2002	Deltona	FCURIA
2002	Palm Coast	FCURIA
2002	Bald Head Island Utilities, NC	Village
2002	White's Creek – Lincolnshire, SC	Owner
2002	Bluebird Utilities, Tupelo, MS	NFP
2001-2	Due Diligence – 260 systems (VA, NC, SC)	Buyer
2001	Shady Oaks	County
2001	Davie/Sunrise	City
2001	Lindale Utilities	County
2001	Aquarina	Owner
2001	Intercoastal Utilities	County
2001	Beverly Beach	City
2001	Citrus County Utility Consolidation Plan (numerous)	County

Year	Project	Party Represented
2001	Pasco County Utility Acquisition Plan (numerous)	County
2001	Skylake Utilities	City
2001	Town of Lauderdale-By-The-Sea	Town
2001	John Knox Village	City
2001	Silver Springs Regional	County
2001	DeSoto Countywide FWSC Franchise and Assets	County
2001	Zellwood Station Co-Op	Co-Op
2001	Palm Cay	County
2000	The Great Outdoors	Owner
2000	Destin Water Users	City
2000	Pine Run	County
2000	Oak Run	County
2000	Dundee Wastewater (partial)	City
2000	Polk City Water	City
2000	A.P. Utilities (2 systems)	County
2000	CGD Utilities	Bank
2000	Boynton Beach (partial)	City
2000	Aqua-Lake Gibson Utilities	City
2000	Bartelt Enterprises, Ltd. (2 systems)	Owner
2000	49 'Ner Water System, Tucson, AZ	Owner
2000	Stock Island Wastewater and Reuse System	Owner
1999	Osceola Power Station (Electric)	Owner
1999	Okeelanta Power Station (Electric)	Owner
1999	Del Webb (3 systems)	County
1999	Destin Water Users Co-Op	City
1999	O&S Water Company	City
1999	Rolling Springs Water Company	County
1999	ORCA Water & Solid Waste	Authority
1999	Marianna Shores Water and Wastewater	City
1999	Mount Olive Utilities	City
1999	AP Utilities (3 systems)	County
1999	Tangerine Water Association	City
1999	Laniger Enterprises Water & Wastewater	Bank
1999	IRI golf Water System, AZ	Investor
1999	South Lake Utilities	City
1999	St. Lucie West CDD	City
1999	Polk City/Lakeland	City
1999	Dobo System, Hanover County, NC	County
1999	Rampart Utilities	County
1999	Garlits to Marion County	County
1998	Golf and Lake Estates	City
1998	Sanibel Bayous/E.P.C.	City
1998	Tega Cay Utility Company, SC	City
1998	Marlboro Meadows, MD	Owner
1998	Sugarmill Water and Wastewater/Volusia County	UCCNSB
1998	SunStates Utilities, Inc.	Owner
1998	Town of Hope Mills/FPWC, NC	Town
1998	River Hills, SC	County
1998	Town of Palm Beach	Town
1998	K.W. Utilities, Inc.	Buyer
1998	Orange Grove Utility Company, MS	Owner
1998	Garden Grove Water Company	City
1998	Sanlando Utilities, Inc.	County
1997	Golden Ocala Water and Wastewater System	County
1997	Holiday Heights, Daetwyller Shores, Conway, Westmont	County

Year	Project	Party Represented
1997	University Shores	County
1997	Sunshine Utilities	County
1997	Bradfield Farms Utility, NC	Owner
1997	Palmetto Utility Corporation	Owner
1997	A.P. Utilities	County
1997	Village of Royal Palm Beach	Village
1997	Jasmine Lake Utilities Corporation	Lender
1997	Arizona (confidential)	Owner
1997	Village Water Ltd., FL	Owner
1997	N.C. System – CMUD (3 systems)	Owner
1997	Courtyards of Broward	City
1997	Miami Springs	City
1997	Widefield Homes Water Company, CO	Company
1997	Peoples Water System	ECUA
1997	Quail Meadows, GA	County
1997	Rolling Green, GA	County
1996	Keystone Heights	City
1996	Buchanan	Owner
1996	Keystone Club Estates	City
1996	Lakeview Villas	City
1996	Geneva Lakes	City
1996	Postmaster Village	City
1996	Landen Sewer System, CMUD, NC	Company
1996	Citizens Utilities, AZ	City
1996	Widefield Water and Sanitation, CO	District
1996	Consolidation Program Game Plan	County
1996	Marion Oaks	County
1996	Marco Shores	Company
1996	Marco Island	Company
1996	Cayuga Water System, GA	Authority
1996	Glendale Water System, GA	Authority
1996	Lehigh Acres Water and Wastewater, GA	Authority
1996	Lindrick Services Company	Company
1996	Carolina Blythe Utility, NC	City
1996	Ocean Reef R.O. WTPs	NKLUA
1995	Sanibel Bayous	City
1995	Rotunda West Utilities	Investor
1995	Palm Coast Utility Corporation	ITT
1995	Sunshine State Parkway	Company
1995	Orange Grove Utilities, Inc., Gulfport, MS	Company
1995	Georgia Utilities, Peachtree, GA	City
1995	Beacon Hills Utilities	Company
1995	Woodmere Utilities	Company
1995	Springhill Utilities	Company
1995	Okeechobee Utility Authority	OUA
1995	Okeechobee Beach Water Association	OUA
1995	City of Okeechobee	OUA
1995	Mad Hatter Utilities, Inc.	Company
1994	Eastern Regional Water Treatment Plant	Owner
1994	GDU – Port St. Lucie Water and Wastewater	City
1994	St. Lucie County Utilities	City
1994	Marco Island/Marco Shores	Sun Bank
1994	Heater of Seabrook, SC	Company
1994	Placid Lake Utilities, Inc.	Company
1994	Ocean Reef Club Solid Waste System	ORCA

Year	Project	Party Represented
1994	Ocean Reef Club Wastewater System	ORCA
1994	South Bay Utilities, Inc.	Company
1994	Kensington Park Utilities, Inc.	Company
1993	River Park Water System	SSU/Allete
1993	Taylor Woodrow, Sarasota County	Taylor Woodrow
1993	Atlantic Utilities, Sarasota County	Company
1993	Alafaya Utilities, Inc.	Bank
1993	Anden Group Wastewater System, PA	Company
1993	West Charlotte Utilities, Inc.	District
1993	Rolling Oaks (SW)	Owner
1993	Sanlando Utilities, Inc.	Investor
1993	Venice Gardens Utilities	Company
1992	Myakka Utilities, Inc.	City
1992	Kingsley Service Company	County
1992	Mid Clay Utilities, Inc.	County
1992	Clay Utilities, Inc.	County
1992	RUD#1 (4 systems review)	Meadowoods/Kensington Park
1992	Uddo Landfill (SW)	Owner
1992	Martin Downs Utilities, Inc.	County
1992	Fox Run Utility System	County
1992	Leilani Heights	County
1992	River Park Water and Sewer	SSU/Allete
1992	Central Florida Research Park	Bank of America
1992	Rolling Oaks Utility	Investor
1992	City of Palm Bay Utilities	PBUC
1992	North Port – GDU Water and Sewer	City
1992	Palm Bay – GDU Water and Sewer	City
1992	Sebastian – GDU Water and Sewer	City
1991	Sanibel – Sanibel Sewer System, Ltd.	City
1991	St. Augustine Shores, St. Johns County	SSU/Allete
1991	Remington Forest, St. Johns County	SSU/Allete
1991	Palm Valley, St. Johns County	SSU/Allete
1991	Valrico Hills, Hillsborough County	SSU/Allete
1991	Hershel Heights, Hillsborough County	SSU/Allete
1991	Seaboard Utilities, Hillsborough County	UFUC
1991	Federal Bankruptcy – Lehigh Acres	Topeka/Allete
1991	Meadowoods Utilities, Regional Utility District #1	Investor
1991	Kensington Park Utilities, Regional Utility District #1	Investor
1991	Industrial Park, Orange City	City
1991	Country Village, Orange City	City
1991	John Know Village, Orange City	City
1991	Land O'Lakes, Orange City	City
1990	Orange-Osceola Utilities, Osceola County	County
1990	Morningside East and West, Osceola County	County
1990	Magnolia Valley Services, Inc., New Port Richey	City
1990	West Lakeland Industrial, City of Lakeland	City
1990	Highlands County Landfill	Owner
1990	Venice Gardens Utilities, Sarasota County	SSU/Allete
1990	South Hutchinson Services, St. Lucie County	SHS
1990	Indian River Utilities, Inc.	City
1990	Coraci Landfill (SW)	Owner
1990	Terra Mar Utility Company	City
1989	Seminole Utility Company, Winter Springs	Topeka/Allete
1989	North Hutchinson Services, Inc., St. Lucie County	NHS

Year	Project	Party Represented
1989	Sugarmill Utility Company	UCCNSB
1989	Ocean Reef Club, Inc., ORCA	Company
1989	Prima Vista Utility Company, City of Ocoee	PVUC
1989	Deltona Utilities, Volusia County	SSU
1989	Poinciana Utilities, Inc., Jack Parker Corporation	JPC
1989	Julington Creek	Investor
1989	Silver Springs Shores	Bank
1988	Eastside Water Company, Hillsborough County	County
1988	Twin County Utilities	Company
1988	Burnt Store Utilities	Company
1988	Deep Creek Utilities	Company
1988	North Beach Water Company, Indian River County	NBWC
1988	Bent Pine Utility Company, Indian River County	BPUC
1988	Country Club Village, SSU	CCV
1987	Sugarmill Utility Company, Florida Land Corporation	FLC
1987	North Orlando Water and Sewer Company, Winter Springs	NOWSCO
1987	Osceola Services Company, FCS (nfp)	OSC
1987	Orange City Water Company, Orange City	City
1987	West Volusia Utility Company, Orange City	City
1987	Seacoast Utilities, Inc., Florida Land Corporation	FLC
1987	Utilities Commission, City of New Smyrna Beach (partial SA/Assets) (Electric)	Commission

And numerous other utility valuations in the 1976-1987 period.

Utility Management Consulting

Mr. Hartman has been involved in utility transfers from public, not-for-profit, district, investor-owned, and other entities to cities, counties, not-for-profit corporations, districts, and private investors. He has been involved in staffing, budget preparation, asset classification, form and standards preparation, utility policies and procedures manuals/training, customer development programs, standard customer agreements, capacity sales, and other programs. Mr. Hartman has been involved in over 100 interlocal agreements with respect to service area, capacity, service, emergency interconnects, back-up or other interconnects, rates, charges, service conditions, ownership, bonding and other matters. Additionally, Mr. Hartman has assisted in the formation of newly certificated utilities, newly created utility departments for cities and counties, new regional water supply authorities, new district utilities, and other utility formations. Mr. Hartman has assisted in Chapter 180.02 F.S. utility reserve areas for the Cities of Haines City, Sanibel, Lakeland, St. Cloud, Winter Haven, Bartow, Palm Bay, Orange City, and many others. He has participated in the certification of many utilities such as ECFS, Malabar Woods, B&C Water Resources, Inc., Farmton Water Resources, Inc. and many others; and certification disputes such as Windstream, Intercoastal Dulay Utilities, FWSC/ITT, and others and served as service area certification staff of the regulatory for St. Johns County; i.e., Intercoastal, etc.; as service area transfer/certification staff of the regulatory for Flagler County; i.e., Palm Coast to FWSC. He has served as a local county regulatory staff professional in Collier, Citrus, Hernando, Flagler and St. Johns Counties as well as elsewhere. Mr. Hartman has also provided the technical assistance to many utility service area agreements such as Winter Haven/Lake Wales/Haines City, etc. and North Miami Beach – MDWASD and others. For over 30 years, Mr. Hartman has been a professional assisting in the resolution of utility issues.

Utility Finance, Rates, Fees and Charges

Mr. Hartman has been involved in hundreds of capital charge, impact fee, and installation charge studies involving water, wastewater, stormwater, solid waste, gas and electric service for various Florida entities and at the rate regulatory commissions. He also has participated in hundreds of user rate adjustment reports. Since 1976, Mr. Hartman assisted in the development of over 50 revenue bond issues, 20 short-term bank loan systems, 2 general obligation bonds, 26 grant/loan programs, 10 capacity sale programs, and 20 privatization

programs. He has been involved in over hundreds of utility acquisition/utility evaluations for acquisition, and is a qualified expert witness with regard to utility rates and charges, and utility negotiation, arbitration and condemnation cases. A few of his rate, charge and bond projects include:

- + City of North Miami Beach Water and Wastewater Rate, Fee and Charge Study, 2013
- + City of North Miami Beach \$65 Million Water Revenue Bond Issue, 2012
- + DeKalb County Revenue Bond Issue \$373 Million Services 2011
- + Polk City Services 2010 - \$10 Million Revenue Bond Issue
- + Bay Laurel Services 2011 - \$45 Million Revenue Bond Issue
- + Bay County Water Rate, Charge and Fee Study both Wholesale and Retail, 2013
- + Bay County Wastewater Rate, Charge and Fee Study both AWT and Owner Retail, 2013
- + Bucks County – City of Philadelphia Wholesale Utility Services Analysis, 2011
- + Timber Creek FPSC Utility Rates and Charges, 2011 and 2012
- + Polk City Water and Wastewater Rate, Fee and Charge Study, 2010
- + Lake Worth Wholesale Charges Analysis for 7 entities, 2012
- + THISCD Water and Wastewater Rate, Fee and Charge Study, 2012
- + City of Ft. Meade Water and Wastewater Rate, Fee and Charge Study, 2013
- + City of Ft. Meade Stormwater Rate Study, 2012
- + City of Ft. Myers Beach Water and Wastewater Rate, Fee and Charge Study, 2013
- + Dunnellon Rate and Surcharge Review, 2012/2013
- + Bay Laurel Center Community Development District – Water, Wastewater and Reclaimed Water Rate Study, Line Charge Study, and Miscellaneous Charge Study, 2010
- + Skyland Utilities, LLC – FPSC, 2009
- + Bluefield Utilities, LLC – FPSC, 2009
- + Grove Land Utilities, LLC – FPSC, 2009
- + Tindall Hammock Irrigation and Soil Conservation District – Water and Wastewater Rate and Charge Study, 2008
- + Bay County – Wholesale Rate Study and Impact Fee Study – 2007
- + Flagler County – Impact Fee Analysis, 2005
- + Flagler County – Base Facility Charge Analysis, 2005
- + Marion County – Silver Springs Regional – Water and Wastewater Revenue Sufficiency, 2004
- + Beverly Beach – Water and Wastewater System, 2004
- + Village of Bald Head Island – Water and Wastewater Rate Sufficiency, 2004
- + Farmton Water Resources, Inc. – FPSC, 2004
- + B&W Water Resources, Inc. – FPSC, 2004
- + Marion County – Stonecrest, Marion Oaks, Spruce Creek, Salt Springs, South Forty, Smyral Villas – Rate Integration/Phasing Program, 2003
- + City of North Miami Beach – Water and Wastewater Adjustment, 2003
- + City of Fernandina Beach – Water and Wastewater Rate Study, 2002
- + St. Johns County – St. Johns Water Co. Rates, 2003
- + St. Johns County – Intercoastal Rates, 2001
- + Nashua, NH – Pennichuck Water Co., 2002
- + City of Deltona – Water and Wastewater, 2002
- + Town of Lauderdale By-The-Sea, 2001
- + FCURA – Palm Coast Rates, Certification, 2000
- + Marion County – Pine Run, Oak Run, A.P. Utilities – Rate Integration, 2000
- + City of North Miami Beach – Revenue Sufficiency Analysis, 2000
- + North Key Largo Utility Authority, 2000
- + Port St. Lucie – St. Lucie West – CDD, 1999

- + Hanover County – Water and Wastewater, 1999
- + UCCNSB/Sugarmill, 1999
- + Town of Hope Mills, 1998
- + Town of Palm Beach, 1998
- + City of Winter Haven, 1998
- + Palmetto Resources, Inc. – Raw Water, Reuse, Water, and Wastewater, 1997
- + City of Miami Springs – Analysis, 1997
- + Widefield – Water and Wastewater, 1997
- + Bullhead City – Wastewater, 1996
- + Marion County, 1996
- + Utilities Commission, City of New Smyrna Beach - Water and wastewater Rate Study, 1995
- + Okeechobee Utility Authority - Rate and charge study, 1995
- + Southern States - Statewide rate case, 1995
- + Englewood - AFPI and capital charges, 1995
- + Lee County - Rates and charges, 1995
- + Venice - Reuse rate study, 1994
- + Utilities Commission, City of New Smyrna Beach - Capital charge study, 1996
- + Port St. Lucie - Water, gas and wastewater rates, 1994
- + Port St. Lucie - Capital charge study, 1995
- + Bullhead City - Assessment study, 1996
- + Englewood - Assessment study, 1996
- + Sanibel - Capacity sale study, 1995
- + City of New Port Richey - Rate and charge study, 1995
- + Acme Improvements District, Wellington, Florida - Water/wastewater studies, 1994
- + Charlotte County, Florida - Water/wastewater studies, Rotunda West rate case, 1993
- + Clay County, Florida - Water/wastewater studies, 1992
- + City of Deerfield Beach, Florida - Water/wastewater studies, 1992
- + City of Dunedin, Florida - Water/wastewater studies, 1991
- + Englewood Water District, Florida - Water/wastewater studies, 1993
- + City of Green Cove Springs, Florida - Water/wastewater studies, 1991
- + Hernando County, Florida - Water/wastewater studies, 1992
- + City of Lakeland, Florida - Water studies, 1976-89
- + Martin County, Florida - Water/wastewater studies, 1993
- + City of Naples, Florida - Water/wastewater and solid waste studies, 1992/94
- + City of New Port Richey, Florida - Water/wastewater studies, 1994
- + City of North Port, Florida - Water/wastewater studies, 1992
- + City of Orange City, Florida - Water/wastewater studies, 1985-94
- + City of Palm Bay, Florida - Water/wastewater studies, 1985-94
- + City of Panama City Beach, Florida - Water/wastewater studies, 1993
- + City of Sanibel, Florida - Water and reuse studies, 1988-94
- + Southern States Utilities Inc., Florida - Water/wastewater studies and statewide rate cases, 1991/93
- + City of Tamarac, Florida - Water/wastewater studies, 1993
- + Utilities Commission, City of New Smyrna Beach, Florida - Water/wastewater and reuse studies, 1992/94
- + Volusia County, Florida - Solid waste studies, 1989
- + City of West Palm Beach, Florida - Water/wastewater and reuse studies, 1993/94
- + City of Sebastian, Florida - Water/wastewater studies, 1993
- + City of Tarpon Springs, Florida - Water/wastewater studies, 1994
- + City of Miami Springs, Florida - Water/wastewater and solid waste studies, 1994

- + City of Edgewater, Florida - Water/wastewater and solid waste studies, 1987-90
- + City of Venice, Florida - Reuse studies, 1994
- + City of Port St. Lucie - Water/wastewater studies, 1994
- + Ocean Reef Club, Monroe County, Florida - Wastewater studies, 1994
- + Placid Lakes Utilities Inc., Florida - Water/wastewater studies, 1994
- + Old Overtown-Liberty Park, Birmingham, Alabama - Wastewater studies, 1994
- + Bullhead City, Arizona - Wastewater studies, 1994
- + Lehigh Utilities Inc., Lee County, Florida - Florida Public Service Commission rate cases for water, wastewater and reuse, 1993
- + Marco Island and Marco Shores Utilities Inc., Collier County, Florida - Florida Public Service Commission rate cases for water, wastewater and reuse, 1993
- + Venice Gardens Utilities Inc., Sarasota County, Florida - Rate cases for water, wastewater and reuse, 1989/91/93
- + Mid-Clay and Clay Utilities Inc., Clay County, Florida - Water/wastewater studies, 1993

Several expert witness assignments including Palm Bay vs. Melbourne; Tequesta vs. Jupiter; Town of Palm Beach vs. City of West Palm Beach; City of Sunrise vs. Davie; Kissimmee vs. Complete Interiors; and others.

Economic Evaluations/Credit Worthiness Analyses

- + Credit Worthiness Analysis for Drinking Water State Revolving Fund (1999) – Florida Department of Environmental Regulation
- + Credit Rating Reviews (1980-2000) – for numerous investor-owned utilities; many city-owned utilities (Winter Haven, Port St. Lucie, Miramar, Tamarac, Palm Bay, North Port, etc.); many county-owned utilities; several not-for-profit utilities; and utility authorities (OUA, etc.)
- + **Financial Feasibility and Engineer's Revenue Bond Reports (1980-2000)** – for over \$2 billion of water and/or wastewater bonds for some fifty (50) entities in the Southeast United States including Clay, Lee, Hernando, Martin, and other counties; Lakeland, West Palm Beach, Miramar, Tamarac, Panama City Beach, Winter Haven, Naples, North Port, Palm Bay, Port St. Lucie, New Port Richey, Clermont, Orange City, Deerfield Beach, Sanibel, City of Peachtree City, Widefield, and many other cities; Lee County Industrial Development Authority, Englewood Water District, and other utilities.
- + Privatization Procurement and Analysis for many water and wastewater systems including Sanibel, Town of Palm Beach, Temple Terrace, Palm Bay, Widefield, Bullhead City and sever others.

Negotiations/Service Area

Mr. Hartman has participated in over thirty-five (35) service area formations, Chapter 25 F.S. certifications, Chapter 180.02 reserve areas, authority creations, and interlocal service area agreements including Lakeland, Haines City, Bartow, Winter Haven, Sanibel, St. Cloud, Palm Bay, SBWA, ECFS, MWUC, Edgewater, Orange City, UCCNSB, Port St. Lucie, Martin County, OUA, NKLUA, DDUA, and many others

Mr. Hartman has been a primary negotiator for interlocal service agreements regarding capacity, joint-use, bulk service, retail service, contract operations and many others for entities such as the Town of Palm Beach, Miramar, Lauderdale-By-The-Sea, North Miami Beach, Collier County, Marion County, St. Johns County, JEA and many others.

Expert Testimony

Mr. Hartman has been accepted in various Circuit Courts, Florida Division of Administrative Hearings, Florida Public Service Commission, arbitration, and quasi-judicial hearings conducted by cities and counties, as a technical expert witness in the areas of electric systems, solid waste systems, stormwater systems, gas systems, wastewater systems and/or biosolids facilities, water supply, facility planning, water resources, water treatment, water quality engineering, water system design and construction, wastewater collection, wastewater transmission, wastewater treatment, effluent/reclaimed water use, sludge processing and disposal, costing, damages, rates/charges, service and service areas, and utility systems valuation and utility systems valuation. Recently, Mr. Hartman has been an expert witness on utility condemnation, utility arbitration, water rates and use permitting DOAH case, utility rate setting DOAH case, service area and utility service civil case, City of

Atlanta Water Treatment Plant Construction, City of Milwaukee Cryptosporidium, Jupiter vs. Tequesta Water Contract Services, Winter Park electric, Okeelanta/Osceola Power Plants, UCCNSB and many other condemnation cases. Mr. Hartman has been an expert witness in permitting and regulatory cases.

Mr. Hartman has given oral testimony on over 170 occasions over the past 35 years. He has assisted in the resolution of a similar number of matters without formal testimony.

DRAFT

DRAFT

TABLE OF CONTENTS

**SUMMARY APPRAISAL OF THE TEGA CAY WATER SERVICES
WATER AND WASTEWATER UTILITY SYSTEM**

TABLE OF CONTENTS

Section Number	Title	Page Number
	Letter of Transmittal	
	Valuation Certification	
	Gerald C. Hartman ASA Accreditation Certificate	
	Gerald C. Hartman, P.E., BCEE, ASA, Resume	
	Table of Contents	- i -
	List of Tables	- v -
	List of Figures	- v -
	List of Schedules	- v -
1.0	INTRODUCTION	
1.1	Project Scope and Authorization	1-1
1.2	Utility Identification	1-1
1.3	Ownership Interest	1-1
1.4	Purpose and Use of Appraisal	1-2
1.5	Important Valuation Definitions	1-2
1.6	Effective Date of Appraisal	1-5
1.7	Type of Property	1-5
1.8	Specialty Property – An Ongoing Utility Business	1-6
1.9	Going Concern, Intangibles, and Other Items	1-6
1.10	Summary of Data Collection	1-7
1.11	Summary of Confirmation Activities	1-7
1.12	Summary of Reporting Measures	1-7
1.13	Assumptions and Limiting Conditions	1-7
1.14	Significant Assumptions	1-11
1.15	Process and Procedures Followed	1-11
1.16	Highest and Best Use	1-11
1.17	Appropriate Market Used	1-11
1.18	Exclusions	1-12
1.19	Departures/Scope Limitations	1-12
1.20	Assumed Standard Terms and Conditions	1-12
1.21	Client	1-12

**SUMMARY APPRAISAL OF THE TEGA CAY WATER SERVICES
WATER AND WASTEWATER UTILITY SYSTEM**

**TABLE OF CONTENTS
(Continued)**

Section Number	Title	Page Number
2.0	DESCRIPTION OF WATER SYSTEM	
2.1	Overview	2-1
2.2	Water Supply	2-1
2.3	System Interconnect	2-3
2.4	Elevated Storage Tank	2-3
2.5	Transmission/Distribution	2-3
2.6	Hydrants	2-4
2.7	Customer Meters and Services	2-4
2.8	Historic Water Demand	2-5
2.9	Regulatory Compliance	2-5
3.0	DESCRIPTION OF WASTEWATER SYSTEM	
3.1	Overview	3-1
3.2	Wastewater Services	3-1
3.3	Gravity Collection System	3-3
3.4	Lift Stations	3-4
3.5	Force Mains	3-6
3.6	Wastewater Treatment Plants	3-6
	3.6.1 WWTP #2	3-6
	3.6.2 Regulatory Review – WWTP #2	3-8
	3.6.3 WWTP #3 and #4	3-11
	3.6.4 Regulatory Review – WWTP #3	3-12
4.0	VALUATION METHODS	
4.1	General	4-1
4.2	Cost Approach	4-1
	4.2.1 Depreciation Analysis	4-3
	4.2.1.1 Average Service Life Schedule	4-4
	4.2.2 Cost Determination	4-4
	4.2.3 Indirect Cost Components and Percentages	4-4
4.3	Income Approach	4-5
4.4	Comparable Sales Approach	4-7
4.5	Summary	4-8
5.0	COST APPROACH	
5.1	Introduction	5-1

**SUMMARY APPRAISAL OF THE TEGA CAY WATER SERVICES
WATER AND WASTEWATER UTILITY SYSTEM**

**TABLE OF CONTENTS
(Continued)**

<u>Section Number</u>	<u>Title</u>	<u>Page Number</u>
5.2	Replacement Cost Determination	5-1
5.3	Recommended Depreciation Schedule	5-3
5.4	Indirect Cost Components	5-4
5.5	Replacement Cost Analyses	5-5
	5.5.1 Water System	5-6
	5.5.2 Wastewater System	5-6
	5.5.3 Summary of RCNLD	5-6
	5.5.4 Land and Easements	5-7
	5.5.5 Fixtures, Equipment, etc	5-7
	5.5.6 Records Depreciated	5-7
	5.5.7 Deficiencies and Deferred	5-8
5.6	Functional Depreciation	5-8
5.7	External Depreciation	5-8
5.8	Going Concern	5-8
5.9	Replacement Cost New Less Depreciation	5-9
6.0	INCOME APPROACH	6-1
6.1	Introduction	6-1
6.2	Data Sources	6-1
6.3	Market Income Valuation Approaches	6-2
	6.3.1 Capitalization of Earnings	6-2
	6.3.2 Discounted Cash Flow	6-2
6.4	Income Approach Analysis	6-3
6.5	Value Indicated by the Income Approach	6-4
6.6	Consideration	6-5
7.0	COMPARABLE SALES APPROACH	
7.1	Introduction	7-1
7.2	Factors Influencing Utility Acquisitions	7-1
	7.2.1 System Assets	7-1
	7.2.2 Regulatory Compliance	7-2
	7.2.3 Competitive Market or Monopoly	7-2
	7.2.4 Method of Acquisition	7-3
	7.2.5 Context of Transaction	7-3
7.3	Market Summary	7-3
7.4	Selected Comparable Sales	7-4

**SUMMARY APPRAISAL OF THE TEGA CAY WATER SERVICES
WATER AND WASTEWATER UTILITY SYSTEM**

**TABLE OF CONTENTS
(Continued)**

<u>Section Number</u>	<u>Title</u>	<u>Page Number</u>
	7.4.1 Criteria	7-4
	7.5.2 Selected Comparable Sales	7-4
7.5	Adjustments to Purchase Prices	7-10
7.6	Analysis and Conclusions	7-11
8.0	RECONCILIATION OF VALUATION APPROACHES	8-1

APPENDICES

Appendix A	Assumed Standard Terms and Conditions
Appendix B	Inspection Notes
Appendix C	Inspection Photos
Appendix D	Wastewater Permits
Appendix E	Utilities, Inc. Letter Regarding System
Appendix F	System Improvements
Appendix G	WWTP Inspection Reports
Appendix H	York County Water Agreement
Appendix I	TCWS Tariffs
Appendix J	TCWS Monitoring Report
Appendix K	TCWS Progress Reports

DRAFT

SECTION 1

SECTION 1 INTRODUCTION

1.1 PROJECT SCOPE AND AUTHORIZATION

This is a Summary Appraisal Report (“Report”) of the Tega Cay Water Services (“TCWS”) water and wastewater system (“Utility”). The Utility is a privately owned system that provides service to a portion of the residents of the City of Tega Cay (“City”). The City and TCWS have authorized GAI Consultants, Inc. (“GAI”) to provide a valuation of the Utility. The valuation is intended to be used in a potential sale of the Utility between TCWS and the City.

1.2 UTILITY IDENTIFICATION

The Utility was originally completed in 1971 and is located in York County, South Carolina providing services to a primarily residential community within the City. Carolina Water Services, Inc. (“CWS”), a subsidiary of Utilities, Inc. purchased the Utility in 1991. The Utility is an active and operating system and, as privately owned, is regulated by the South Carolina Public Service Commission (“SCPSC”). The water system is also regulated by the South Carolina Department of Health and Environmental Control (“SCDHEC”) as Public Water Supply (“PWS”) No. 4650005 through the Utility’s wholesale water supply agreement with York County. The Wastewater system is also permitted by the National Pollution Discharge Elimination System (“NPDES”). The Utility is more fully described in **Section 2** and **Section 3** of this Report.

1.3 OWNERSHIP INTEREST

The assets are part of an ongoing system with facilities, permits, etc. and a going concern at the date of the appraisal. We have performed these services for the specified portion of property in “fee simple,” which includes all rights (the bundle of rights) that can be legally vested in an owner, subject to encumbrances whatever they may be. This fee simple ownership includes ownership of the assets, fee simple ownership of certain real property, easement rights, water operational rights, water use allocation rights, any exclusive certificated area/franchise property rights, as well as

other tangible and intangible assets. In other words, the fee simple value has been determined, without deduction for any liens or other encumbrances that may exist. Fee simple ownership is the most comprehensive type of ownership since the owner may dispose of the property in any manner they select. One possessing this property has no restrictions or limitations upon ownership except those imposed by governmental entities and those which were willfully created by agreement.

This appraisal does not contain a separate valuation of the fee simple land which contains the assets. For purposes of this Report, it is assumed the value of real estate is \$300,000. This is a significant assumption for the purpose of this Report and could affect an opinion of value for the Utility. If a real estate appraisal is performed, then the value found should replace the assumed amount shown.

1.4 PURPOSE AND USE OF APPRAISAL

The purpose of this appraisal is to provide the City and TCWS with the appraised value of the Utility. The use of the appraisal is for the potential sale of the Utility between the City and TCWS. The users of this Report could include the City, TCWS, as well as the consultants, attorneys, financial underwriters, bond rating agencies, and insurers for the prospective transaction.

1.5 IMPORTANT VALUATION DEFINITIONS

Appraisal – (noun) the act or process of developing an opinion of value; an opinion of value. (adjective) of or pertaining to appraising and related functions such as appraisal practice or appraisal services.¹

Client – the party or parties who engage, by employment or contract, an appraiser in a specific assignment.²

Easement – an interest in real property that conveys use, but not ownership, of a portion of an owner's property.³

¹ Uniform Standards of Professional Appraisal Practice ("USPAP"), 2014-2015 Edition, Published by the Appraisal Foundation, Page U-1

² *Ibid*, Page U-2

³ The Dictionary of Real Estate Appraisal, 4th Edition, Published by the Appraisal Institute, Page 90.

Fee Simple – absolute ownership unencumbered by any other interest or estate, subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat.⁴

Highest and Best Use – (in appraising real property) the reasonably probable and legal use of vacant land or an approved property that is physically possible, appropriately supported, and financially feasible and that results in the highest value.⁵

Hypothetical Condition – a condition, directly related to a specific assignment, which is contrary to what is known by the appraiser to exist on the effective date of the assignment results, but is used for the purpose of analysis.⁶

Intended Use – the use or uses of an appraiser’s reported appraisal or appraisal review opinions and conclusions, as identified by the appraiser based on communication with the client at the time of the assignment.⁷

Intended User – the client and any other party as identified, by name or type, as users of the appraisal, appraisal review, or appraisal consulting report by the appraiser on the basis of communication with the client at the time of the assignment.⁸

Jurisdictional Exception – an assignment condition established by applicable law or regulation, which precludes an appraiser from complying with part of USPAP.⁹

Larger Parcel – (in condemnation) the tract or tracts of land that are under the beneficial control of a single individual or entity and have the same, or an integrated, highest and best use. Elements for consideration by the appraiser in making a determination in this regard include contiguity, or proximity, as it bears on the highest and best use of the property, unity of ownership, and unity of highest and best use. The larger parcel is sometimes referred to as the “parent tract.”¹⁰

⁴ The Appraisal of Real Estate, 12th Edition, Published by the Appraisal Institute, page 68.

⁵ *Ibid*, page 305

⁶ USPAP, page U-3

⁷ *Ibid*, page U-3

⁸ *Ibid*, page U-3

⁹ *Ibid*, page U-3

¹⁰ The Dictionary of Real Estate Appraisal, 4th Edition, Published by the Appraisal Institute, page 160

Leased Fee Estate – a lessor’s, or landlord’s, interest with specified rights that include the right of use and occupancy conveyed by lease to others: the rights of the lessor (the leased fee owner) and the lessee (leaseholder) are specified by contract terms contained within the lease.¹¹

Market Value – (in appraisal practice) a type of value, stated as an opinion, that presumes the transfer of a property (i.e. a right of ownership or bundle of such rights), as of a certain date, under certain conditions set forth in the definition of the term identified by the appraiser as applicable in an appraisal.¹²

Market Value – (for purpose of analysis) the estimated amount for which a property should exchange on the date of valuation between a willing buyer and a willing seller in an arm’s length transaction after proper marketing wherein the parties had each acted knowledgeably, prudently, and without compulsion.¹³

Remainder – (in condemnation) is that portion of a larger parcel remaining in the ownership of the property owner after a partial taking.¹⁴

Replacement Cost New (RCN) – the current cost of a similar new property having the nearest equivalent functionality as the property being appraised, as of a specific date.¹⁵

Reproduction Cost New – the current cost of producing a new replica of a property with the same, or closely similar materials, as of a specific date.¹⁶

Report – any communication, written or oral, of an appraisal or appraisal review that is transmitted to the client upon completion of an assignment.¹⁷

¹¹ The Appraisal of Real Estate, 12th Edition, Published by the Appraisal Institute, Page 81

¹² USPAP, page U3

¹³ International Valuation Standards, 2000 Edition, Published by the International Valuation Standards Committee, Pages 92-93

¹⁴ The Dictionary of Real Estate Appraisal, 4th Edition, Published by the Appraisal Institute, Page 242

¹⁵ Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition, Published by American Society of Appraisers, page 585.

¹⁶ *Ibid*, page 585.

¹⁷ USPAP, page U-4.

Self-Contained Appraisal Report – a written report prepared under Standards Rule 2-2(a) or 8-2(a) of a Complete or Limited Appraisal performed under STANDARD 1 or STANDARD 7.¹⁸

Severance Damages – the diminution of the market value of the remainder area, in the case of a partial taking, which arises (a) by reason of the taking (severance), and/or (b) the construction of the improvements in the manner proposed.¹⁹

Summary Appraisal Report – a written report prepared under Standards Rule 2-2(b) or 8-2(b) of a Complete or Limited Appraisal performed under STANDARD 1 or STANDARD 7.²⁰

Taking – the acquisition of a parcel of land through condemnation.²¹

Value – (in appraisal practice) the monetary relationship between properties and those who buy, sell, or use the properties.²²

Value – (economic) the amount, relative worth, functionality, or importance of an item, which may or may not be equal to price or cost.²³

1.6 EFFECTIVE DATE OF APPRAISAL

The effective date of appraisal is November 15, 2013.

¹⁸ USPAP, Page U-21

¹⁹ American Institute of Real Estate and the Society of Real Estate Appraisers. Real Estate Appraisal Terminology, rev. ed. Byrl N. Boyce, ed. (Cambridge, Mass: Ballinger Publishing Company, 1981), Page 69

²⁰ USPAP, page U-21

²¹ The Dictionary of Real Estate Appraisal, 4th Edition, Published by the Appraisal Institute, Page 285

²² USPAP, page U-4

²³ Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition, Published by American Society of Appraisers, Page 594

1.7 TYPE OF PROPERTY

The Utility operates as a special purpose property permitted as a public water and wastewater system. The system is provided the rights thereof by the State of South Carolina, and by contract, assemblage, and other means. Such properties have the configuration of a customer base and utilize the local natural resources via permit rights, etc. of the specific community that the facilities, operations, and management serve.

1.8 SPECIALTY PROPERTY – AN ONGOING UTILITY BUSINESS

The Utility includes assets, customers, its service area and all other attributes of a fully functioning utility business. The utility system is considered a special purpose property. There are four (4) criteria which establish whether property should be considered special purpose property:

- a. Uniqueness;
- b. Property must be used for a special purpose;
- c. No widespread market for the type of property;
- d. The property's use must be economically feasible and reasonably expected to be replaced.

The function of this utility property is to supply potable water and wastewater treatment services in specific service areas of the City. The utility system was specially built for the specific purposes for which it was designed, and continues to be used for those purposes.

There is no question that with any purchase or acquisition of the Utility, that those assets would continue to be substantially used for utility purposes and they would continue to be renewed, replaced and/or maintained for such purposes.

1.9 GOING CONCERN, INTANGIBLES, AND OTHER ITEMS

In the valuation of utility property using the cost approach, it must be recognized that the replacement cost new less depreciation ("RCNLD") only represents the component of value of the physical assets. Those assets, however, are not idle, but are used to

provide service within the service area to a customer base as part of an ongoing business operation. In other words, the value of a “live” utility functioning as an ongoing business must be considered as part of an appraisal.

Any purchaser would acquire a utility system completely installed and operational with customers taking regular service and therefore, immediately derive revenues at the full complement of connected customers as well as purchase all permitted rights for water supply and operations and the future right to service the remainder of the service area. Similarly, if a purchaser were to construct, in a hypothetical situation, its own utility system, it would not have the ability to generate revenues from a full complement of customers or have the ongoing bundle of rights for this specific geographic area and would be required to successfully obtain permits to provide service and such permits could be contested.

1.10 SUMMARY OF DATA COLLECTION

Data collection on this assignment involved records of GAI, Utilities, Inc. records, City records, records of the Utility’s consulting engineering firms, and other public sources of information.

1.11 SUMMARY OF CONFIRMATION ACTIVITIES

A variety of analyses and surveys were used to confirm and/or cross-check the data and information provided. Calls, comparisons of reports, field inspections, records testing, and comparisons of source information were accomplished.

1.12 SUMMARY OF REPORTING MEASURES

This Report is a Summary Appraisal Report with disclosures included.

1.13 ASSUMPTIONS AND LIMITING CONDITIONS

- a. No responsibility is assumed for legal matters, nor is any opinion on the title rendered herewith. We assume that the title to the property is good and marketable.

- b. All existing liens and encumbrances, if any, have been disregarded and the property appraised as though it was free and clear.
- c. The appraiser has made no survey of the property and, unless specifically stated, assumed there are not encroachments involved.
- d. The sketches and maps in this Report are included to assist the reader in visualizing the property and are not necessarily to scale or depict all items above or below ground.
- e. It is assumed that the property is in full compliance with all applicable federal, state, and local environmental regulations and laws unless non-compliance is stated, defined, and considered in this Report.
- f. It is assumed that all applicable zoning and use regulations and restrictions have been complied with, unless a non-conformity has been stated, defined, and considered in this Report.
- g. It is assumed that all required licenses, certificates of occupancy, consents, and other legislative or administrative authority from any local, state, or national government or public entity or organization have been or can be obtained or renewed for any use on which the value estimate in this Report is based.
- h. Proposed improvements, if any, on or off-site, as well as any repairs required, are considered for purposes of this appraisal to be completed in a good and workmanlike manner.
- i. Furnishings, mobile equipment, tools, or business furniture and utility management items indicated and typically considered as part of real estate and/or major personal property item have been aggregated and valued as fixtures, equipment, rolling stock, and inventory.
- j. Responsible ownership and competent property management are assumed.

- k. It is assumed that there are no hidden or unapparent conditions of the property, soil, or structures which would render it more or less valuable.

Further, unless otherwise stated in this Report, the existence of hazardous material or any other environmental problems or conditions, which may or may not be present on the property, was not observed or disclosed. We have no knowledge of the existence of such materials or conditions on or in such close proximity that it would cause a loss in value. We, however, did not search to detect such substances or conditions. The presence of substances such as asbestos, ureaformaldehyde foam insulation, radon, or other potentially hazardous materials which could have an adverse effect on the value of the property were not observed or detected in our inspections. The value estimate is predicated on the assumption that there is no such material or condition on or in the property that would cause a loss in value. No responsibility is assumed for any such conditions, or for any expertise or knowledge required to discover them.

- l. No responsibility is assumed for the absence or presence of any endangered species on this property. This appraisal assumes that there are no endangered species which would prevent, restrict, or adversely affect any development or improvement of this property.
- m. No impact studies and/or special market, or feasibility analysis or studies have been required or made unless otherwise specified. We reserve the right to alter, amend, revise, or rescind any of the statements, findings, opinion, value estimates, or conclusions contained herein if any of these studies require it.
- n. Certain data used in compiling this report was furnished from sources which we consider reliable; however, we do not guarantee the correctness of such data, although so far as possible, we have checked and/or verified the same and believe it to be accurate.

- o. We have accepted as correct and reliable all information provided by the owner and owner's counsel, or the owner's agents, which was used in the preparation of this Report. All data came from sources deemed reliable, but no liability is assumed for omissions or inaccuracies that subsequently may be disclosed in any data used in the completion of the appraisal.
- p. Since the date of value of the property is not an actual trial date, the appraiser reserves the right to consider and evaluate any additional value influencing data and/or other pertinent factors that might become available between the date of this Report and the date of trial if applicable, and to make any adjustments to the Report that may be required.
- q. Neither I, nor anyone employed by me, has any present or contemplated interest in the property appraised.
- r. Possession of this Report, or copy thereof, does not carry with it the right of publication, nor may it be used for any purpose by anyone except for the client without the prior written consent of the client and in any event, only in its entirety and with proper qualification.
- s. Neither all nor any part of the contents of this report shall be conveyed to the public through advertising, public relations, news, sales, or other media without the written consent and approval of the author excepting appropriate Freedom of Information Act requests.
- t. No other legal agreements, customer agreements, developer agreements or other utility-related agreements were disclosed or provided and therefore have not been included in this Report.
- u. It is assumed that any and all permits and easements can be transferred in the event of an acquisition with minimal effort.
- v. Acceptance of, and/or use of, this Report constitutes acceptance of the above conditions and assumptions.

1.14 SIGNIFICANT ASSUMPTIONS

The following significant assumptions were used in this work:

- a. For purposes of this Report, it is assumed the value of real estate is \$300,000,
- b. For purposed of this Report, the income approach conducted is as agreed by the parties as a not-for-profit or tax free entity,
- c. No major construction work is in progress, and no hypothecated corrective future construction activity is considered to be accomplished by the Utility,
- d. An amount of \$950,000 is used for a deduct for any buyer, constituting the need for corrective improvements, and
- e. All assets are to be sold "as-is" without warranties or guarantees.

1.15 PROCESS AND PROCEDURES FOLLOWED

The process utilized was confirming the valuation assignment, gathering the necessary information for the appraisal activities, conducting, evaluating and considering the cost approach under a replacement cost new less depreciation in continued use, the income approach, and finally the sales comparison approach. Following the determinations from each distinct approach, Mr. Gerald C. Hartman weighed the approaches utilizing his training, experience, and knowledge of the market and the subject system. Following the weighting of the approaches, an Opinion of Value was determined and reported in this Summary Appraisal Report.

1.16 HIGHEST AND BEST USE

The highest and best use for the Utility is as a public water and wastewater system. Note that the use of the utility system is a monopoly and creates a special purpose property and also has the characteristics of an essential use. Since the assets are specifically designed, configured, and constructed solely for the public water utility system use, no alternate highest and best use was considered.

1.17 APPROPRIATE MARKET USED

The appropriate market for the Utility is as a special purpose utility system providing for utility service in the public utility market.

1.18 EXCLUSIONS

This appraisal has excluded the following aspects of the Utility and those aspects are not included in the Opinion of Value delineated herein:

- a. Utility's cash equivalents, accounts receivable and deferred tax assets;
- b. Assumption of liabilities of the Utility;
- c. Assets owned by other associated parties; and
- d. Activities, rights, and privileges of other associated parties.

In other words, this appraisal is of the assets of the Utility.

1.19 DEPARTURES/SCOPE LIMITATIONS

This appraisal has no known departures or scope limitations.

1.20 ASSUMED STANDARD TERMS AND CONDITIONS

The standard terms and conditions commonly used in the water and wastewater industry are assumed for this appraisal (see **Appendix A** for a list of the Standard Terms and Conditions). The purchase price would be as a cash purchase in U.S. Dollars at the time of closing. It is assumed that the property has sufficient time on the market for proper and complete disclosure and investigation by the not-for-profit marketplace. There are no limitations relative to exposure, financing, futures, prepaid or discounted connections, or other factors. We assume that no properties are vested or have prepaid capacity or discounted connections in any fashion whatsoever.

1.21 CLIENT

The Clients for this Report are both the City and TCWS.

DRAFT

SECTION 2

SECTION 2 DESCRIPTION OF THE WATER FACILITES

2.1 OVERVIEW

The TCWS water system consists of several components that are required to provide potable water service to customers. The description herein are based upon field inspections conducted on November 15, 2013 (see **Appendix B**), engineering drawings, overall utility maps, regulatory permits, previous engineering reports, interviews with TCWS personnel, information from the SCDHEC, and information contained in the Annual Reports filed with the SCPSC.

Figure 2-1 presents the location of the water service area, supply wells, interconnects, and elevated storage tanks. The water system consists of the following components:

1. Elevated Storage Tank,
2. Interconnect with York County,
3. Transmission and Distribution System,
4. Hydrants, and
5. Customer Services and Meters.

GAI personnel inspected the Utility on November 15, 2013 and the inspection pictures are attached in **Appendix C**.

2.2 WATER SUPPLY

In 1993, TCWS entered into a bulk purchase agreement (“Agreement”) with York County for water supply for a twenty (20) year term (see **Appendix H**).

The original seven (7) water supply wells used for the TCWS water system have been decommissioned. At one time, these wells were the source of supply for the water system, however the water quality is high in iron and the wells are prone to fouling with iron bacteria.

Insert Figure 2-1

DRAFT

2.3 SYSTEM INTERCONNECT AND AGREEMENT WITH YORK COUNTY

The wholesale water supply agreement entered into with York County allows TCWS to purchase potable water necessary to provide service to users within the City. The agreement also restricts TCWS from operating system wells for the purpose of supplying water (Section 4.0 of the Agreement). The bulk water meter is owned by the County and consists of a 1.5"-6" compound meter and a 10-inch flow meter.

2.4 ELEVATED STORAGE TANK

The system elevated storage tank is located central to the water system at the community golf course. The tank has a hydrosphere configuration and a volume of 250,000 gallons. Originally constructed in 1971, the tank interior was repainted in the early 1980's, and again in early-1990 and 2010. The tank exterior was also repainted in the early 1980's, and again in the early 1990's and 2010. The interior of the tank was last inspected in 2012 as part of the Utility's annual inspection and routine maintenance program. The water level in the tank is controlled by an altitude valve that is operated by York County by remote telemetry. Overall, the elevated tank appeared to be in good condition.

2.5 TRANSMISSION/DISTRIBUTION SYSTEM

The water transmission/distribution system conveys potable water to TWCS customers and currently contains approximately 127,441 linear feet of pipe ranging in size from 1.5 to 12 inches in diameter. The pipe is constructed of various materials including polyvinyl chloride ("PVC"), cast iron ("CIP"), and ductile iron ("DIP"). **Table 2-1** provides a listing of the water transmission/distribution mains by size and type.

**TABLE 2-1
TEGA CAY WATER SERVICES, INC.
WATER TRANSMISSION AND DISTRIBUTION MAINS ⁽¹⁾**

Size (in)	Material	Length (ft)
12"	DIP	2,080
10"	DIP	1,480
8"	DIP	3,660
12"	CIP	1,510
10"	CIP	1,750
14"	PVC	1,650
8"	PVC	15,043
6"	PVC	37,077
4"	PVC	27,693
3"	PVC	3,999
2"	PVC	29,981
1.5"	PVC	1,518
TOTAL		127,441

Notes:
(1) Source: 2012 TCWS Annual Report System Drawings

2.6 HYDRANTS

The water system is equipped with 80 hydrants to provide fire protection throughout the system. These hydrant assemblies were installed between 1971 and 1996.

2.7 CUSTOMER METERS AND SERVICES

Potable water from the transmission/distribution system is delivered to customers through water services and meters. As of December 31, 2012, the system had a total of 1,752 customers (TCWS Annual Report). It has been represented to GAI that all meters in the system are 5/8 x 3/4 inches in size. Using AWWA meter equivalents, the system has an estimated 1,752 single-family equivalents ("ERC").

2.8 HISTORIC WATER DEMANDS

The annual average daily demand (AADD) for the system has ranged from 0.27 MGD to 0.31 MGD between 2009 and 2013 (see **Schedule 2-1**). The maximum daily demand (MDD) for the same period has ranged from 0.33 MGD to 0.37 MGD. The MDD to AADD ratio has varied from 1.2 to 1.3, which is typical for a largely residential community. Among residential communities, the seasonality of demand is most likely attributed to irrigation in the summer months. The peaking in seasonality for this system has declined relatively significantly since the late-1990's (previous peak ratios ranged from 1.7 to 1.8). A greater focus on water conservation, particularly with irrigation, is presumed to have contributed to this decline in peak water demands. Demand per ERC in 2012 was approximately 158 gpd.

2.9 REGULATORY COMPLIANCE

The water system is regulated by the SCDHEC as PWS no. 4650005. Since TCWS purchases water wholesale from York County, the utility is not required to submit monthly operating reports. The Utility is responsible, however, for maintaining regulatory standards within the transmission/distribution system. The water system was last inspected for regulatory compliance by SCDHEC, which indicates the system is in general compliance with regulations.

Schedule 2-1
Tega Cay Water Services, Inc.
Water Demand

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
2009	5,973,500	6,648,788	9,185,066	8,692,485	8,611,500	8,573,875	11,199,296	10,088,240	10,654,877	8,492,222	8,121,786	7,216,917	103,458,552
2010	6,983,246	8,443,014	6,768,312	9,116,857	9,654,451	9,711,327	11,156,285	11,223,305	11,108,349	9,983,999	8,595,009	7,191,368	109,935,522
2011	8,189,810	7,212,276	6,820,476	8,362,551	8,080,155	9,963,654	9,085,770	10,399,527	9,793,922	8,952,042	7,362,040	7,153,427	101,375,650
2012	7,136,519	7,388,148	6,348,147	8,473,843	9,623,734	9,867,606	10,054,305	9,047,538	8,774,505	8,070,034	8,183,927	7,386,489	100,354,795
2013	8,573,397	7,022,086	6,606,774	7,244,700	7,490,865	8,769,060	8,041,312	7,719,788	9,538,718	8,285,249			93,853,695
Days->	31	28	31	30	31	30	31	31	30	31	30	31	365
mgd													
2009	0.193	0.237	0.296	0.290	0.278	0.286	0.361	0.325	0.355	0.274	0.271	0.233	0.28
2010	0.225	0.302	0.218	0.304	0.311	0.324	0.360	0.362	0.370	0.322	0.287	0.232	0.30
2011	0.264	0.258	0.220	0.279	0.261	0.332	0.293	0.335	0.326	0.289	0.245	0.231	0.28
2012	0.230	0.264	0.205	0.282	0.310	0.329	0.324	0.292	0.292	0.260	0.273	0.238	0.27
2013	0.277	0.251	0.213	0.241	0.242	0.292	0.259	0.249	0.318	0.267			0.31

DRAFT

DRAFT

SECTION 3

SECTION 3 DESCRIPTION OF THE WASTEWATER FACILITIES

3.1 OVERVIEW

The TCWS wastewater system consists of several components that are required to provide wastewater services to customers. The description herein is based upon field inspections conducted on November 15, 2013 (see **Appendix B**), engineering drawings, overall utility maps, regulatory permits, previous engineering reports, interviews with TCWS personnel, information from the SCDHEC, and information contained in the Annual Reports filed with the SCPSC.

Figure 3-1 presents the wastewater service area and the location of the major system components. The wastewater system consists of the following components:

1. Wastewater services,
2. Gravity Collection System,
3. Lift Stations,
4. Force Mains, and
5. Three (3) wastewater treatment plants (combined 0.86 MGD capacity).

GAI personnel inspected the Utility on November 15, 2013 and the inspection pictures are attached in **Appendix C**.

3.2 WASTEWATER SERVICES

The wastewater services convey the wastewater from customers to the gravity collection system. Like water services, wastewater service can be either single (serving one customer) or double (serving two adjacent customers) and are constructed of PVC or vitrified clay (“VCP”) pipe. After a review of the available system drawings, it appears that there are predominately single wastewater services. As of December 31, 2012, there were 1,720 active wastewater customers in the TCWS service area (TCWS Annual Report).

Insert Figure 3-1

DRAFT

3.3 GRAVITY COLLECTION SYSTEM

The TCWS gravity collection system serves to gather wastewater from the customer services and convey it to the system lift stations for pumping. The piping is constructed of VCP and PVC and ranges in size from 8 to 12 inches in diameter. There is a total of 156,832 feet of collection piping in the system. **Table 3-1** provides a summary of the piping system. The collection system is constructed to take advantage of the natural contours of the service area. The collection system starts in the upper elevations and travels down to the shores of Lake Wylie where the system lift stations are located. As such, the depth of piping rarely exceeds 12 feet of depth.

**TABLE 3-1
TEGA CAY WATER SERVICES, INC.
GRAVITY COLLETION SYSTEM ⁽¹⁾**

Size (in)	Material	Length (ft)
12"	VC	13,880
8"	VC	82,976
12"	PVC	2,620
8"	PVC	57,356
TOTAL		156,832

Notes:

(1) Source: System Drawings

There are also 1,025 manholes in the collection system of varying depths corresponding to the depths of the gravity piping. The majority of manholes are constructed of precast concrete with cast iron rims and covers. Some manholes in the older sections of the system are constructed with brick. A total of 900 manholes were evaluated as part of the system inspection. An attempt was made to inspect at least the manholes prior to each lift station, however, in some cases they were difficult to locate. Since the major collection system trunk lines are located in the back yards of residences, many manholes were covered by grass and dirt, located within private landscaping, or used as a platform for potted plants. This presents a severe problem to access for cleaning and maintenance, as well as potential inflow. Another concern is the location of the facilities in relation to established easements.

Throughout the inspections, it was noted at several manholes located adjacent to the shore of Lake Wylie that there was a significant amount of clear water flow indicating infiltration. Since 1997, an inflow/infiltration (“I/I”) reduction program has been ongoing in the system to address the I/I in the system. The program includes pressure cleaning 10% of the system annually, conducting camera inspections, and making point repairs to problem areas. The program also includes sealing or raising manholes where inflow is a problem.

3.4 LIFT STATIONS

Following the collection of the wastewater by the gravity mains, the wastewater flows to a series of lift stations. Flows which enter the lift stations are pumped out to either an adjacent collection system and then subsequent re-pumping or to the wastewater treatment plants for treatment. There are a total of twenty (20) lift stations in the TCWS system. **Table 3-2** provides a summary of the lift stations.

Eighteen (18) of the lift stations have submersible type pumps and two (2) are wet/dry pit units. Lift Stations #2, 3, 14, and 15 were recently converted from wet/dry pit to submersible type pumps. In addition, Lift Station #12 recently underwent significant rehab in 2010. Most of the lift stations are located adjacent to Lake Wylie in the back yards of private residences. Although there are easements for the lift stations, it is unclear as to whether the facilities are actually located in the easements. Also, some of the lift stations are difficult to access with equipment in the event a pump needs to be removed or the pump station cleaned.

Based on GAI’s field inspections, the lift stations range from good to fair condition with most being average. According to TCWS personnel, the lift stations are routinely inspected and periodically cleaned.

**TABLE 3-2
TEGA CAY WATER SERVICES, INC.
LIFT STATION SUMMARY ⁽¹⁾**

Lift Station No.	Lift Station Address	Wetwell Diameter	Wetwell Depth (ft)	Motor (hp)	Capacity	Year Installed	Notes
1	1077 Gauguin Ln	8'	20'	2	165 gpm @ 21' TDH	1983	Submersible station
2	2087 Marquesas Ave	8'		7.5	260 gpm @ 48' TDH	2012	Submersible station (converted)
3	3025 Point Clear Dr	8'	22'	2	100 gpm @ 20' TDH	2012	Submersible station (converted)
4	4013 Winward Dr		5'	7.5	100 gpm @ 60' TDH	1971	Wet/dry pit
5	7001 Tega Cay Dr			1.5	150 gpm @ 17' TDH	1993	
6	27056 Catamaran Dr	6'	27'	2	170 gpm @ 22' TDH	1992	
7	7036 Wind Jammer Dr	6'	9'	10	100 gpm @ 94' TDH	1973	
8	8021 Palau Ct	6'	30'	1.5	136 gpm @ 25' TDH	1994	
9	9043 Spanish Wells		12'	1.5	165 gpm @ 22' TDH	1994	
10	10012 Bora Pora			1.5	147 gpm @ 22' TDH	1993	
11	10043 Tapa Pl		25'	1.5	146 gpm @ 22' TDH	1994	
12	11002 Cattail Bl	8'	27'	20	420 gpm @ 104' TDH	1990	Wet/dry pit
13	8022 Kitridge Bay			2	26 gpm @ 60' TDH	1973	Submersible station
14	WWTP #2			7.5	250 gpm @ 40' TDH	2011	Submersible station (converted)
15	WWTP #3			5	250 gpm @ 30' TDH	2011	Submersible station (converted)
16	29023 Beaver Run			2	23 gpm @ 49' TDH	1986	Submersible station
17	11037 Seven Caves Dr	10'	15'	10	483 gpm @ 43' TDH	1988	Submersible station
18	11079 Deep Cover Dr	10'	13'	7.5	375 gpm @ 49' TDH	1990	Submersible station
19	11172 Waterrave Dr	10'		7.5	195 gpm @ 49' TDH	1990	Submersible station
20	WWTP #4 (not in service)			25	1,388 gpm @ 24' TDH	1990	Submersible station

Notes:

(1) Source: Utility records, site inspections.

3.5 FORCE MAINS

The collected wastewater which enters the lift stations is then pumped and transferred to the wastewater treatment plant via a system of force mains. The force main system is made up of approximately 5,610 feet of pipe ranging in size from 4 inches to 8 inches in diameter. The primary pipe material is PVC and DIP. In many cases, single force main runs are less than 50 feet to convey the wastewater to the next collection system. **Table 3-3** provides a summary of the force mains.

**TABLE 3-3
TEGA CAY WATER SERVICES, INC.
WASTEWATER TRANSMISSION MAINS ⁽¹⁾**

Size (in)	Material	Length (ft)
4"	PVC	3,600
8"	DIP	1,300
4"	DIP	710
TOTAL		5,610

Notes:

(1) Source: System Drawings

3.6 WASTEWATER TREATMENT PLANTS

TWCS owns three (3) wastewater treatment plants ("WWTP") that each discharge treated effluent into Lake Wylie. WWTPs 2 and 3 are operated to serve the current load. Sludge generated by the facilities is dewatered and the cake is hauled to be landfilled. The WWTPs are designated as number 2, 3, and 4. WWTP number 1 has been decommissioned and removed.

3.6.1 WWTP #2 DESCRIPTION

WWTP #2 is a Davco package plant recently converted to ultra-violet ("UV") disinfection. The facility was constructed in 1971 and has a rated capacity of 320,000 gpd. In addition to the treatment unit there is a concrete block operation building that houses the support equipment for the WWTP and a corrugated metal shed that is used

for spare parts storage. **Table 3-4** provides a listing of the major equipment of WWTP #2.

**TABLE 3-4
TEGA CAY WATER SERVICES, INC.
WWTP #2 MAJOR EQUIPMENT ⁽¹⁾**

Component	Description	
Treatment Unit	Manufacturer	Davco Package Plant
	Capacity	320,000 gallons-per-day (gpd)
	Structure	Concrete tank with steel interior walls
	Process	UV disinfection (Trojan 3000 unit)
	Aeration Method	Diffused
	Process basins:	
	Contact	39,891 gallons
	Re-aeration	79,789 gallons
	Clarifier type	Circular center feed (area = 252 sq ft)
	Chlorination	6,582 gallons
Aerobic Digestion	71,808 gallons	
Blowers	Manufacturer/make	Hoffman
	Capacity	972 scfm
	Type	Centrifugal
	Horsepower	75 hp
	Count	2
Generator	Manufacturer/make	Onan
	Output rating	250 kW
	Diesel Storage Tank	300 gallons
Operations building		Concrete block, app. 2,000 sq ft
Storage building		Corrugated metal, app. 100 sq ft

Notes:

(1) Source: System Drawings

Lift Station No. 14 is located on-site and acts as the main pump station for WWTP #2, transferring the wastewater to the treatment unit. WWTP #2 is constructed of a concrete outer tank with steel interior walls. The wastewater from Lift Station No. 14 is discharged into a small metal influent box outfitted with two bar racks for screening and then flows into the contact basin. Diffused air is injected into the contact basin to provide oxygen for the process and to keep the wastewater well mixed. The resulting mixed liquor then flows to the clarifier for solids removal. The solids that settle in the clarifier are withdrawn from the bottom via an airlift and discharged to either the

stabilization basin as return activated sludge or to the digester as waste activated sludge.

Waste activated sludge generated by the process is digested aerobically in a separate compartment of the treatment units and periodically hauled for stabilization and land application. At the time of inspection, the digester was not being aerated to allow for decanting. Air is supplied to the process by two 75 horsepower Hoffman blowers located in the operations building. The building also houses a 250 kW diesel generator that keeps the facility operational during power outages. Fuel for the generator is stored in a 300 gallon diesel fuel storage tank is located exterior to the building.

A separate room of the building houses the chlorination feed equipment. The chlorination system consists of 150 lb chlorine cylinders, dual cylinder scale and a Wallace and Tiernan (W&T) V100 chlorinator. The chlorination room is equipped with an exterior switch and an exhaust fan. The sulfur dioxide feed system, used for dechlorination, is located in a small fiberglass housing. The sulfur dioxide feed equipment is nearly identical to the chlorination system in that it includes 150 lb cylinders, a dual scale and W&T metering system.

In general, the facility appeared to be operating well and is in average condition given the facility's age.

3.6.2 WWTP #2 REGULATORY REVIEW

WWTP #2 is permitted under NPDES permit #SC0026743 which became effective on September 14, 2010 and expires October 31, 2015 (see **Appendix D**). **Table 3-5** provides details on the permit limitations. The WWTP has consistently met the permit limitations except with respect to flow.

A Compliance Evaluation Inspection ("CEI") was conducted at the facility by SCDHEC on September 23, 2013 and received a satisfactory rating (see **Appendix G**).

**TABLE 3-5
TEGA CAY WATER SERVICES, INC.
NPDES PERMIT #SC0026743
EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

EFFLUENT CHARACTERISTICS	Discharge Limitations				Monitoring Requirement		
	Pounds per Day		Other Units		Measurement Frequency	Sample Type	Sample Point
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum			
Flow	- ⁽³⁾	- ⁽³⁾	MR MGD	MR MGD	Daily	Cont.	Eff.
BOD	80	160	30 mg/l	60 mg/l	2/month	24 Hr C	Eff.
TSS	80	160	30 mg/l	60 mg/l	2/month	24 Hr C	Eff.
NH-N (Mar-Oct)	41	82	15.3 mg/l	30.6 mg/l	2/month	24 Hr C	Eff.
NH-N (Nov-Feb)	MR	MR	MR mg/l	MR mg/l	2/month	24 Hr C	Eff.
Fecal Coliform	-	-	200/100 ml	400/100 ml	2/month	Grab	Eff.
TRC ⁽²⁾	0.30 ⁽²⁾	0.51 ⁽²⁾	0.111 mg/l	0.192 mg/l	2/month	Grab	Eff.
Copper, Total	MR	MR	MR mg/l	MR mg/l	1/quarter	24 Hr C	Eff.
DO	-	-	2.0 mg/l minimum at all times		Daily	Grab	Eff.
pH	-	-	6.0 – 8.5 Standard Units		Daily	Grab	Eff.
Total Phosphorus	0.987	MR	0.43 mg/l	MR mg/l	1/month	24 Hr C	Eff.

Notes:

(1) Source: NPDES Permit #SC0026743

(2) Since UV disinfection is used at this facility, TRC limits are applicable only if chlorine or chlorine-based disinfection is utilized. Report zero (0) for both mass and concentration otherwise.

(3) Permitted flows for WWTP No. 2 = 0.32 MGD

3.6.4 WWTP #3 AND #4 DESCRIPTION

WWTP #3 is very similar to WWTP #2. The facilities were constructed at the same time and are both Davco package plants that have been converted to UV disinfection. WWTP #3 is located very close to WWTP #4 with which it shares a common effluent discharge point. WWTP #4 is currently off-line and serves in a back-up capacity to WWTP #3. WWTP #4 was constructed in 1989.

WWTP #3 is rated as a 320,000 gpd MLE WWTP and WWTP #4 has a rated capacity of 250,000 gpd. At WWTP #3, identification occurs in the process. Sodium Aluminate is added to precipitate to remove phosphorous. WWTP #4 utilizes the extended aeration process to treat the wastewater. WWTP #3 has requirements for both TN and TP removal/limitations. Moreover, the toxicity criteria drove the installation of UV disinfection at WWTP #3. Both WWTP #3 and #4 visually appear to be in good condition. **Table 3-6** provides a listing of the major equipment of WWTP #3.

DRAFT

**TABLE 3-6
TEGA CAY WATER SERVICES, INC.
WWTP #3 MAJOR EQUIPMENT ⁽¹⁾**

Component	Description	
Treatment Unit	Manufacturer	Davco Package Plant
	Capacity	320,000 gallons-per-day (gpd)
	Structure	Concrete tank with steel interior walls
	Process	UV disinfection (Trojan 3000 unit)
	Aeration Method	Diffused
	Process basins:	
	Contact	39,891 gallons
	Re-aeration	79,789 gallons
	Clarifier type	Circular center feed (area = 252 sq ft)
	Chlorination	6,582 gallons
Aerobic Digestion	71,808 gallons	
Blowers	Manufacturer/make	Hoffman
	Capacity	972 scfm
	Type	Centrifugal
	Horsepower	75 hp
	Count	2
Generator	Manufacturer/make	Onan
	Output rating	250 kW
	Diesel Storage Tank	300 gallons
Operations building		Concrete block, app. 2,000 sq ft
Storage building		Corrugated metal, app. 100 sq ft

Notes:

(1) Source: System Drawings

3.6.5 WWTP #3 AND #4 REGULATORY REVIEW

WWTP #3 and #4 are permitted under NPDES permit #SC0026751 which became effective on September 14, 2010 and expires October 31, 2015 (see **Appendix E**). **Table 3-7** provides details on the permit limitations. The WWTP has consistently met the permit limitations except with respect to flow.

A CEI was conducted at the facility by SCDHEC on September 23, 2013 and received a satisfactory rating (see **Appendix G**).

**TABLE 3-7
TEGA CAY WATER SERVICES, INC.
NPDES PERMIT #SC0026751
EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

EFFLUENT CHARACTERISTICS	Discharge Limitations				Monitoring Requirement		
	Pounds per Day		Other Units		Measurement Frequency	Sample Type	Sample Point
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum			
Flow	- ⁽³⁾	- ⁽³⁾	MR MGD	MR MGD	Daily	Cont.	Eff.
BOD	73	146	30 mg/l	60 mg/l	2/month	24 Hr C	Eff.
TSS	73	146	30 mg/l	60 mg/l	2/month	24 Hr C	Eff.
NH-N (Mar-Oct)	39	78	16 mg/l	32 mg/l	2/month	24 Hr C	Eff.
NH-N (Nov-Feb)	MR	MR	MR mg/l	MR mg/l	2/month	24 Hr C	Eff.
Fecal Coliform	-	-	200/100 ml	400/100 ml	2/month	Grab	Eff.
TRC ⁽²⁾	0.28 ⁽²⁾	0.49 ⁽²⁾	0.117 mg/l	0.202 mg/l	2/month	Grab	Eff.
Copper, Total	MR	MR	MR mg/l	MR mg/l	1/quarter	24 Hr C	Eff.
DO	-	-	2.0 mg/l minimum at all times		Daily	Grab	Eff.
pH	-	-	6.0 – 8.5 Standard Units		Daily	Grab	Eff.
Total Phosphorus	0.943	MR	0.45 mg/l	MR mg/l	1/month	24 Hr C	Eff.

Notes:

(1) Source: NPDES Permit #SC0026751

(2) Since UV disinfection is used at this facility, TRC limits are applicable only if chlorine or chlorine-based disinfection is utilized. Report zero (0) for both mass and concentration otherwise.

(3) Permitted flows for WWTP No. 3 and 4 = 0.29 MGD each

DRAFT

SECTION 4

SECTION 4 VALUATION METHODS

4.1 GENERAL

The objective of this Report is to establish an opinion of the fair market value of the Utility. Fair market value assumes that both the buyer and the seller are aware of all relevant information and that neither party is under the compulsion to act. The method utilized herein to provide a basis for an opinion of value consists of the reconciliation of three approaches consisting of:

- (i) the cost approach;
- (ii) the income approach; and
- (iii) the comparable sales approach.

These approaches analyze various aspects of the utility system, including the physical conditions of the existing utility system, the cash flows anticipated to be generated by the utility system in the future, and finally, the transaction factors related to the acquisition of similar systems in the past. Even though none of these methods may be considered ideal on a stand-alone basis, since each evaluates a particular facet of the utility system, the consideration and relative weighting of all three provides valuable input when considering other factors and the use of judgment in determining the value of the Utility. The remainder of this section provides a general description of the valuation approaches utilized for the Report.

4.2 COST APPROACH

Replacement cost new less depreciation (RCNLD) is a cost approach method selected for this report that is commonly utilized in the determination of estimated value in utilities and has been an accepted method in litigation cases involving the acquisition of utilities throughout the United States. The primary reason for this is the fact that most utilities are comprised of complex treatment, pumping, and piping networks which all have various service lives and different years of installation. In order to address these technically complex facilities, the RCNLD method has been developed.

There is a difference between the reproduction cost and the replacement cost of utility assets. The reproduction cost is a duplication of exactly the same facilities. In contrast, the replacement cost is the provision of facilities that would be available today with their improved efficiencies and more effective cost utilizing the commercially available materials, equipment, etc. complete as one single project and obtaining the economy of scale thereof. The replacement cost method assumes that the most economical sequence of construction is utilized. This means that the cost of restoration, impacts of conflicts, etc. are not included. In addition, only one (1) start up and shut down cost is included. Similarly, any premiums or overtime costs or special procurement mobilization/demobilization costs are not included other than for the single large economic construction project. The replacement cost approach excludes excess capital which an investor would normally not pay for in the existing facilities. Rather, the approach is based upon the theory of the substitution and the prevailing market concept that no investor would pay more than the cost to replace the same system with the same characteristics.

There are three (3) components to the overall depreciation taken in this approach. The first component of depreciation, and the first to be applied, is the physical depreciation of the asset. The second level is the functional obsolescence of the existing asset and is deducted from the replacement cost new less physical depreciation. The functional obsolescence is associated with the facilities themselves and is inherent to the Utility itself being derived from construction, configuration, operations, management, and administration. The final component in the method is for external obsolescence. External obsolescence accrues from all factors impacting the Utility. The impact of regulation, customer acceptance, historical rate and charge regulation or lack thereof, the ability to generate excess revenues sufficient to support the physical asset value, market conditions, development conditions, and many other factors external to the system itself.

The RCNLD analysis is based upon the following assumptions:

1. All Utility physical assets are designed, permitted and constructed in one continuous effort.
2. The construction activities are assumed to follow the same historical sequence as that followed in the service area. For example, water mains, gravity collection mains, force mains and manholes were assumed to be constructed before or simultaneously with the roads and driveways.
3. The engagement of general contractors, acting for the Utility and under its supervision, utilizing current construction practices and procedures to replace the property in such a manner so as to achieve all efficiencies that these procedures and practices would allow.
4. The replacement unit prices from recent sources are adjusted based on the appropriate index.
5. The replacement unit prices include the costs of all labor, material, and equipment directly related to specific items.
6. The replacement cost includes the costs associated with overhead and engineering fees incurred throughout the course of the project. These costs are presented as a percentage of the total construction costs of the replaced facilities and depreciated in the replacement cost analysis.

4.2.1 Depreciation Analysis

Depreciation is defined basically as the loss of value or worth of a property from all causes including those resulting from physical deterioration, functional obsolescence, and economic obsolescence. These causes and their effects are usually unique to each utility.

4.2.1.1 Average Service Life (ASL) Schedule

The appropriate ASL schedule for valuation of any utility should consider manufacturers' anticipated service lives, maintenance of facilities, service lives of like components and the utility system as determined by field inspections. This information is utilized to obtain the ASL for the Utility assets under normal service, including proper maintenance and repair. The National Association of Regulatory Commissioners (NARUC) helps establish ASLs through many studies and is considered an industry standard. GAI has incorporated ASLs being used by representatives of NARUC in this appraisal. The ASLs utilized in the replacement cost approach are shown in **Table 5-3** located in **Section 5**.

The effects of both the level of maintenance performed on the Utility and the deficiencies of the Utility on the value of the assets are addressed later in this analysis. These effects are determined based on inspections, evaluation, and analyses of the Utility assets which provide specific functions for the Utility. The impacts from lack of maintenance and observed deficiencies are then applied in the replacement cost analysis.

4.2.2 Cost Determination

The use of construction costs in the determination of the estimated cost-new valuation is of primary significance. These construction costs are obtained from several sources. A listing of the various sources used in the determination of costs is presented in **Section 5**.

4.2.3 Indirect Cost Components and Percentages

The cost approach includes the costs associated with overhead incurred throughout the course of construction. These costs are presented as a percentage of the total construction costs of the replaced facilities. Engineering and other costs are depreciated as they are associated with the assets in the replacement cost analysis.

4.3 INCOME APPROACH

The income approach values a utility based on the present value of the available cash flows anticipated to be generated in the future. The theory behind this particular approach is based upon the concept of converting the anticipated financial benefits of ownership in the future to an estimate of the present value in today's environment. Depending upon the circumstances surrounding each acquisition, the income stream may be based on the net operating revenues derived from existing and future growth as well as the value of capital contributions received from new system growth in the future.

Utilizing this approach, the net income for the utility is projected over a specific timeframe and subsequently expressed in terms of its value today based upon the use of an appropriate present value or discount factor. In order to reflect future financial and operational conditions as accurately as possible, this approach relies heavily on past and present financial data such as that found in audited financial statements and financial reports. Once the projection of net income available over the specified time period is determined, a reversion value of the assets is estimated in order to recognize the value of the system as an ongoing entity beyond this projected time period. This adjustment is based on the concept that the utility does not simply cease to exist at the end of the projection period. Rather, the assets of the system will still provide a means of generating revenue. As such, the reversion, or residual, value of the assets existing at the end of the projection period is included in the present value analysis. Finally, any other adjustments which may be appropriate are made based on the circumstances surrounding the particular acquisition. Such circumstances may include, but not be limited to, adjustments for capital deficiencies that may exist at the time of acquisition, deferred maintenance items, and similar requirements.

In general, the development of an income approach would involve the following steps and decisions:

1. Determine the appropriate term to use for the projection period. Based on the individual circumstances, this period may change from acquisition to acquisition. For example, the anticipated remaining useful life of the physical assets may be used if adequate information exists for this determination.

2. Review relevant past and present financial and operating data available for the utility as it exists today. This will include sources of operating and capital revenues and expenses; transfers; depreciation (if appropriate); personnel and associated costs; historical customer growth and usage patterns; known and anticipated changes in future customer statistics; and similar factors.
3. Develop a customer and usage forecast corresponding to the projection period chosen based on the review of past and present actual financial data and any known or anticipated changes in the future.
4. Develop a schedule of revenues and expenses for the projection period based on the customer forecast and current financial statistics of the system while reflecting applicable adjustment thereto pursuant to the ownership assumed in the analysis. In projecting the revenues and expenses, other adjustments may be necessary based on the assumptions inherent in the particular analysis.
5. Determine any appropriate capital contributions and/or capital expenditures which may be necessary as a result of new customer growth or capital improvement needs in the future. This facet of the cash flow analysis will depend on factors such as the remaining capacity in the existing system and the assumed customer forecast. Based on such assumptions, the inclusion of capital revenues and/or capital expenditures in the present value analysis may be appropriate.
6. Determine the applicable present value discount factor to be utilized in the analysis. This factor will vary depending on the ownership assumed in the future. For example, under a public ownership scenario, the current interest rate on long-term municipal utility revenue bonds may serve as the basis for the discount rate. Alternatively, if private ownership is assumed, the utility's current average cost of capital (or that of other similar utilities) may be used.

7. Apply the present value discount factor to the anticipated cash flows for the projection period.
8. Allow consideration of the reversion value of the assets in the last year of the analysis.
9. Make any other appropriate adjustments which may be necessary.

4.4 COMPARABLE SALES APPROACH

The comparable sales approach to utility valuation assumes that knowledgeable buyers and sellers of water, wastewater and reclaimed utilities generally know the “Market” for such utility systems. The purpose of this market approach is to examine the history of water, wastewater and reclaimed utility acquisitions, and to analyze the conditions under which the systems were acquired in an effort to arrive at an implied purchase price for the subject system. Extensive research has been conducted in order to gather a database of information regarding utility acquisitions. In order to compare the different transactions, various financial, technical, legal, and customer service information was analyzed and adjusted. Moreover, discussions with the negotiators, buyers, and sellers are useful and informative to the analyses.

There are many factors which are involved in the determination of an acquisition price of a utility system. These factors create both similarities and differences between the transactions, which in essence, result in the formation of a well-mixed market of utility sales. The comparable sales approach considers such factors and makes adjustments as necessary in order to arrive at an implied value for the Utility.

4.5 SUMMARY

In an effort to formulate an opinion of value for the Utility proposed to be acquired, this Report considers three valuation approaches. The three valuation approaches include the: 1) cost approach; 2) income approach; and 3) comparable sales approach. Each approach is independent and results in a separate and distinct finding. Such findings are subsequently weighted and considered together with other factors to formulate an opinion of value for the Utility. The resulting opinion of value is based upon the foregoing findings as well as professional experience.

DRAFT

DRAFT

SECTION 5

SECTION 5 COST APPROACH

5.1 INTRODUCTION

This section of the Report provides the opinion of value utilizing the Cost Approach for the Utility assets that are currently providing water and wastewater utility services. The methodology selected for use in the cost approach valuation of the above Utility is replacement cost new less depreciation (RCNLD). This method is commonly utilized in the determination of value of public utilities and has been an accepted method with regard to value for several court cases involving the acquisition of utilities throughout the United States. The primary reason for using the RCNLD method is the fact that most utilities are comprised of complex treatment, pumping, and piping networks with various service lives and years of installation. In order to address these technically complex facilities, the RCNLD method has been chosen for the cost approach for valuation.

5.2 REPLACEMENT COST DETERMINATION

The replacement cost of this special purpose property in place and in-service is determined by calculating the construction cost of the same, equivalent or like-kind new facilities which the marketplace would install and deducting the various forms of depreciation. The determination of replacement assumes that replacing the Utility is one (1) large project with inherent economies of scale which are represented in the determination of replacements costs. The replacement costs used are derived from a variety of sources. Those sources include:

- (a) Actual construction costs of projects from GAI records;
- (b) Calls to contractors for estimates of prices, including those direct cost components which are generally described in **Table 5-1** herein;

**TABLE 5-1
DIRECT COST COMPONENTS
INCLUDED IN UNIT PRICES**

<u>Item No.</u>	<u>Description</u>
1	Replacement Cost of the Item
2	Sales Taxes, as Applicable
3	Freight
4	Rigging and Moving, as Applicable
5	General Electrical Item Related
6	Item Foundation or Fixture
7	Item Piping Connection to Value of Plant Piping, as Applicable
8	Debugging, as Applicable
9	Item Operation and Maintenance (O&M) Manual
10	Start-Up
	Labor and Cost for Construction
11	Equipment/Machinery/Tools/Specials Necessary for Installation Complete

- (c) Calls to manufacturers for material prices as well as for their experiences associated with the installation of their equipment;
- (d) Bill of sales where applicable;
- (e) Utilization of various construction cost estimating manuals such as the RS Means Cost Data (“RSMeans”) and/or the Engineering News Record (“ENR”) Cost Indices/Information for various components;
- (f) Utilizing capacity ratios as necessary to interpolate to a needed equivalent facility from two (2) comparable bids of slightly differing size; and
- (g) Information from TCWS.

Data obtained from the above sources has been summarized and included within the analyses provided. Additionally, construction work in progress is not valued and is considered as part of the standard terms and conditions of a utility transaction.

The American Society of Appraisers (“ASA”), in their Principals of Valuation courses involving the machinery and technical specialties which include the specific provision for public utilities, have developed valuation guidelines. Through their courses titled ME 201, 202, 203, and 204 for machinery and equipment valuation, the methodology is summarized. These guidelines provide for the rounding of valuation amounts. This report is compliant with the Uniform Standards of Professional Appraisal Practice (“USPAP”), 2014-2015 Edition. The rounding pursuant to ASA guidelines are shown in **Table 5-2**, below.

**TABLE 5-2
ROUNDING OF VALUATION AMOUNTS**

Amount Determined	Rounded to Nearest ⁽¹⁾
0 - \$2,000	\$10
\$2,001 - \$20,000	\$100
\$20,001 - \$500,000	\$1,000
\$500,001 - \$10,000,000	\$10,000
Over \$10,000,000	\$100,000

Source: ASA guidelines

5.3 RECOMMENDED DEPRECIATION SCHEDULE

Each Utility component has been assigned an average service life. GAI’s professional staff has performed numerous asset studies including surveys of Illinois utilities, analysis of Public Service Commission regulated utilities, specific surveys and testing for utility systems and specific cases, as well as utilizing the available information on depreciation of public utility assets specific to the design specification delineated within this Section. GAI has used the information compiled and their professional experience and judgment to assign appropriate average service lives.

Table 5-3 summarizes utility system component average service life (“ASL”) for each of the various categories utilized in this appraisal. The depreciation has been taken on a straight-line basis utilizing the components and the average service lives shown on **Table 5-3**.

**TABLE 5-3
WATER AND WASTEWATER UTILITY COMPONENT
AVERAGE SERVICE LIFE (ASL)**

Category	ASL
Raw and Potable Water Mains	75-100 years
Fire Hydrants	50 years
Meters	15 years
Services	50 years
Gravity Sewers	75-100 years
Manholes	35 years
Lift Stations	35 years
Force Mains	75-100 years
Pumping Equipment	20 years
Yard Piping	75 years
Elevated Water Storage Tank	50 years
Ground Storage Tank	40 years
Aerator, Pressure Filters	17 years
Hydro-pneumatic Tanks	35 years
Electrical Equipment	20 years
Master Meter	15 years
Wastewater Treatment Plant	45 years
Valves	35 years
Electrical Work	10 years
Chlorination Equipment	30 Years
Site Work	45 years
Land	Separate
Easements	Separate
Inventory/Consumables	At Cost
Engineering, Records, Reports, etc.	Composite
Legal Agreement, Entitlements, etc.	N/A - Overheads

DRAFT

5.4 INDIRECT COST COMPONENTS

The indirect cost components included in this analysis are legal costs; insurance costs and other related insurance items; licenses, permits, and fees; technical services; financing; and overhead costs. These costs are presented as a percentage of the asset costs in **Table 5-4**. This is customary and typical for the industry. Note that the ASCE Manual of Practice No. 45 and the Florida Institute of Consulting Engineering curves are utilized for the technical service aspects. Also note that it is assumed that the Client's

interest rate on financing is 4.0%, allocated to the indirect cost. The percentages shown are typical and provide for the total indirect cost for the project at 16.0%.

**TABLE 5-4
INDIRECT COST COMPONENTS AND PERCENTAGES**

Description	Percentage ⁽¹⁾
Legal	1.0%
Insurances, etc.	0.5%
Licenses, Permits, and Fees	1.0%
Accounting	0.5%
Engineering, Surveying, Construction Management, Testing, Technical Services, O&M Manual, Start-up, and Certification	8.0% ⁽²⁾
Financing	4.0% ⁽³⁾
Administration, Overhead, Planning, etc.	1.0%
Total	16.0%

- Notes: (1) Otherwise stated from market review of total project costs without premiums or interveners or special services.
- (2) ASCE MOP 45 and FICE curves.
- (3) Assumes financing @ 4.0%.

In addition to the indirect cost components listed above, GAI has provided for an additional 4% to reflect contractor mobilization/demobilization, profits, insurance, etc. Therefore, a total 20% indirect and other cost component is added to asset costs.

5.5 REPLACEMENT COST ANALYSES

This Report includes the replacement cost analyses as conducted by Mr. Gerald C. Hartman, P.E., BCEE, ASA, P.E. # 15389, ASA # 7542. The quantities and inventory of assets were retained from the reports provided by TCWS. GAI personnel inspected the Utility on November 15, 2013, and the inspection photos are attached in **Appendix C**. The results of the replacement cost new less physical depreciation determination are summarized in the following sub-sections.

5.5.1 Water System

The water system facilities were constructed in the 1971 through 2013 time period and include water supply, transmission and distribution, fire hydrant assemblies, and meters and services. The extent of the water system is detailed in **Schedules 5-1** through **5-3**. After applying the overhead percentages, the new replacement cost value of these system assets is \$4,486,096, rounded to **\$4,480,000** as shown in **Schedule 5-4**. The total physical depreciation of these assets using the average service life schedule is \$2,448,597, rounded to **\$2,450,000**. The remaining replacement cost new less physical depreciation (RCNLD) is \$2,037,499, rounded to **\$2,040,000**.

5.5.2 Wastewater System

The wastewater system facilities were also constructed in the 1971 through 2013 time period and include wastewater services, gravity sewer mains, manholes, wastewater pumping stations, and force mains and three (3) wastewater treatment plants. The extent of the water system is detailed in **Schedules 5-5** through **5-9**. After applying the necessary overhead percentages, the replacement cost new value of the assets is \$17,108,657, rounded to **\$17,100,000** as shown in **Schedule 5-10**. The total physical depreciation of these assets is \$9,914,022, rounded to **\$9,910,000**. The remaining RCNLD is \$7,194,635, rounded to **\$7,190,000**.

5.5.3 Summary of Replacement Cost New Less Physical Depreciation

As shown in **Schedule 5-4** and **5-10**, the replacement cost new less physical depreciation is \$2,040,000 for the water system and \$7,190,000 for the wastewater system. This shows that the utility assets have an approximate composite depreciation rate of 55% for water facilities and 58% for wastewater facilities. **Table 5-5** summarizes the RCNLD values for the water and wastewater systems.

**TABLE 5-5
SUMMARY OF FACILITIES
REPLACEMENT COST NEW LESS DEPRECIATION (RCNLD)**

<u>Category</u>	<u>Replacement Cost New</u>	<u>Depreciation</u>	<u>RCNLD</u>
1. Water System	\$ 4,490,000	\$ 2,450,000	\$ 2,040,000
2. Wastewater System	17,100,000	9,910,000	7,190,000
Total	\$ 21,590,000	\$ 12,360,000	\$ 9,230,000

5.5.4 Land and easements

Land and easements were assumed for the purpose of this analysis at **\$300,000**. A separate appraisal for land and easements was agreed to by the City and TCWS, therefore, the valued assumed for this Report is a significant assumption.

5.5.5 Fixtures, Equipment, Rolling Stock and Inventory

Fixtures, equipment, rolling stock, and inventory were assumed for the purpose of this analysis at **\$69,200**.

5.5.6 Records Depreciated

The value of records available has been taken in addition to the engineering percentages delineated above over and above those costs associated with construction of the assets and specifically, attributed to regulatory activities, facility planning, customers, and other related utility operations at **\$50,000**.

5.5.7 Deficiencies and Deferred Maintenance

The deficiencies and deferred maintenance given the age of the Utility and historical and current wastewater system issues for this report equates to **\$950,000**.

5.6 FUNCTIONAL DEPRECIATION

Functional depreciation is cured by the use of the replacement cost approach and by the deduction of \$950,000 for system deficiencies and deferred maintenance.

5.7 EXTERNAL DEPRECIATION

External depreciation due to regulatory non-compliance is cured by the \$950,000 deduction for deficiencies. No other external depreciation was found.

5.8 GOING CONCERN

The value of a business property, including a utility, is more than the mere cost to reproduce less depreciation. Going concern value is an enhancement to the structure value because the structure is in use. Such a value increment must include whatever is contributed by the fact of connection of the items making a complete and operating Utility. Elements of going concern value include, but are not limited to, the time and cost of building the business, the establishment of routes and customers, the exercise of managerial skill, the efficiency of the work force, and the records of profitability of the fully functioning, organized business. Going concern value of comparable water and wastewater systems has generally ranged from zero to fifteen (0 to 15) percent. For the purpose of this analysis, the amount of 5 percent (5%) or **\$435,000** is applied to the Utility for the estimated going concern value.

5.9 REPLACEMENT COST NEW LESS DEPRECIATION

The summary of the replacement cost new less depreciation is shown on **Table 5-6**.

**TABLE 5-6
SUMMARY OF ADJUSTMENTS FOR REPLACEMENT COST
NEW LESS DEPRECIATION ANALYSIS
WATER AND WASTEWATER
(ROUNDED)**

Item	Total
1 Replacement Cost New	\$ 21,590,000
2 Physical Depreciation	(12,360,000)
3 RCNLD	\$ 9,230,000
4 Land and Easements	300,000
5 Consumables, etc	69,200
6 Records, etc	50,000
7 Deficiencies and Deferred	(950,000)
8 Functional Depreciation	-
Subtotal	8,699,200
9 External Depreciation	-
Subtotal	\$ 8,699,200
10 Going Concern @ 5%	435,000
11 Total	\$ 9,134,200
12 Total (Rounded)	\$ 9,130,000

Schedule 5-1
Tega Cay Water Service, Inc.
Replacement Cost Approach
Water Storage Facilities

Item No.	Description	Year in Service ⁽¹⁾	Quantity	Unit	Unit Cost ⁽²⁾	Total Cost	Effective Age ⁽³⁾ (Year)	Average Service Life ⁽⁴⁾ (Year)	Depreciation ⁽⁵⁾ (%)	Depreciation Amount	RCNLD
1	250k gal Hydrosphere Tank	1971	1	EA	\$ 656,800	\$ 656,800	30	50	60.00%	\$ (394,080)	\$ 262,720
2	Site work	1971	1	LS	\$ 39,400	\$ 39,400	42	50	84.00%	\$ (33,096)	\$ 6,304
3	Electrical	1971	1	LS	\$ 66,200	\$ 66,200	10	15	66.67%	\$ (44,133)	\$ 22,067
4	Yard Piping	1971	1	LS	\$ 66,200	\$ 66,200	42	75	56.00%	\$ (37,072)	\$ 29,128
5	SUBTOTAL					\$ 828,600			61.35%	\$ (508,381)	\$ 320,219
6	Administration, Finance, Legal, Eng. Etc					\$ 165,720			61.35%	\$ (101,676)	\$ 64,044
7	TOTAL					\$ 994,320			61.35%	\$ (610,058)	\$ 384,262

Notes:

- (1) The assets' quantities and actual year in service (or weighted year for grouping of assets) were documented from available reports, fixed assets list and other information provided.
- (2) Cost new to replace per bid tabs and contractor/manufacturer quote includes material, labor, installation, site preparation, etc.
- (3) Age of all assets was calculated as of 2013, adjusted for known maintenance, repairs, and rehab.
- (4) Average service lives were based on recommended depreciation schedules, cost weighted for groupings of assets.
- (5) For all equipment that has fully depreciated a residual value of 5.0% of total cost was applied.

Schedule 5-2
Tega Cay Water Service, Inc.
Replacement Cost Approach
Water Transmission and Distribution

Item No.	Description	Year in Service ⁽¹⁾	Quantity	Unit	Unit Cost ⁽²⁾	Total Cost	Effective Age ⁽³⁾ (Year)	Average Service Life ⁽⁴⁾ (Year)	Depreciation ⁽⁵⁾ (%)	Depreciation Amount	RCNLD
Water Mains											
1	1.5" PVC	1971	1,250	LF	\$ 6.30	\$ 7,875	42	100	42.00%	\$ (3,308)	\$ 4,568
2	10" CIP	1971	1,750	LF	\$ 31.50	\$ 55,125	42	75	56.00%	\$ (30,870)	\$ 24,255
3	12" CIP	1971	1,510	LF	\$ 36.20	\$ 54,662	42	75	56.00%	\$ (30,611)	\$ 24,051
4	12" DIP	1971	520	LF	\$ 36.20	\$ 18,824	42	75	56.00%	\$ (10,541)	\$ 8,283
5	14"PVC	1971	1,650	LF	\$ 32.30	\$ 53,295	42	100	42.00%	\$ (22,384)	\$ 30,911
6	2"PVC	1971	16,534	LF	\$ 8.70	\$ 143,846	42	100	42.00%	\$ (60,415)	\$ 83,431
7	3"PVC	1971	2,099	LF	\$ 9.10	\$ 19,101	42	100	42.00%	\$ (8,022)	\$ 11,079
8	4"PVC	1971	11,331	LF	\$ 9.50	\$ 107,645	42	100	42.00%	\$ (45,211)	\$ 62,434
9	6"PVC	1971	21,364	LF	\$ 14.20	\$ 303,369	42	100	42.00%	\$ (127,415)	\$ 175,954
10	8"PVC	1971	7,671	LF	\$ 18.90	\$ 144,982	42	100	42.00%	\$ (60,892)	\$ 84,090
11	2"PVC	1972	2,360	LF	\$ 8.70	\$ 20,532	41	100	41.00%	\$ (8,418)	\$ 12,114
12	3"PVC	1972	1,900	LF	\$ 9.10	\$ 17,290	41	100	41.00%	\$ (7,089)	\$ 10,201
13	4"PVC	1972	1,500	LF	\$ 9.50	\$ 14,250	41	100	41.00%	\$ (5,843)	\$ 8,408
14	6"PVC	1972	720	LF	\$ 14.20	\$ 10,224	41	100	41.00%	\$ (4,192)	\$ 6,032
15	8"PVC	1972	1,720	LF	\$ 18.90	\$ 32,508	41	100	41.00%	\$ (13,328)	\$ 19,180
16	2"PVC	1973	950	LF	\$ 8.70	\$ 8,265	40	100	40.00%	\$ (3,306)	\$ 4,959
17	4"PVC	1973	1,040	LF	\$ 9.50	\$ 9,880	40	100	40.00%	\$ (3,952)	\$ 5,928
18	6"PVC	1973	470	LF	\$ 14.20	\$ 6,674	40	100	40.00%	\$ (2,670)	\$ 4,004
19	1.5" PVC	1976	268	LF	\$ 7.90	\$ 2,117	37	100	37.00%	\$ (783)	\$ 1,334
20	2"PVC	1976	270	LF	\$ 8.70	\$ 2,349	37	100	37.00%	\$ (869)	\$ 1,480
21	6"PVC	1976	890	LF	\$ 14.20	\$ 12,638	37	100	37.00%	\$ (4,676)	\$ 7,962
22	8"PVC	1976	565	LF	\$ 18.90	\$ 10,679	37	100	37.00%	\$ (3,951)	\$ 6,727
23	2"PVC	1978	3,040	LF	\$ 8.70	\$ 26,448	35	100	35.00%	\$ (9,257)	\$ 17,191
24	4"PVC	1978	1,190	LF	\$ 9.50	\$ 11,305	35	100	35.00%	\$ (3,957)	\$ 7,348
25	6"PVC	1978	2,260	LF	\$ 14.20	\$ 32,092	35	100	35.00%	\$ (11,232)	\$ 20,860
26	6"PVC	1978	1,400	LF	\$ 14.20	\$ 19,880	35	100	35.00%	\$ (6,958)	\$ 12,922
27	2"PVC	1979	820	LF	\$ 8.70	\$ 7,134	34	100	34.00%	\$ (2,426)	\$ 4,708
28	4"PVC	1984	338	LF	\$ 9.50	\$ 3,211	29	100	29.00%	\$ (931)	\$ 2,280
29	6"PVC	1984	1,312	LF	\$ 14.20	\$ 18,630	29	100	29.00%	\$ (5,403)	\$ 13,228
30	4"PVC	1985	270	LF	\$ 9.50	\$ 2,565	28	100	28.00%	\$ (718)	\$ 1,847
31	6"PVC	1985	1,327	LF	\$ 14.20	\$ 18,843	28	100	28.00%	\$ (5,276)	\$ 13,567
32	2"PVC	1986	366	LF	\$ 8.70	\$ 3,184	27	100	27.00%	\$ (860)	\$ 2,324
33	4"PVC	1986	1,867	LF	\$ 9.50	\$ 17,737	27	100	27.00%	\$ (4,789)	\$ 12,948

Schedule 5-2
Tega Cay Water Service, Inc.
Replacement Cost Approach
Water Transmission and Distribution

Item No.	Description	Year in Service ⁽¹⁾	Quantity	Unit	Unit Cost ⁽²⁾	Total Cost	Effective Age ⁽³⁾ (Year)	Average Service Life ⁽⁴⁾ (Year)	Depreciation ⁽⁵⁾ (%)	Depreciation Amount	RCNLD	
34	6"PVC	1986	1,567	LF	\$ 14.20	\$ 22,251	27	100	27.00%	\$ (6,008)	\$ 16,244	
35	2"PVC	1989	501	LF	\$ 8.70	\$ 4,359	24	100	24.00%	\$ (1,046)	\$ 3,313	
36	4"PVC	1989	7,976	LF	\$ 9.50	\$ 75,772	24	100	24.00%	\$ (18,185)	\$ 57,587	
37	6"PVC	1989	486	LF	\$ 14.20	\$ 6,901	24	100	24.00%	\$ (1,656)	\$ 5,245	
38	8"PVC	1989	1,100	LF	\$ 18.90	\$ 20,790	24	100	24.00%	\$ (4,990)	\$ 15,800	
39	10" DIP	1990	1,480	LF	\$ 28.40	\$ 42,032	23	75	30.67%	\$ (12,890)	\$ 29,142	
40	12" DIP	1990	1,560	LF	\$ 35.40	\$ 55,224	23	75	30.67%	\$ (16,935)	\$ 38,289	
41	2"PVC	1990	5,140	LF	\$ 8.70	\$ 44,718	23	100	23.00%	\$ (10,285)	\$ 34,433	
42	4"PVC	1990	2,181	LF	\$ 9.50	\$ 20,720	23	100	23.00%	\$ (4,765)	\$ 15,954	
43	6"PVC	1990	5,281	LF	\$ 14.20	\$ 74,990	23	100	23.00%	\$ (17,248)	\$ 57,742	
44	8" PVC	1990	3,987	LF	\$ 18.90	\$ 75,354	23	100	23.00%	\$ (17,331)	\$ 58,023	
45	8"DIP	1990	3,660	LF	\$ 23.60	\$ 86,376	23	75	30.67%	\$ (26,489)	\$ 59,887	
Hydrant Assembly												
46	Hydrant Assembly	1971	4	EA	\$ 3,250	\$ 13,000	42	50	84.00%	\$ (10,920)	\$ 2,080	
47	Hydrant Assembly	1978	6	EA	\$ 3,250	\$ 19,500	35	50	70.00%	\$ (13,650)	\$ 5,850	
48	Hydrant Assembly	1983	14	EA	\$ 3,250	\$ 45,500	30	50	60.00%	\$ (27,300)	\$ 18,200	
49	Hydrant Assembly	1985	18	EA	\$ 3,250	\$ 58,500	28	50	56.00%	\$ (32,760)	\$ 25,740	
50	Hydrant Assembly	1987	14	EA	\$ 3,250	\$ 45,500	26	50	52.00%	\$ (23,660)	\$ 21,840	
51	Hydrant Assembly	1989	20	EA	\$ 3,250	\$ 65,000	24	50	48.00%	\$ (31,200)	\$ 33,800	
52	Hydrant Assembly	1992	2	EA	\$ 3,250	\$ 6,500	21	50	42.00%	\$ (2,730)	\$ 3,770	
53	Hydrant Assembly	1996	2	EA	\$ 3,250	\$ 6,500	17	50	34.00%	\$ (2,210)	\$ 4,290	
54	SUBTOTAL					\$ 2,006,645			39.51%	\$ (792,811)	\$ 1,213,834	
55	Administration, Finance, Legal, Eng. Etc					\$ 401,329			39.51%	\$ (158,562)	\$ 242,767	
56	TOTAL					\$ 2,407,974			39.51%	\$ (951,373)	\$ 1,456,601	

Schedule 5-2
Tega Cay Water Service, Inc.
Replacement Cost Approach
Water Transmission and Distribution

Item No.	Description	Year in Service ⁽¹⁾	Quantity	Unit	Unit Cost ⁽²⁾	Total Cost	Effective Age ⁽³⁾ (Year)	Average Service Life ⁽⁴⁾ (Year)	Depreciation ⁽⁵⁾ (%)	Depreciation Amount	RCNLD
----------	-------------	--------------------------------	----------	------	--------------------------	------------	-------------------------------------	--	---------------------------------	---------------------	-------

Notes:

- (1) The assets' quantities and actual year in service (or weighted year for grouping of assets) were documented from available reports, fixed assets list and other information provided.
- (2) Cost new to replace per bid tabs and contractor/manufacturer quote includes material, labor, installation, site preparation, etc.
- (3) Age of all assets was calculated as of 2013, adjusted for known maintenance, repairs, and rehab.
- (4) Average service lives were based on recommended depreciation schedules, cost weighted for groupings of assets.
- (5) For all equipment that has fully depreciated a residual value of 5.0% of total cost was applied.

DRAFT

Schedule 5-3
Tega Cay Water Service, Inc.
Replacement Cost Approach
Meters and Services

Item No.	Description	Year in Service ⁽¹⁾	Quantity	Unit	Unit Cost ⁽²⁾	Total Cost	Effective Age ⁽³⁾ (Year)	Average Service Life ⁽⁴⁾ (Year)	Depreciation ⁽⁵⁾ (%)	Depreciation Amount	RCNLD
Meters and Services											
1	5/8 x 3/4"	1971	862	EA	\$ 512	\$ 441,344	42	36	95.00%	\$ (419,277)	\$ 22,067
2	5/8 x 3/4"	1972	108	EA	\$ 512	\$ 55,296	41	36	95.00%	\$ (52,531)	\$ 2,765
3	5/8 x 3/4"	1973	32	EA	\$ 512	\$ 16,384	40	36	95.00%	\$ (15,565)	\$ 819
4	5/8 x 3/4"	1976	26	EA	\$ 512	\$ 13,312	37	36	95.00%	\$ (12,646)	\$ 666
5	5/8 x 3/4"	1978	104	EA	\$ 512	\$ 53,248	35	36	95.00%	\$ (50,586)	\$ 2,662
6	5/8 x 3/4"	1979	11	EA	\$ 512	\$ 5,632	34	36	94.44%	\$ (5,319)	\$ 313
7	5/8 x 3/4"	1984	22	EA	\$ 512	\$ 11,264	29	36	80.56%	\$ (9,074)	\$ 2,190
8	5/8 x 3/4"	1985	21	EA	\$ 512	\$ 10,752	28	36	77.78%	\$ (8,363)	\$ 2,389
9	5/8 x 3/4"	1986	50	EA	\$ 512	\$ 25,600	27	36	75.00%	\$ (19,200)	\$ 6,400
10	5/8 x 3/4"	1989	132	EA	\$ 512	\$ 67,584	24	36	66.67%	\$ (45,056)	\$ 22,528
11	5/8 x 3/4"	1990	218	EA	\$ 512	\$ 111,616	23	36	63.89%	\$ (71,310)	\$ 40,306
12	5/8 x 3/4"	2001	178	EA	\$ 512	\$ 91,136	12	36	33.33%	\$ (30,379)	\$ 60,757
13	SUBTOTAL					\$ 903,168			81.86%	\$ (739,305)	\$ 163,863
14	Administration, Finance, Legal, Eng. Etc					\$ 180,634			81.86%	\$ (147,861)	\$ 32,773
15	TOTAL					\$ 1,083,802			81.86%	\$ (887,166)	\$ 196,635

Notes:

- (1) The assets' quantities and actual year in service (or weighted year for grouping of assets) were documented from available reports, fixed assets list and other information provided.
- (2) Cost new to replace per bid tabs and contractor/manufacturer quote includes material, labor, installation, site preparation, etc.
- (3) Age of all assets was calculated as of 2013, adjusted for known maintenance, repairs, and rehab.
- (4) Average service lives were based on recommended depreciation schedules, cost weighted for groupings of assets.
- (5) For all equipment that has fully depreciated a residual value of 5.0% of total cost was applied.

Schedule 5-4
Tega Cay Water Service, Inc.
Replacement Cost Approach
Water System Summary

Item No.	Description	Total Costs	Depreciation ⁽¹⁾ (%)	Depreciation Amount	RCNLD
1	Water Storage	\$ 994,320	61.35%	\$ (610,058)	\$ 384,262
2	Transmission and Distribution	2,407,974	39.51%	(951,373)	1,456,601
3	Meters and Services	1,083,802	81.86%	(887,166)	196,635
4	TOTAL	\$ 4,486,096	54.58%	\$ (2,448,597)	\$ 2,037,499
5	TOTAL (Rounded)	\$ 4,490,000		\$ (2,450,000)	\$ 2,040,000

Notes:

(1) For all equipment that was fully depreciated, a residual value of 5% was applied.

DRAFT

Schedule 5-5
Tega Cay Water Service, Inc.
Replacement Cost Approach
Wastewater Services

Item No.	Description	Year in Service ⁽¹⁾	Quantity	Unit	Unit Cost ⁽²⁾	Total Cost	Effective Age ⁽³⁾ (Year)	Average Service Life ⁽⁴⁾ (Year)	Depreciation ⁽⁵⁾ (%)	Depreciation Amount	RCNLD
Single Service											
1	Single Service	1971	737	EA	\$ 430	\$ 316,910	42	38	95.00%	\$ (301,065)	\$ 15,846
2	Single Service	1972	107	EA	\$ 430	\$ 46,010	41	38	95.00%	\$ (43,710)	\$ 2,301
3	Single Service	1973	19	EA	\$ 430	\$ 8,170	40	38	95.00%	\$ (7,762)	\$ 409
4	Single Service	1976	20	EA	\$ 430	\$ 8,600	37	38	95.00%	\$ (8,170)	\$ 430
5	Single Service	1978	50	EA	\$ 430	\$ 21,500	35	38	92.11%	\$ (19,803)	\$ 1,697
6	Single Service	1979	31	EA	\$ 430	\$ 13,330	34	38	89.47%	\$ (11,927)	\$ 1,403
7	Single Service	1984	7	EA	\$ 430	\$ 3,010	29	38	76.32%	\$ (2,297)	\$ 713
8	Single Service	1985	17	EA	\$ 430	\$ 7,310	28	38	73.68%	\$ (5,386)	\$ 1,924
9	Single Service	1986	57	EA	\$ 430	\$ 24,510	27	38	71.05%	\$ (17,415)	\$ 7,095
10	Single Service	1989	154	EA	\$ 430	\$ 66,220	24	38	63.16%	\$ (41,823)	\$ 24,397
11	Single Service	1990	313	EA	\$ 430	\$ 134,590	23	38	60.53%	\$ (81,462)	\$ 53,128
12	Single Service	2001	230	EA	\$ 430	\$ 98,900	12	38	31.58%	\$ (31,232)	\$ 67,668
13	SUBTOTAL					\$ 749,060			76.37%	\$ (572,051)	\$ 177,010
14	Administration, Finance, Legal, Eng. Etc					\$ 149,812			76.37%	\$ (114,410)	\$ 35,402
15	TOTAL					\$ 898,872			76.37%	\$ (686,461)	\$ 212,411

Notes:

- (1) The assets' quantities and actual year in service (or weighted year for grouping of assets) were documented from available reports, fixed assets list and other information provided.
- (2) Cost new to replace per bid tabs and contractor/manufacturer quote includes material, labor, installation, site preparation, etc.
- (3) Age of all assets was calculated as of 2013, adjusted for known maintenance, repairs, and rehab.
- (4) Average service lives were based on recommended depreciation schedules, cost weighted for groupings of assets.
- (5) For all equipment that has fully depreciated a residual value of 5.0% of total cost was applied.

Schedule 5-6
Tega Cay Water Service, Inc.
Replacement Cost Approach
Gravity Collection Facilities

Item No.	Description	Year in Service ⁽¹⁾	Quantity	Unit	Unit Cost ⁽²⁾	Total Cost	Effective Age ⁽³⁾ (Year)	Average Service Life ⁽⁴⁾ (Year)	Depreciation ⁽⁵⁾ (%)	Depreciation Amount	RCNLD
Sewers											
1	12" VC	1971	9,340	LF	\$ 51.00	\$ 476,340	42	75	56.00%	\$ (266,750)	\$ 209,590
2	8" VC	1971	67,114	LF	\$ 27.10	\$ 1,818,789	42	75	56.00%	\$ (1,018,522)	\$ 800,267
3	12" VC	1972	4,540	LF	\$ 51.00	\$ 231,540	41	75	54.67%	\$ (126,575)	\$ 104,965
4	8" VC	1972	6,580	LF	\$ 27.10	\$ 178,318	41	75	54.67%	\$ (97,481)	\$ 80,837
5	8" VC	1973	2,020	LF	\$ 27.10	\$ 54,742	40	75	53.33%	\$ (29,196)	\$ 25,546
6	8" VC	1976	2,073	LF	\$ 27.10	\$ 56,178	37	75	49.33%	\$ (27,715)	\$ 28,464
7	8" VC	1978	5,189	LF	\$ 27.10	\$ 140,622	35	75	46.67%	\$ (65,624)	\$ 74,998
8	12" PVC	1979	2,620	LF	\$ 48.50	\$ 127,070	34	100	34.00%	\$ (43,204)	\$ 83,866
9	8" PVC	1979	600	LF	\$ 27.10	\$ 16,260	34	100	34.00%	\$ (5,528)	\$ 10,732
10	8" PVC	1984	735	LF	\$ 27.10	\$ 19,919	29	100	29.00%	\$ (5,776)	\$ 14,142
11	8" PVC	1985	1,758	LF	\$ 27.10	\$ 47,642	28	100	28.00%	\$ (13,340)	\$ 34,302
12	8" PVC	1986	5,879	LF	\$ 27.10	\$ 159,321	27	100	27.00%	\$ (43,017)	\$ 116,304
13	8" PVC	1989	15,946	LF	\$ 27.10	\$ 432,137	24	100	24.00%	\$ (103,713)	\$ 328,424
14	8" PVC	1990	32,438	LF	\$ 27.10	\$ 879,070	23	100	23.00%	\$ (202,186)	\$ 676,884
Manholes											
15	Manholes	1971	460	EA	\$ 2,910	\$ 1,338,600	32	35	91.43%	\$ (1,223,863)	\$ 114,737
16	Manholes	1972	123	EA	\$ 2,910	\$ 357,930	31	35	88.57%	\$ (317,024)	\$ 40,906
17	Manholes	1973	10	EA	\$ 2,910	\$ 29,100	30	35	85.71%	\$ (24,943)	\$ 4,157
18	Manholes	1978	70	EA	\$ 2,910	\$ 203,700	25	35	71.43%	\$ (145,500)	\$ 58,200
19	Manholes	1979	16	EA	\$ 2,910	\$ 46,560	24	35	68.57%	\$ (31,927)	\$ 14,633
20	Manholes	1985	36	EA	\$ 2,910	\$ 104,760	18	35	51.43%	\$ (53,877)	\$ 50,883
21	Manholes	1986	24	EA	\$ 2,910	\$ 69,840	17	35	48.57%	\$ (33,922)	\$ 35,918
22	Manholes	1987	23	EA	\$ 2,910	\$ 66,930	16	35	45.71%	\$ (30,597)	\$ 36,333
23	Manholes	1989	69	EA	\$ 2,910	\$ 200,790	14	35	40.00%	\$ (80,316)	\$ 120,474
24	Manholes	1990	194	EA	\$ 2,910	\$ 564,540	13	35	37.14%	\$ (209,686)	\$ 354,854

Schedule 5-6
Tega Cay Water Service, Inc.
Replacement Cost Approach
Gravity Collection Facilities

Item No.	Description	Year in Service ⁽¹⁾	Quantity	Unit	Unit Cost ⁽²⁾	Total Cost	Effective Age ⁽³⁾ (Year)	Average Service Life ⁽⁴⁾ (Year)	Depreciation ⁽⁵⁾ (%)	Depreciation Amount	RCNLD
23	SUBTOTAL					\$ 7,620,697			55.12%	\$ (4,200,280)	\$ 3,420,417
24	Administration, Finance, Legal, Eng. Etc					\$ 1,524,139			55.12%	\$ (840,056)	\$ 684,083
25	TOTAL					\$ 9,144,837			55.12%	\$ (5,040,336)	\$ 4,104,501

Notes:

- (1) The assets' quantities and actual year in service (or weighted year for grouping of assets) were documented from available reports, fixed assets list and other information provided.
- (2) Cost new to replace per bid tabs and contractor/manufacture quote includes material, labor, installation, site preparation, etc.
- (3) Age of all assets was calculated as of 2013, adjusted for known maintenance, repairs, and rehab.
- (4) Average service lives were based on recommended depreciation schedules, cost weighted for groupings of assets.
- (5) For all equipment that has fully depreciated a residual value of 5.0% of total cost was applied.

DRAFT

Schedule 5-7
Tega Cay Water Service, Inc.
Replacement Cost Approach
Lift Stations

Item No.	Description	Year in Service ⁽¹⁾	Quantity	Unit	Unit Cost ⁽²⁾	Total Cost	Effective Age ⁽³⁾ (Year)	Average Service Life ⁽⁴⁾ (Year)	Depreciation ⁽⁵⁾ (%)	Depreciation Amount	RCNLD
Structures, pumps, and controls											
1	Lift Station #1	1983	1	LS	\$ 57,700	\$ 57,700	30	27	90.00%	\$ (51,930)	\$ 5,770
2	Lift Station #2	2012	1	LS	\$ 91,400	\$ 91,400	1	36	2.75%	\$ (2,512)	\$ 88,888
3	Lift Station #3	2012	1	LS	\$ 83,500	\$ 83,500	1	38	2.64%	\$ (2,202)	\$ 81,298
4	Lift Station #4	1971	1	LS	\$ 94,500	\$ 94,500	42	38	90.00%	\$ (85,050)	\$ 9,450
5	Lift Station #5	1993	1	LS	\$ 56,500	\$ 56,500	20	27	73.95%	\$ (41,781)	\$ 14,719
6	Lift Station #6	1992	1	LS	\$ 54,900	\$ 54,900	21	26	81.43%	\$ (44,705)	\$ 10,195
7	Lift Station #7	1973	1	LS	\$ 99,800	\$ 99,800	40	35	90.00%	\$ (89,820)	\$ 9,980
8	Lift Station #8	1994	1	LS	\$ 55,900	\$ 55,900	19	27	70.76%	\$ (39,553)	\$ 16,347
9	Lift Station #9	1994	1	LS	\$ 47,600	\$ 47,600	19	24	80.14%	\$ (38,145)	\$ 9,455
10	Lift Station #10	1993	1	LS	\$ 56,500	\$ 56,500	20	27	73.95%	\$ (41,781)	\$ 14,719
11	Lift Station #11	1994	1	LS	\$ 62,000	\$ 62,000	19	29	66.32%	\$ (41,121)	\$ 20,879
12	Lift Station #12	1990	1	LS	\$ 95,400	\$ 95,400	13	38	34.29%	\$ (32,711)	\$ 62,689
13	Lift Station #13	1973	1	LS	\$ 57,700	\$ 57,700	40	27	90.00%	\$ (51,930)	\$ 5,770
14	Lift Station #14	2011	1	LS	\$ 88,200	\$ 88,200	2	37	5.41%	\$ (4,772)	\$ 83,428
15	Lift Station #15	2011	1	LS	\$ 88,200	\$ 88,200	2	34	5.82%	\$ (5,129)	\$ 83,071
16	Lift Station #16	1986	1	LS	\$ 57,700	\$ 57,700	27	27	90.00%	\$ (51,930)	\$ 5,770
17	Lift Station #17	1988	1	LS	\$ 64,600	\$ 64,600	25	26	90.00%	\$ (58,140)	\$ 6,460
18	Lift Station #18	1990	1	LS	\$ 60,200	\$ 60,200	16	26	62.47%	\$ (37,609)	\$ 22,591
19	Lift Station #19	1990	1	LS	\$ 48,100	\$ 48,100	16	21	77.26%	\$ (37,160)	\$ 10,940
20	Lift Station #20	1990	1	LS	\$ 75,100	\$ 75,100	16	26	61.33%	\$ (46,056)	\$ 29,044
21	SUBTOTAL					\$ 1,395,500			57.62%	\$ (804,037)	\$ 591,463
22	Mission Communication system (RTU)					\$ 50,000					\$ 50,000
23	Administration, Finance, Legal, Eng. Etc					279,100			57.62%	\$ (160,807)	118,293
24	TOTAL					\$ 1,724,600			55.95%	\$ (964,845)	\$ 759,755

Notes:

- (1) The assets' quantities and actual year in service (or weighted year for grouping of assets) were documented from available reports, fixed assets list and other information provided.
- (2) Cost new to replace per bid tabs and contractor/manufacturer quote includes material, labor, installation, site preparation, etc.
- (3) Age of all assets was calculated as of 2013, adjusted for known maintenance, repairs, and rehab.
- (4) Average service lives were based on recommended depreciation schedules, cost weighted for groupings of assets.
- (5) For all equipment that has fully depreciated a residual value of 5.0% of total cost was applied.

Schedule 5-8
Tega Cay Water Service, Inc.
Replacement Cost Approach
Wastewater Transmission Mains

Item No.	Description	Year in Service ⁽¹⁾	Quantity	Unit	Unit Cost ⁽²⁾	Total Cost	Effective Age ⁽³⁾ (Year)	Average Service Life ⁽⁴⁾ (Year)	Depreciation ⁽⁵⁾ (%)	Depreciation Amount	RCNLD
Force Mains											
1	4" PVC	1990	730	LS	\$ 9.50	\$ 6,935	23	100	23.00%	\$ (1,595)	\$ 5,340
2	4" PVC	1973	2,650	LS	\$ 9.50	\$ 25,175	40	100	40.00%	\$ (10,070)	\$ 15,105
3	4" PVC	1972	220	LS	\$ 9.50	\$ 2,090	41	100	41.00%	\$ (857)	\$ 1,233
4	8" DI	1971	1,300	LS	\$ 23.60	\$ 30,680	42	75	56.00%	\$ (17,181)	\$ 13,499
5	4" DI	1971	710	LS	\$ 18.90	\$ 13,419	42	75	56.00%	\$ (7,515)	\$ 5,904
6	SUBTOTAL					\$ 78,299			47.53%	\$ (37,217)	\$ 41,082
7	Administration, Finance, Legal, Eng. Etc					\$ 15,660			47.53%	\$ (7,443)	\$ 8,216
8	TOTAL					\$ 93,959			47.53%	\$ (44,661)	\$ 49,298

Notes:

- (1) The assets' quantities and actual year in service (or weighted year for grouping of assets) were documented from available reports, fixed assets list and other information provided.
- (2) Cost new to replace per bid tabs and contractor/manufacturer quote includes material, labor, installation, site preparation, etc.
- (3) Age of all assets was calculated as of 2013, adjusted for known maintenance, repairs, and rehab.
- (4) Average service lives were based on recommended depreciation schedules, cost weighted for groupings of assets.
- (5) For all equipment that has fully depreciated a residual value of 5.0% of total cost was applied.

Schedule 5-9
Tega Cay Water Service, Inc.
Replacement Cost Approach
Wastewater Treatment Facilities

Item No.	Description	Year in Service (1)	Quantity	Unit	Unit Cost (2)	Total Cost	Effective Age (3) (Year)	Average Service Life (4) (Year)	Depreciation (5) (%)	Depreciation Amount	RCNLD
WWTP #2											
1	Davco Package Plant	1971	1	EA	\$ 409,600	\$ 409,600	42	30	95.00%	\$ (389,120)	\$ 20,480
2	Interior walls	2013	1	EA	\$ 112,600	\$ 112,600	1	30	1.67%	\$ (1,877)	\$ 110,723
3	Sodium Aluminate feed system	2010	1	EA	\$ 94,100	\$ 94,100	4	20	17.50%	\$ (16,468)	\$ 77,633
4	Foundation Slab	1971	1	LS	\$ 41,600	\$ 41,600	42	60	70.00%	\$ (29,120)	\$ 12,480
5	UV Disinfection system	2010	1	LS	\$ 228,100	\$ 228,100	3	25	12.00%	\$ (27,372)	\$ 200,728
6	Operations Building	1971	1	LS	\$ 189,100	\$ 189,100	42	60	70.00%	\$ (132,370)	\$ 56,730
7	Storage Building	1971	1	LS	\$ 9,500	\$ 9,500	42	60	70.00%	\$ (6,650)	\$ 2,850
8	Blowcrs (75 hp) (6)	1971	2	EA	\$ 43,400	\$ 86,800	15	30	50.00%	\$ (43,400)	\$ 43,400
9	Generator	1990	1	EA	\$ 110,300	\$ 110,300	13	20	65.00%	\$ (71,695)	\$ 38,605
10	Fuel Storage	1971	1	EA	\$ 1,600	\$ 1,600	42	20	95.00%	\$ (1,520)	\$ 80
11	Site work	1971	1	LS	\$ 86,700	\$ 86,700	42	50	84.00%	\$ (72,828)	\$ 13,872
12	Electrical (blended)	1995	1	LS	\$ 138,600	\$ 138,600	8	15	53.33%	\$ (73,920)	\$ 64,680
13	Yard Piping	1971	1	LS	\$ 69,300	\$ 69,300	42	75	56.00%	\$ (38,808)	\$ 30,492
WWTP #3											
14	Davco Package Plant	1971	1	EA	\$ 409,626	\$ 409,626	42	30	95.00%	\$ (389,145)	\$ 20,481
15	Interior walls	2013	1	EA	\$ 120,500	\$ 120,500	1	30	1.67%	\$ (2,008)	\$ 118,492
16	Sodium Aluminate feed system	2010	1	EA	\$ 106,700	\$ 106,700	4	20	17.50%	\$ (18,673)	\$ 88,028
17	Foundation Slab	1971	1	LS	\$ 41,593	\$ 41,593	42	60	70.00%	\$ (29,115)	\$ 12,478
18	UV Disinfection system	2010	1	LS	\$ 241,800	\$ 241,800	3	25	12.00%	\$ (29,016)	\$ 212,784
19	Operations Building	1971	1	LS	\$ 189,058	\$ 189,058	42	60	70.00%	\$ (132,341)	\$ 56,717
20	Blowcrs (75 hp) (6)	1971	2	EA	\$ 43,400	\$ 86,800	15	30	50.00%	\$ (43,400)	\$ 43,400
21	Generator	1990	1	EA	\$ 110,284	\$ 110,284	13	20	65.00%	\$ (71,685)	\$ 38,599
22	Fuel Storage	1971	1	EA	\$ 1,575	\$ 1,575	42	20	95.00%	\$ (1,497)	\$ 79
23	Site work	1971	1	LS	\$ 86,652	\$ 86,652	42	50	84.00%	\$ (72,787)	\$ 13,864
24	Electrical (blended)	1995	1	LS	\$ 138,600	\$ 138,600	8	15	53.33%	\$ (73,920)	\$ 64,680
25	Yard Piping	1971	1	LS	\$ 69,321	\$ 69,321	42	75	56.00%	\$ (38,820)	\$ 30,501
WWTP #4											
26	Manual Bar Screen	1989	1	EA	\$ 3,151	\$ 3,151	24	50	48.00%	\$ (1,512)	\$ 1,639
27	Bar Screen Structure	1989	1	EA	\$ 15,755	\$ 15,755	24	50	48.00%	\$ (7,562)	\$ 8,193
28	Equalization Basin (45,900 gal)	1989	1	EA	\$ 37,024	\$ 37,024	24	50	48.00%	\$ (17,771)	\$ 19,252
29	Aeration/Clarification Basin (250,000)	1989	1	EA	\$ 127,614	\$ 127,614	24	50	48.00%	\$ (61,255)	\$ 66,359
30	Aeration/Clarification Equipment	1989	1	LS	\$ 307,220	\$ 307,220	24	20	95.00%	\$ (291,859)	\$ 15,361

Schedule 5-9
Tega Cay Water Service, Inc.
Replacement Cost Approach
Wastewater Treatment Facilities

Item No.	Description	Year in Service ⁽¹⁾	Quantity	Unit	Unit Cost ⁽²⁾	Total Cost	Effective Age ⁽³⁾ (Year)	Average Service Life ⁽⁴⁾ (Year)	Depreciation ⁽⁵⁾ (%)	Depreciation Amount	RCNLD
31	Diffusers	1989	1	EA	\$ 23,632	\$ 23,632	24	20	95.00%	\$ (22,451)	\$ 1,182
32	Hoffman Blowers (50 hp)	1989	2	EA	\$ 37,969	\$ 75,938	24	10	95.00%	\$ (72,142)	\$ 3,797
33	Digester (50,000 gal)	1989	1	EA	\$ 16,710	\$ 16,710	24	50	48.00%	\$ (8,021)	\$ 8,689
34	Chlorine Contact Chamber	1989	1	EA	\$ 9,453	\$ 9,453	24	50	48.00%	\$ (4,537)	\$ 4,916
35	Chlorination System	1989	1	LS	\$ 31,510	\$ 31,510	24	15	95.00%	\$ (29,934)	\$ 1,575
36	Post Aeration Pond	1989	1	EA	\$ 25,996	\$ 25,996	24	50	48.00%	\$ (12,478)	\$ 13,518
37	Mechanical Aerators (5hp)	1989	1	EA	\$ 11,265	\$ 11,265	24	20	95.00%	\$ (10,701)	\$ 563
38	Effluent Pump Station	1989	1	EA	\$ 12,399	\$ 12,399	24	45	53.33%	\$ (6,613)	\$ 5,786
39	Hydromatic Pumps (25hp)	1989	2	EA	\$ 35,842	\$ 71,685	24	12	95.00%	\$ (68,100)	\$ 3,584
40	De-chlorination System	1989	1	LS	\$ 31,510	\$ 31,510	24	15	95.00%	\$ (29,934)	\$ 1,575
41	Operation Building	1989	1	LS	\$ 132,341	\$ 132,341	24	60	40.00%	\$ (52,936)	\$ 79,404
42	Site work	1989	1	LS	\$ 102,407	\$ 102,407	24	50	48.00%	\$ (49,155)	\$ 53,251
43	Electrical	1989	1	LS	\$ 69,321	\$ 69,321	24	15	95.00%	\$ (65,855)	\$ 3,466
44	Yard Piping	1989	1	LS	\$ 86,652	\$ 86,652	24	75	32.00%	\$ (27,729)	\$ 58,923
45	SUBTOTAL					\$ 4,371,991			60.57%	\$ (2,648,100)	\$ 1,723,891
46	Administration, Finance, Legal, Eng. Etc					\$ 874,398			60.57%	\$ (529,620)	\$ 344,778
47	TOTAL					\$ 5,246,389			60.57%	\$ (3,177,720)	\$ 2,068,669

Notes:

- (1) The assets' quantities and actual year in service (or weighted year for grouping of assets) were documented from available reports, fixed assets list and other information provided.
- (2) Cost new to replace per bid tabs and contractor/manufacturer quote includes material, labor, installation, site preparation, etc.
- (3) Age of all assets was calculated as of 2013, adjusted for known maintenance, repairs, and rehab.
- (4) Average service lives were based on recommended depreciation schedules, cost weighted for groupings of assets.
- (5) For all equipment that has fully depreciated a residual value of 5.0% of total cost was applied.
- (5) Rehabed in 2010.

Schedule 5-10
Tega Cay Water Service, Inc.
Replacement Cost Approach
Wastewater System Summary

Item No.	Description	Total Costs	Depreciation ⁽¹⁾ (%)	Depreciation Amount	RCNLD
1	Wastewater Services	\$ 898,872	76.37%	\$ (686,461)	\$ 212,411
2	Gravity Collection System	9,144,837	55.12%	(5,040,336)	4,104,501
3	Lift Stations	1,724,600	55.95%	(964,845)	759,755
4	Wastewater Transmission Mains	93,959	47.53%	(44,661)	49,298
5	Wastewater Treatment Facilities	5,246,389	60.57%	(3,177,720)	2,068,669
6	TOTAL	\$ 17,108,657	57.95%	\$ (9,914,022)	\$ 7,194,635
7	TOTAL (Rounded)	\$ 17,100,000		\$ (9,910,000)	\$ 7,190,000

Notes:

(1) For all equipment that was fully depreciated a residual value of 5% was applied.

DRAFT

SECTION 6

SECTION 6 INCOME APPROACH

6.1 INTRODUCTION

The purpose of this section of the Report is to provide an indication of the fair market value of the Utility based on the income approach. In general, the income approach values the water and wastewater systems based on the present value of the available net cash flows generated from the ongoing operations. Historical financial and customer data is utilized together with certain pro forma adjustments in order to develop the projected operating results for the system and estimate future net cash flows available to the current owner (in the hands of the seller). The projected cash flows are then discounted to calculate the present value of the available funds being generated. Under this approach, the value of the system is assumed to be equal to the value of the future net cash flows available to the current owner, if such ownership is maintained throughout the projection period.

Adjustments have been made to the income approach for the purpose of this report to reflect an indication of value based on potential ownership by the buyer. Both the City and TCWS agreed to have an opinion of value developed in terms of income value in the hands of the buyer. This analysis has been performed in that perspective and represents a significant assumption.

6.2 DATA SOURCES

The analyses developed herein utilize a significant amount of data. The information provided in such data sources has not been independently verified and for purposes of this analysis the information is assumed to be accurate and reliable. The income approach contained herein uses the following data:

1. The annual reports for calendar years ended December 31, 2010 through December 31, 2012 as filed with the SCPSC,
2. Year to-date and projected revenue and expense information for the Utility for 2013,
3. The current water rates in effect for the Utility (see **Appendix I**), and

4. Other financial data used to develop a present value discount factor (sourced as noted).

6.3 MARKET INCOME VALUATION APPROACHES

The income approach generally measures the buyer's risk against the potential earnings of a company. Two methods are typically used to provide an indication of value – capitalization and discounting. Both methods use a formula to calculate the value of a company based on future profits. While capitalization uses a formula based on past performance, the discount formula takes into account the risk factors that would potentially be taken into account by the buyer. A brief description of the Capitalization of Earning Method (“Cap Rate”) and the Discounted Cash Flow Method (“DCF”) are shown below.

6.3.1 Capitalization of Earnings Method

In its simplest form, the capitalization method basically divides the business expected annual earnings by an appropriate capitalization rate. The idea is that the business value is defined by the business earnings and the capitalization rate is used to relate the two. Capitalization rates provide a relatively non-complex tool to use for valuing property based on its current income and/or cash flow ability. A comparatively lower capitalization rate would indicate less risk associated with the investment (increasing demand and value for the product), and a comparatively higher cap rate for a property might indicate more risk (reduced demand and value for the product). A Cap Rate approach to income valuation reflects a general market approach.

6.3.2 Discounted Cash Flow Method

The discounting method works a bit differently than the capitalization method. First, the business income stream is projected over some future period of time, usually measured in years. Next, the discount rate which reflects the risk of realizing this income over time is determined. In addition to the income over time, a calculation is made to figure out what the business will be worth at the end of the projection period. This end-of-period value is also known as a reversion value, or residual value or terminal business value. The summation of these discounting calculations provides the indication of value of

what the company is worth today. A DCF approach to income valuation reflects a specific income approach.

6.4 INCOME APPROACH ANALYSIS

In order to calculate a value for the Income Approach, the income to be evaluated must be identified. As discussed in the book “Valuing a Business: the Analysis and Appraisal of Closely Held Companies” by Shannon P. Pratt, et al, the income statement variables most often used to develop business value measures for an indication of the market value of invested capital are:

- Net sales (gross revenue less cost of goods sold (“GOCS”))
- Earnings before interest and taxes (“EBIT”)
- Earnings before depreciation, amortization, interest, and taxes (“EBDIT” or “EBITDA”)
- Net free cash flow available on invested capital

For purposes of the Income approach analysis presented herein, GAI has selected the EBITDA income streams to analyze. The development of the income approach to valuation analysis required certain assumptions and considerations with regard to financial, economic, and operational conditions that may occur in the future. Although such assumptions and considerations are applied based on current and historical data pertaining to the Utility, to the extent that actual future conditions differ from those utilized herein, the results may vary from those in the analysis. The principal assumptions and considerations utilized in the income approach are summarized as follows:

1. Based on an historical analysis, customer connections over the past 5 years have averaged approximately one (1) connection per year. The service area for the Utility is generally built-out. For purposes of these projections, we have assumed the number of connections annually will be minimal and have held connections constant over the projection period.
2. The estimated average metered water flow per ERC is based on recent trends pursuant to information provided in the annual reports. For the purpose of this

analysis, it is assumed that such average flow per ERC relationships will remain relatively constant throughout the projection period.

3. For the purpose of this analysis we assumed that the water and wastewater systems will be able to operate with the existing employees.
4. Rate increases over time are expected to, at minimum, average equal to increases in operating and maintenance (O&M) expenses; thereby generating constant net revenues (gross revenues less cost of goods sold).
5. This analysis has been performed in the perspective of being in the hands of the prospective buyer and represents a significant assumption.
6. For calculating cash flows from Utility operations, an analysis period of 20 years was used, together with a discount rate of 6.0 percent (6%). The discount rate is based on the Utility being owned and operated as a public, not-for-profit entity and was developed based on the following:

Factor	Rate
Risk Free Rate ⁽¹⁾	4.10%
Futures Risk ⁽²⁾	0.65%
Industry Risk ⁽³⁾	0.75%
Specific Risk ⁽⁴⁾	0.50%
Total	6.00%

(1) Based on the 20-year average of the Daily 30-year T-Bill risk free rate as of 11/15/2013.

(2) Based on the predicted dollar value in future periods by the US Treasury.

(3) Based on the averages on industry betas which determined low industry risk with an average beta less than 1.

(4) Based on the creditworthiness by state listing provided by Standard's and Poor's in 2008.

6.5 VALUE INDICATED BY THE INCOME APPROACH

Based on current EBITDA, an income analysis for a 20-year period was prepared for both water and wastewater systems of the Utility. The results of this analysis are presented on **Schedule 6-1** as summarized in **Table 6-1** below:

TABLE 6-1
SUMMARY OF INCOME APPROACH RESULTS
FROM WATER AND WASTEWATER OPERATIONS ⁽¹⁾

Description	Amount
Present Value of Net Revenues	\$ 6,330,330
Reversion Value	1,352,887
Total Income Approach Value	\$ 7,683,217
Subtotal (Rounded)	\$ 7,680,000
Less: Corrective improvements	(950,000)
Total (Rounded)	\$ 6,730,000

(1) This conclusion is relative only in conjunction with the circumstances presented herein and made part of such projections, and no assurances are made pursuant to the results or outcome projected herein. Moreover, the annual inflation/deflator factors are significant assumptions incorporated herein.

6.6 CONSIDERATION

We have considered the income approach. Due to regulation, the value derived is less than market. All of the major national water companies have stated that in general, only a distressed utility would sell at its regulated level. For that type of sale there is no reversion. Research at the National Association of Water Companies (NAWC) confirms the above by Utilities, Inc, American Water Works, Aqua America, and California Water. In combination these four (4) utility companies create the most significant private utilities in the United States. In the El Dorado case in 2004, it was determined that based on the present regulated marketplace, 85 percent equity transactions are non-for-profit entities and only 15 percent are for-profit-entities. I have included reversion value herein to reflect a fair market transaction.

The purpose of this report is to provide a fair market value. Therefore, the income approach, though considered, was given the same weight as the cost approach. Note that a deduction of \$950,000 is applied in all three approaches to reflect correction of the overflow problems.

Schedule 6-1
Tega Cay Water Service, Inc.
Net Income Approach

Total Sales volumes:	Metered volume (water)	100,354,795	59,628,600	
Operating Revenues:	Customer revenues/metered sales	\$ 391,288	\$ 813,850	\$ 1,205,138
	Other revenue	4,487	27,548	32,035
	Total Operating revenues	395,775	841,398	1,237,173
Cost of Revenue:	Direct Labor	(150,562)	(148,704)	(299,266)
	Utilities	(2,064)	(69,184)	(71,248)
	Purchased water	(13,484)	-	(13,484)
	Chemicals, materials & supplies, and transport	(58,111)	(204,849)	(262,960)
	Miscellaneous operating	(24,669)	(13,639)	(38,308)
	Total Cost of Revenue	(248,890)	(436,376)	(685,266)
EBITDA:	Gross profit/(loss)	146,885	405,022	551,907
Non-operating expenses:	General and administrative expenses	(148,204)	(144,446)	(292,650)
	Depreciation	(113,593)	(169,910)	(283,503)
	Amortization	32,405	98,162	130,567
	Total non-operative expenses	(229,392)	(216,194)	(445,586)
Other income/(expenses):	Interest or investment income/(expense)	1,953	-	1,953
	Interest payments	(79,708)	(78,724)	(158,432)
	Total other income/(expenses)	(77,755)	(78,724)	(156,479)
	Income/(loss) before income taxes	(160,262)	110,104	(50,158)
	Income tax benefit/(expense)	(61,666)	(60,904)	(122,570)
	Net income/(loss)	\$ (221,928)	\$ 49,200	\$ (172,728)
	Profit margin (After Income Taxes)	-56.1%	5.8%	-14.0%
Cash flow from operating activities:	Cash received from customers	\$ 391,288	\$ 813,850	\$ 1,205,138
	Cash received from other operating activities	4,487	27,548	32,035
	Cash paid to supplies for goods and services	(246,532)	(432,118)	(678,650)
	Cash paid to employees for services	(150,562)	(148,704)	(299,266)
	Net Cash provided by (used in) operating activities	(1,319)	260,576	259,257
Cash flow from financing activity:	Interest or investment income received	1,953	-	1,953
	Interest paid	(79,708)	(78,724)	(158,432)
	Principal payments	-	-	-
	Net Cash provided by (used in) financing activities	(77,755)	(78,724)	(156,479)
	Net increase/(decrease) in cash	\$ (79,074)	\$ 181,852	\$ 102,778
Reconciliation of net income to net cash:	Net income/(loss)	\$ (221,928)	\$ 49,200	\$ (172,728)
	Adjustments:			
	Depreciation and amortization	81,188	71,748	152,936
	Income tax	61,666	60,904	122,570
	Net Changes in operating assets and liabilities	-	-	-
	Net Cash provided by (used in) operating activities	\$ (79,074)	\$ 181,852	\$ 102,778

DRAFT

SECTION 7

SECTION 7 COMPARABLE SALES APPROACH

7.1 INTRODUCTION

The purpose of this market approach is to examine the history of water and wastewater utility acquisitions and analyze the conditions under which the systems were acquired in an effort to arrive at an implied purchase price for the water and wastewater system providing service to the Tega Cay area located in York County, South Carolina. The selected transactions of utility systems are compared using quantitative values of Equivalent Residential Connections (“ERCs”) and system capacity. Our research and experience was used in order to gather relevant information regarding similar acquisitions in Florida, Georgia, North Carolina and South Carolina. It is GAI’s opinion that similar sales in Florida, Georgia, and North Carolina would be representative of transactions in South Carolina. The potential list of utility sales is narrowed down to those that are considered comparable to the subject system. In order to compare the different transactions, a variety of factors were considered.

7.2 FACTORS INFLUENCING UTILITY ACQUISITIONS

There are many factors involved in the agreement of an acquisition price for a utility system. These factors create both similarities and differences between the transactions resulting in the formation of a well-mixed market of utility sales. The following is a discussion of several important factors that impact the acquisition price of utility systems.

7.2.1 System Assets

Utility systems vary considerably in their sizes, treatment capacities, physical condition (which is sometimes an indicator of age or level of maintenance provided), as well as the number and types of customers. All of the above are components that form the utility’s assets to be transferred. It is common that knowledgeable buyers of utility systems look closely into these components prior to agreeing upon a purchase price. The following areas regarding system assets are often considered in an evaluation:

- a. Type of service provided (water only, wastewater only, and both water and wastewater components).
- b. Extent and physical characteristics of the utility systems and aggregate effective age of the system.
- c. Water and/or wastewater treatment capacities.
- d. Actual customers connected to the utility systems and their characteristics (size).
- e. Process and level of treatment necessary.
- f. Type of sale (context of transaction).
- g. Date of sale.
- h. Location of the system.
- i. Condition of water and/or wastewater facilities in operation.

7.2.2 Regulatory Compliance

The extent and/or magnitude of litigation and the risk of loss associated with as well as fines or ordered corrective actions effect system pricing.

7.2.3 Competitive Market or Monopoly

The exclusivity of the service territories can be a major factor influencing an acquisition and the pricing of a utility. If a utility is granted either franchise rights or territorial certificates that protect its service territories and make the utility a sole provider of utility services within such territories, the value may be substantially enhanced. However, if other private or public utilities can provide similar services in the same territories, the opposite effect may occur.

7.2.4 Method of Acquisition

The majority of the utility transactions occur through negotiations between interested buyers and motivated sellers.

7.2.5 Context of Transaction

It is important to consider the variance to the “industry standard” terms and conditions of the purchase and sale agreement. If special terms would create value, then adjustments are made.

7.3 MARKET SUMMARY

The overall market for utility sales in the market includes a variety of circumstances and transactions. In order to reduce some of the inherent variability in utility transfers, it is helpful to establish a common indicator of value. In estimating the value of the system utilizing the comparable sales approach, one of the most widely used common indicators of value is the cost per ERC.

Significant variability is typically observed at lower numbers of ERCs. Some small systems are abandoned and conversely, some small systems are more valuable than the customer base due to other factors. As the number of ERCs increases, the variability tends to decrease. Typically, larger systems are viable operations and are not abandoned. Likewise, if the system serves a large area, then other factors such as the integration benefits resulting from economies of scale are not as significant as the utility's large customer base.

Additionally, larger utility systems tend to have similar staffing and levels of service requirements, normally provide fire protection, and are not typically reliant on temporary package plant facilities for treatment. Management and operations staff are usually employees of the utility and are not part-time contract operators. The owners and purchasers are typically knowledgeable regarding the systems and can afford expert utility advisors to assist in the transaction due to the magnitude of funds involved.

7.4 SELECTED COMPARABLE SALES

As indicated earlier, there are several factors that must be considered in the selection and evaluation of the comparable set of system transactions. The following discussion presents the criteria utilized in the comparable sales selection process, as well as a brief description and background of each selection.

All the information regarding these transactions was gathered from public documents and other Public Service Commissions.

7.4.1 Criteria

The selection of potential transactions to be utilized in the comparison analysis presented herein involved a review of over 1,000 utility transactions. The selection process was based upon the following criteria:

- a. Sales occurring within the United States and specifically Florida, Georgia, North Carolina and South Carolina;
- b. Combined water and wastewater ERCs served at the time of closing of between 750 and 26,500; and,
- c. Sales occurring between the years of January 1, 2004 and November 15, 2013..

7.4.2 Selected Comparable Sales

Based upon the criteria described above, nine (9) transactions were selected for the comparable sales analysis. The selected utility sales are assumed to represent arm's length transactions and thus are representative of fair market value.

Schedule 7-1 provides the list of selected comparable utility transactions including the applicable seller and purchaser for each transaction, the year of the transaction, the purchase price, and the number of total ERCs.

7.4.3 Summary of Selected Transactions

This subsection presents a brief description of the selected system transactions shown in **Schedule 7-1**.

Sale No. 1 Carolina Water Service Inc. Kings Grant, Plantation Ridge and Teal on the Ashley to Dorchester County, South Carolina

In June of 2006, Carolina Water Service Inc. agreed to sell their water and wastewater utility system providing service to Kings Grant, Plantation Ridge and Teal on the Ashley to Dorchester County, South Carolina. The system provided service to 779 water and wastewater customers. Dorchester County agreed to pay \$1,791,700 for the water and wastewater assets.

The Kings Grant wastewater treatment facility was in need of considerable upgrades, estimated to require \$1,250,000 capital expenditures. The cost of the upgrades to the Kings Grant and Teal WWTFs would be passed along to future customers in rates. Dorchester County operates a 4 million gallon per day WWTF and has the capacity to absorb the wastewater flow from Kings Grant, Plantation Ridge and Teal on the Ashley subdivisions.

Sale No. 2 Carolina Blythe Utility Company to Brunswick County, North Carolina

On October 31, 2003, the Carolina Blythe Utility Company agreed to sell their water and wastewater utility systems to Brunswick County, North Carolina. The water and wastewater systems provided service to the Carolina Shores and Brunswick Plantation subdivisions. Brunswick County has agreed to pay \$1,780,000 for the water system and \$6,345,000 for the wastewater system for a grand total of \$8,125,000.

The Carolina Blythe Utility Company provided water service to 2,040 customers and sewer service to 1,700 customers in the Carolina Shores subdivision. The company provided sewer service to 371 customers in the Brunswick Plantation subdivision.

The purchase by Brunswick County was part of an effort to consolidate the water and sewer operations in southern Brunswick County and the acquisition of the Carolina Blythe Utility Company was an essential feature of such consolidation.

Sale No. 3 City of Brunswick- Glynn County to Brunswick-Glynn County Joint Water and Sewer Commission

On June 16, 2010, the City of Brunswick and Glynn County agreed to sell their water and wastewater systems to the Brunswick-Glynn County Joint Water and Sewer Commission for \$33,967,325.

The water system is comprised of four separate water systems which provide water service to the North Mainland, the City of Brunswick, the South Mainland, and the St. Simons Island Water System. Each system consisted of a network of interconnected distribution piping, water production facilities, elevated and ground storage tanks. In total the water systems served approximately 26,500 accounts with a service population of approximately 66,250 people. The four (4) water distribution systems consisted of 469 miles of distribution mains ranging in size from 2-inch to 16-inch with the majority being 8-inch mains.

The sewer system is comprised of three (3) wastewater treatment plants called water pollution control plants with associated collection systems. In total the sanitary sewer systems serve approximately 24,500 accounts with a service population of approximately 61,250 people. The sewer system covers ninety percent (90%) of the area within the city limits and thirty five percent (35%) of the county.

Sale No. 4: Wedgefield Utilities, Inc. to Pluris Wedgefield, LLC

On April 16, 2009, Pluris Wedgefield, LLC purchased water, wastewater and reclaimed water facilities from Wedgefield Utilities. The utility system was originally built in 1969. The purchase price for all of the assets purchased by Pluris Wedgefield, LLC was \$7,300,000.

The purchased water system had a permitted capacity of 1.037 MGD. The water system served a total of 1,642 ERCs in 2008. Of those customers, 1,572 ERCs represented residential customers. The maximum number of ERCs that can be served by the water system currently is 1,870 ERCs. The water system utilized Ion Exchange Softening as its primary type of water treatment.

The wastewater system purchased by Pluris Wedgefield, LLC served 1,586 customers, according to the 2008 Annual Report. The permitted capacity for the wastewater facilities was 0.368 MGD. The average daily flow for the wastewater system was 0.239 MGD and treated 87,408,000 gallons of wastewater in 2008.

Sale No. 5: Aloha Utilities, Inc. to Florida Governmental Utility Authority

On October 8, 2008, the Florida Governmental Utility Authority agreed to purchase water, wastewater and reclaimed water systems from Aloha Utilities, Inc. The purchase price for the utility systems was \$90,500,000. The water and wastewater systems were originally issued Certificate Nos. 136-W and 97-S in 1973. Aloha Utilities, Inc. began operations as a water and sewer utility servicing the Aloha Gardens sub-division located in Holiday, Florida, west of U.S. Highway 19. In subsequent years, as the Holiday area expanded, the utility extended its service area to the east of U.S. Highway 19. The company expected to add 150 new connections each year. However, the slow down in the real estate market conditions made any long-term growth estimate uncertain.

The sale consisted of two (2) water systems: Aloha Gardens and Seven Springs. The Aloha Gardens system had a permitted capacity of 0.636 MGD and served 3,466 ERCs, according to their 2007 Annual Report. The Aloha Gardens System is at its maximum number of ERCs which can be served. The Seven Springs system had a 3.3 MGD permitted capacity and served 13,462 ERCs in 2007. The Seven Springs System has a future system capacity of approximately 20,000 ERCs.

The sale also included Aloha Gardens and Seven Springs wastewater systems. The Aloha Gardens wastewater system served 3,086 ERCs in 2007. Aloha Gardens had an average daily flow of 0.476 MGD and treated a total of 173,883,000 gallons of wastewater in 2007. The Seven Springs wastewater system served a total of 13,068

ERCs in 2007. The Seven Springs System had a permitted capacity of 2.1 MGD. In 2007, the average daily flow for Seven Springs was 1.506 MGD and the system treated a total of 550,034,531 gallons of wastewater.

Sale No. 6: Lake Utility Company to the City of Leesburg

On June 12, 2006, the City of Leesburg purchased the Lake Utility Company's water and wastewater facilities, all of which are located in Lake County, Florida. The total purchase price for the utility systems was \$12,000,000.

The water system had a permitted capacity of 2.4 MGD. The primary type of treatment for the water system was chlorination. According to the 2005 Annual Report, the water system served 3,144 ERCs. The future system connection capacity for the system is 3,374 ERCs.

Lake Utility Company's wastewater system served 2,634 ERCs in 2006. The permitted capacity of the system is 0.370 MGD. The average daily flow for the wastewater system in 2005 was 202,795 gallons. The total gallons of wastewater treated by the system in 2005 were 74,020,000.

Sale No. 7: Lindrick Service Corporation to Florida Governmental Utility Authority

In November of 2009, the Lindrick Service Corporation agreed to sell their water and wastewater utility to the Florida Governmental Utility Authority. The purchase price for the utility system is \$16,800,000. The utility was originally issued Certificate Nos. 157-W and 107-S in 1973. The water and wastewater utility provided service to approximately 4,200 customers in Pasco County. The utility is located in the Northern Tampa Bay Water Use Caution Area of the Southwest Florida Water Management District (SWFWMD). The utility's 2008 annual report shows gross revenue of \$2,778,925 and net operating income of \$164,734.

The sale consisted of two (2) water treatment plants: Lindrick and Shamrock Heights. The Lindrick water treatment plant has a permitted capacity of 0.300 MGD and had a 0.450 MGD peak capability. The Shamrock Heights water treatment plant has a permitted capacity of 0.125 MGD and had a 0.187 MGD peak capability. The two

systems combined to serve 4,174 ERCs. The systems had a future system connection capacity of 5,801 ERCs. At the time of the sale the systems anticipated approximately 20 new ERC connections annually.

Lindrick Service Corporation's wastewater system served 2,619 ERCs at the time of the sale. The wastewater treatment plant had an average daily flow of 481,934 gallons. According to the Lindrick's 2008 annual report, the wastewater treatment plant treated 175,906,000 total gallons of wastewater in 2008. The wastewater system's future system connection capacity is 3,988 ERCs.

Sale No. 8: St. Johns Service Company to St. Johns County, Florida

On August 29, 2005, the St. Johns Service Company agreed to sell their water and wastewater systems to St. John's County, Florida. The purchase price for the systems was \$26,800,000. The service area for the St. John's Service Company included portions of Ponte Vedra, Florida.

This sale included two (2) water treatment plants: Marsh Landing and Inlet Beach. The Marsh Landing facility has a permitted capacity of 2.4 MGD while the Inlet Beach facility has a permitted capacity of 3.6 MGD. These two facilities served a combined 8,337 ERCs. Three (3) of St. John's Service Company's wells serve the Marsh Landing facility with the remaining four (4) serving the Inlet Beach facility.

This sale also included three (3) wastewater treatment plants: Marsh Landing, Inlet Beach and Players Club South. The Marsh Landing wastewater treatment plant had a permitted capacity of 0.80 MGD. The Inlet Beach wastewater treatment plant had a permitted capacity of 0.50 MGD and the Players Club South wastewater treatment plant had a permitted capacity of 0.70 MGD. These three facilities served a combined 7,623 ERCs.

Sale No.9: Miles Grant Water and Sewer Company to Martin County, Florida

On August 13, 2009 the Miles Grant Water and Sewer Company agreed to sell their water and wastewater facilities to Martin County, Florida. The purchase price for the

system was \$7,500,000. According to their 2008 Annual Report, the Miles Grant Water and Sewer Company had an operating income of \$777,118.

The water treatment plant that was included in this transaction had a permitted capacity of 0.300 MGD. The treatment plant utilized lime softening, filtration and chloramination as forms of treating water. The water system consisted of six (6) wells located throughout the service area in Martin County. At the time of the sale, the Miles Grant Water and Sewer Company anticipated only 2 ERCs growth annually.

The wastewater treatment plant had a permitted capacity of 0.300 MGD. The wastewater treatment plant utilized extended aeration as the form of treatment. The wastewater treatment plant had an average daily flow of 0.086 MGD, while treating 31,511,000 gallons of wastewater in 2008. The effluent was reuse and used for golf course irrigation.

7.5 ADJUSTMENTS TO PURCHASE PRICES

In order to equitably compare historical utility sales to that of the utility considered herein, consideration must be given to several factors as discussed above. The considered factors are show below in **Table 7-1**.

**TABLE 7-1
SALES COMPARISON
LISTING OF ADJUSTMENTS**

Adjustment	Description
Capacity	Permitted Design Capacity
Process	Level of Owner's Treatment
Components	Ratio Adjustment on OCNLD basis (See Schedule 7-2)
Process	Level of Owner's Treatment
Type of Sale	Negotiated, Contracted, Franchise, Condemnation or Orderly Liquidation
Location	Coastal, Interior, Urban, Suburban or Rural
Size	Equivalent Residential Units or Connections (ERCs) based upon AWWA meter size.

7.5.1.1 Size of the System

Unit prices can vary considerably depending on the quantity sold. As discussed earlier, the size of each water and wastewater utility is described in terms of the ERCs that the system serves based on AWWA meter equivalencies.

Based on the adjustment made for the size of each comparable system, a system serving 1,750 water ERCs has an average price per ERC of \$1,746. Furthermore, a wastewater system serving 1,750 ERCs has an average price per ERC of \$2,946.

7.6 ANALYSIS AND CONCLUSIONS

Table 7-2 summarizes the price per ERC based on both the modernized allocated purchase price and the system size.

**TABLE 7-2
COMPARABLE SALES ANALYSIS
MODERNIZED ADJUSTED PRICE PER ERC**

No.	Adjustment Factor	Adjusted \$ / ERC	
		Water	Wastewater
1	ERC	\$ 1,746	\$ 2,946

Based on the data provided by the Tega Cay Utility System and our physical inspection of the system connections, the Tega Cay Utility System has a total of 1,750 water ERCs and 1,750 wastewater ERCs. Using the final price per water and wastewater ERCs of \$1,746 and \$2,946, the comparable sales analysis provides a total estimated value of the Utility System assets to be acquired to be **\$7,200,000**, as detailed on **Table 7-3** below.

**TABLE 7-3
SUMMARY OF VALUE
COMPARABLE SALES APPROACH**

Customer Type	Number of ERCs	Value per ERC	Total Value (Rounded)
Water	1,752	\$ 1,746	\$ 3,058,992
Wastewater	1,720	\$ 2,946	<u>5,093,634</u>
Total			\$ 8,152,626
Total (Rounded)			\$ 8,150,000
Less: Deficiencies			950,000
Total (Rounded)			\$ 7,200,000

**SCHEDULE 7-1
TEGA CAY WATER AND WASTEWATER SYSTEM
COMPARABLE SALES ANALYSIS
Selected Water and Wastewater Transactions**

No.	Name of Utility	Name of Purchaser	State	System Type	Year	Purchase Price	Modernization Factor	Number of ERCs			
								Modernized Purchase Price	Water	Wastewater	Total
1	Carolina Water Service Inc. -King's Grant, Plantation Ridge, and Teal on the Ashley	Dorchester County, South Carolina	SC	W/S	2006	\$ 1,791,700	\$ 1.26	\$ 2,248,805	779	779	1,558
2	Carolina Blythe Utility Company, Inc.	Brunswick County	NC	W/S	2004	\$ 8,125,000	\$ 1.42	\$ 11,505,298	2,040	2,000	4,040
3	City of Brunswick- Glynn County	Brunswick-Glynn County Joint Water and Sewer Commission	GA	W/S	2010	\$ 33,967,000	\$ 1.10	\$ 37,282,496	26,500	26,500	53,000
4	Wedgfield Utilities, Inc.	Pluris Wedgfield	FL	W/S	2009	\$ 7,300,000	\$ 1.13	\$ 8,272,805	1,642	1,586	3,228
5	Aloha Utilities, Inc.	Florida Governmental Utility Authority in Pasco County	FL	W/S	2008	\$ 90,500,000	\$ 1.12	\$ 101,430,213	16,928	16,154	33,082
6	Lake Utility Company	City of Leesburg	FL	W/S	2005	\$ 12,000,000	\$ 1.26	\$ 15,061,481	3,144	2,634	5,778
7	Lindrick Service Corporation	Florida Governmental Utility Authority	FL	W/S	2009	\$ 16,800,000	\$ 1.12	\$ 18,896,969	4,174	2,933	7,107
8	St. John's Service Company	St. John's County, Florida	FL	W/S	2006	\$ 26,800,000	\$ 1.29	\$ 34,631,269	8,337	7,623	15,960
9	Miles Grant Water and Sewer Company	Martin County, Florida	FL	W/S	2009	\$ 7,500,000	\$ 1.13	\$ 8,463,729	857	1,214	2,071

DRAFT

SCHEDULE 7-2
TEGA CAY WATER AND WASTEWATER SYSTEM
COMPARABLE SALES ANALYSIS
Asset Composition Adjustment

No.	Name of Utility	Name of Purchaser	System Type	Water System			Wastewater System		
				Modernized Alloc P.P.	ERCs	\$/ERC	Modernized Alloc P.P.	ERCs	\$/ERC
1	Carolina Water Service Inc. -King's Grant, Plantation Ridge, and Teal on the Ashley	Dorchester County, South Carolina	W/S	\$ 991,768	779	\$ 1,273.13	\$ 1,257,037	779	\$ 1,613.65
2	Carolina Blythe Utility Company, Inc.	Brunswick County	W/S	\$ 7,193,914	2,040	\$ 3,526.43	\$ 4,311,383	2,000	\$ 2,155.69
3	City of Brunswick- Glynn County	Brunswick-Glynn County Joint Water and Sewer Commission	W/S	\$ 14,912,998	26,500	\$ 562.75	\$ 22,369,497	26,500	\$ 844.13
4	Wedgfield Utilities, Inc.	Pluris Wedgfield	W/S	\$ 4,948,475	1,642	\$ 3,013.69	\$ 3,324,331	1,586	\$ 2,096.05
5	Aloha Utilities, Inc.	Florida Governmental Utility Authority in Pasco County	W/S	\$ 36,028,031	16,928	\$ 2,128.31	\$ 65,402,182	16,154	\$ 4,048.67
6	Lake Utility Company	City of Leesburg	W/S	\$ 6,176,091	3,144	\$ 1,964.41	\$ 8,885,390	2,634	\$ 3,373.34
7	Lindrick Service Corporation	Florida Governmental Utility Authority	W/S	\$ 7,637,156	4,174	\$ 1,829.70	\$ 11,259,813	2,933	\$ 3,839.01
8	St. John's Service Company	St. John's County, Florida	W/S	\$ 13,345,819	8,337	\$ 1,600.79	\$ 21,285,450	7,623	\$ 2,792.27
9	Miles Grant Water and Sewer Company	Martin County, Florida	W/S	\$ 3,732,674	857	\$ 4,355.51	\$ 4,731,055	1,214	\$ 3,897.08

DRAFT

DRAFT

SECTION 8

SECTION 8
RECONCILIATION OF VALUATION APPROACHES

The cost, income, and comparable sales approaches for the Utility to be acquired are considered in this section. The numeric results for each approach are presented below in **Table 8-1**.

Table 8-1
Results of Valuation Approaches

<u>Valuation Approach</u>	<u>Value</u>
Replacement Cost New Less Depreciation	\$ 9,130,000
Income	\$ 6,730,000
Comparable Sales	\$ 7,200,000

The cost approach provides a specific valuation for the Utility. The asset listing provided, along with field observations, provide the basis for producing the cost approach. This approach includes the adjustments to the system and the loss of value from physical, functional, and external depreciation, when applicable. This approach includes the documented value/cost of assets as of November 15, 2013 and is an accurate representation of the complex, special purpose property. This approach considered the Utility values separately as described in **Section 5**. Using this approach, I have valued the combined Utility at \$9,130,000, and I have quantified the weight for this approach at approximately 45%. Presently, in the marketplace, the cost approach is not determinate of value, but rather is more a measure of asset surety. Recent disinflation (past 2 – 3 years) has somewhat weakened the weight to be given to this approach.

The income approach values the Utility based on the present value of the available cash flows anticipated to be generated from the ongoing operation of the system, in the hands of the seller. Generally, in the case of regulated Utility operations, there are

several unique and mitigating factors which would tend to diminish the importance of the income approach, such that the weighting applied to this approach could reasonably be zero. However, for the purpose of this Report, both the City and TCWS agreed to have an opinion of value developed in terms of income value in the hands of the buyer. As such, this approach has been performed in that perspective and I have valued the combined Utility at \$6,730,000 using this approach. I have quantified the weight of the income approach at 45%.

There are numerous sales of existing water and wastewater systems in a variety of contexts. Due to this data, I have included the sales comparison approach on this exclusive (monopoly) special purpose property at \$7,200,000. Based on our consideration of the sales comparison approach, I have quantified the weight to be given the approach at approximately 10%. In the real-estate marketplace, this approach is more determinative of value. However, the nature and context of transactions included in this analysis are difficult to adjust in order to provide comparability with minimal variation. The comparable sales approach therefore has been weighted less than the cost and income approaches for this Utility.

Considering the results provided above in conjunction with my prior experience and professional judgment, the opinion of the value of the TCWS water and wastewater utility system facilities as of November 15, 2014 is:

\$ 7,860,000

(seven million eight hundred sixty thousand dollars)

DRAFT

APPENDICES

DRAFT

APPENDIX A

APPENDIX A

ASSUMED STANDARD TERMS AND CONDITIONS

The typical industry transaction is concluded with some negotiation and the standard terms and conditions provided below:

- Purchase Price, as Cash as Closing
- Bill of Sale
- Satisfaction of Liens, Encumbrances or Title Problems to Obtain Free and Clear Title
- Easement, Land Rights, or Other Utility Rights Transferred
- Escrow as appropriate to the Transaction- Typically 5%
- Disclosure and Adjustments for Prepaid or Discounted Unconnected Connections
- Disclosure and Representations of Regulatory Conduct and Compliance
- Transfer of Necessary Agreements
- Transfer of Customer Deposits
- Transfer of all Records, Drawings, Reports, Permits and Like Documents
- 100% Accounts Receivable Collected Forward to Seller
- Vendor Invoices, Materials, Supplies as Incurred by Closing Paid by Seller
- Inventory of Consumables at Closing
- Prorated Taxes and/or Franchise Fees
- Prior Inspection of all Closing Documents and Scheduling of Pre-Closing
- Consideration for Performance and Penalty or Resolution of Non-performance
- Verification of Proper Authorization to Bind a Party
- Insurance and Indemnification Issues
- Conduct After Agreement and Before Closing
- Seller Keeps Existing Funds, Restricted Funds and Satisfies Debt Obligations
- "As-is" Type of Transaction
- Operational Staff and Other Employee Consideration For Hire by Buyer
- Rolling Stock, Movable Equipment, Laboratory Equipment, Tools and Accessories or Appurtenances Included
- Closing Date, Time, Place and Procedures
- Disclosure and/or Dispensation of Litigation
- Assistance in Petitions of Transfer, No Objections, Contractual Extent and Type of Cooperation
- Payment of Representative Fees and Costs as Incurred by Each Party
- Payment of Documentary Stamps, Recording Costs by Buyer
- Payment of Title Search and Policy by Buyer
- Construction Work in Progress Payment to Seller of Actual Costs

DRAFT

APPENDIX B

TEGA CAY WATER SERVICES INSPECTION MEMO

November 13, 2013

Gerry C. Hartman drove the old parts of the Tega Cay service area to ascertain apparent viability of customer base and to generally review area.

November 14, 2013

At 9:00 am, Richard Durham and Mike Davis of Utilities, Inc. ("UI") met with Joel Wood, PE and Joe McGougan, PE of City of Tega Cay ("City") and Gerry Hartman, PE, BSCE, ASA as the appraiser. At that time, some discussion of the five (5) types of improvements constituting the inflow/infiltration ("I/I") reduction program of UI was delineated as follows:

1. Replacements,
2. Relining,
3. Spot repairs,
4. Manhole inserts (approximately 260 to date), and
5. Other items (including fixing lids, drainage correction, curbs, etc.).

Next we went to the UI field office and discussed the service area and reviewed maps of both the water and wastewater systems. UI has fully converted the previous well supply to bulk master metered water supply from York County. The wells are not in service and not expected to be put back into service. No changes have occurred in the service area size. Few new customers have been connected. Generally, the City and Lake Wylie surround the service area. The area is the oldest part of the City. Previously, the developer went bankrupt and through that process, UI acquired the water and wastewater system ("Utility"). Generally, there is a higher than normal maintenance and operational effort due to the configuration of the Utility and the location of the existing wastewater pumping stations.

Next we reviewed WWTP #4 which is off-line and serves in a back-up capacity to WWTP #3. WWTP #4 is on the side of a hill with the influent structure at the high point having some anoxic/flow dampening in that 16' to 18' deep structure. The #4 plant is a

municipal grade poured concrete 250,000 gpd extended aeration plant. The aeration chambers have clarifier channels inside the basin. There is a dechlorination pond down gradient of the plant. Flow appears to be moved slowly by gravity. WWTP #4 constitutes assets held for future use and MCD #05 USEPA assets for WWTP #3.

WWTP #3 is down the hill and a short distance across a portion of the golf course from WWTP #4. WWTP #3 is in service. There is no separate flow equalization tank. There is an oversized 1st anoxic tank. The plant has two (2) 75 hp Hoffman blowers. It has a 125 kW generator set. It has a separate container sludge thickening unit. It is a typical ring steel Davco pre-engineered type of WWTP.

Due to the historic I/I problems in the tributary wastewater collection system flowing to WWTP #3, either a better diversion system to WWTP #4 or a new flow equalization tank must be considered.

WWTP #3 is a 320,000 gpd MLE WWTP. Identification occurs in the process. Sodium Aluminate is added to precipitate and remove phosphorous. All UI WWTPs have discharge permits to the lake. They have requirements for both TN and TP removal/limitations. Moreover, the toxicity criteria drove the installation of ultra-violet (“UV”) disinfection (Trojan 3000 units). Structurally, WWTPs #3 and #4 visually appear to be in good condition.

Next we went to WWTP #2. This plant is a mirror image to WWTP #3 with the caveat that it is only 290,000 gpd. The interior walls were being redone at the time. The corrective improvements are substantial in nature. WWTPs #2 and #3 had the same work at a cost of \$80,000 each or a total \$160,000.

The two (2) active and one off-line WWTPs each have their own NPDES permit. There is no WWTP #1.

The City representatives left the inspection at this point after about 1.5 to 2.0 hours in the field.

Lift Station (“LS”) #14 is at WWTP #2 and is in good condition, LS #15 is at WWTP #3 and is in good condition, and LS #20 is at WWTP #4 and is in good condition.

There appears to be more excess land (development lots) around WWTP #2.

LS #2 has been recently upgraded and rehabbed. It is a submersible station with a new auxiliary power plug. There are three (3) mobile generators, all of which work. They are 54 kW, 45 kW, and 40kW, respectively.

LS #3 is also in very good condition. It has been fully upgraded with new pumps, new panel, rehabbed manhole, wet well, and valve vault. Similar to LS #2.

LS #4 is a dry pit station and has been recently reworked.

UI bought the Utility in 1991. The Tega Cay community has a Citizens Advisory Group which is quite active. The City has a contract with Rock Hill for bulk wastewater treatment. The City has both water supply connections to Rock Hill and with the county (York) and thereby gets a better (lower) wholesale water rate than UI.

LS #5 is an old Smith & Loveless package unit which services a few homes along the lake. LS #6 is that same as #5 and is an old unit with difficult access near the lake.

LS #1 has a new internet service with RTU's provided by Mission Communications. This station has had some recent work.

All of the pumps in this system have a renewal and/or replacement schedule. While the WWTPs #2 and #3 and most of the pump stations (some 13 of 20) and the water tower were built in the 1970 to early-1970's, the equipment has more recent vintages.

Three (3) of the 20 LS were built in the 1990's and four (4) built/replaced in the 2011-12 time period.

LS #13 is located in a recess on the lower portion of a hill. It appears significant drainage/rainwater flows to the top of the pump station cover. The cover is bad. The station needs drainage improvements and inflow protection. This is an older small station.

LS #16 is a submersible station in good operating condition.

LS #19 is a submersible station with a long access, poor access, no bypass and difficult emergency operations (difficult to get mobile generator service set up quickly).

UI has put in some 260 manhole inserts, they have not sealed/secured manhole lids from hydrostatic pressure which is a product of the drop in elevation from the homes to the lower lake front gravity transmission. This hydraulic condition is exasperated during high rainfall events.

LS #18 is another submersible station with poor access, standard features. This one has a bypass flange. Very difficult to provide emergency power quickly with loss of power.

LS #17 is another submersible station with poor access, yet in good condition.

LS #10 has two (2) 2 hp Hydromatic pumps and has good access.

LS #11 has tough or poor access, is an old Smith & Loveless package unit with submersibles. It also has the radio communications and alarm.

LS # 12 is on the golf course accessed from the cart path and fairway. It is a Smith & Loveless Can?-Dry pit. It is an old station. It has an auxiliary power plug and a mobile generator has access. DHEC recently inspected the station.

LS #9 is ok, yet old. It has poor access.

LS #8 also has poor access and is an old Smith & Loveless submersible.

In 2011, DHEC got a consent order due to WWTP spills and high total phosphorous in the effluent. Plant upgrades have been made, yet no additional flow equalization has been built except for the oversized initial anoxic zones.

Historically, there were spills in 2012 and January, April and May and then again in December of 2013. UI hired W.K. Dickson to perform/prepare a targeted predictive

maintenance model. This model has been prepared and is in use as part of the on-going management tools for the system. The approaches delineated by UI included:

1. Building flow equalization tanks, one each at WWTP #2 and #3, and continued collection system improvements,
2. Become a wholesale customer to Rock Hill,
3. Line all of the clay pipe (VCP) in the system, and
4. Replace all of the VCP in the system.

Since the I/I comes also from customer services and inflow into the pump stations, without analysis, probably option #1 is expected to be the most effective for compliance.

A report from UI is expected January 28, 2014 or after the completion of the appraisal analysis. Nonetheless, for appraisal purposes, we are adjusting the findings of each approach by \$950,000 as a market deficiency consideration.

We estimate that some 100,000 gpd AADF is from I/I. All systems have I/I and some I/I is expected. We also were told that approximately \$1.0M of pipe repairs, lining (7,000 LF), and replacements (collection and services) have been done or would be completed by December 31, 2013 (1/2011 – 12/31/2013 or three (3) year period).

The 250,000 gallon elevated storage tank was originally built in 1971 and was repaired, cleaned, and painted approximately four to five years ago. UI has a contract for annual touch-ups which were evident at the time of the inspection. The tank is 100 feet tall and has had county instrumentation/RTU into assist the County in supplying adequate pressure to the water system. The master meter is in good shape and was inspected.

Back at WWTP #4, we discussed the rolling stock, inventory, and consumables on hand and the average level of the same. Those assets were to be detailed and sent to GAI. We discussed mapping to be sent to GAI. We discussed the local operations staff and the possible segregation of costs. Since the City has no WWTPs, such operations with the knowledge of the MLE process would need to be hired by the City.

November 15, 2013

Meeting at City Hall.

Attendees:

Mr. Joel Wood, PE, City Engineer, City of Tega Cay

Mr. Bob Baitkin, Finance Director, City of Tega Cay

Mr. Tyler Traudt, Financial Advisor, Davenport ...

Mrs. Susan Driscoll, Esq, firm

Mr. Jim Sheedy, Esq, firm

Mr. Gerald C. Hartman, PE, BCEE, ASA, Appraiser

Jim stated that the City was considering this transaction from a financial feasibility stand point as in the City's hands as a bank qualified 20-year loan, not a revenue bond issue.

Typical terms and conditions are to be assumed. Simple transfer APA agreement without special conditions. Standard exhibits. Both sides pay respective fees and costs. Cash at closing.

None of the following:

Prepaid service connections

Agreements assumed unless beneficial to City

Hydrant rental fees to be collected

Agreement is to have the acquisition of the real property as fee simple. The real property interests/easements are as-is where is and acknowledged that there may be title problems. All permits will be transferred and the facilities will become Publically Owned Treatment Works or POTWs. The agreement may include or exclude the eight (8) well parcels and that decision has not been made.

November 15, 2014

Second drive through service area, checking back on facilities and area in general. Left Tega Cay November 15, 2014.

DRAFT

APPENDIX C



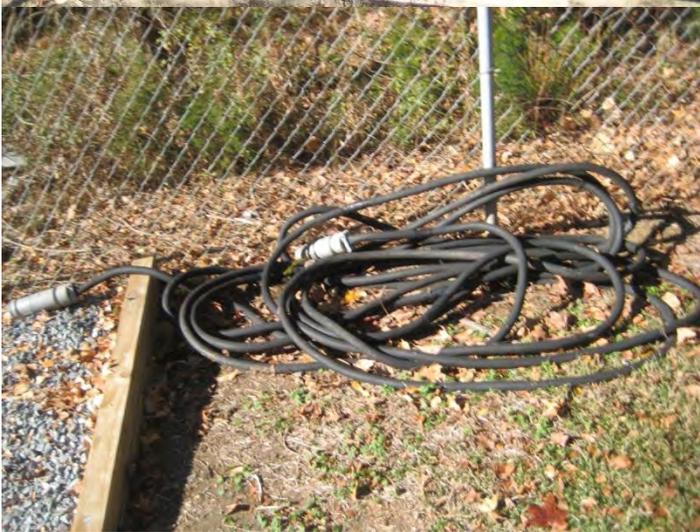


DRAFT





































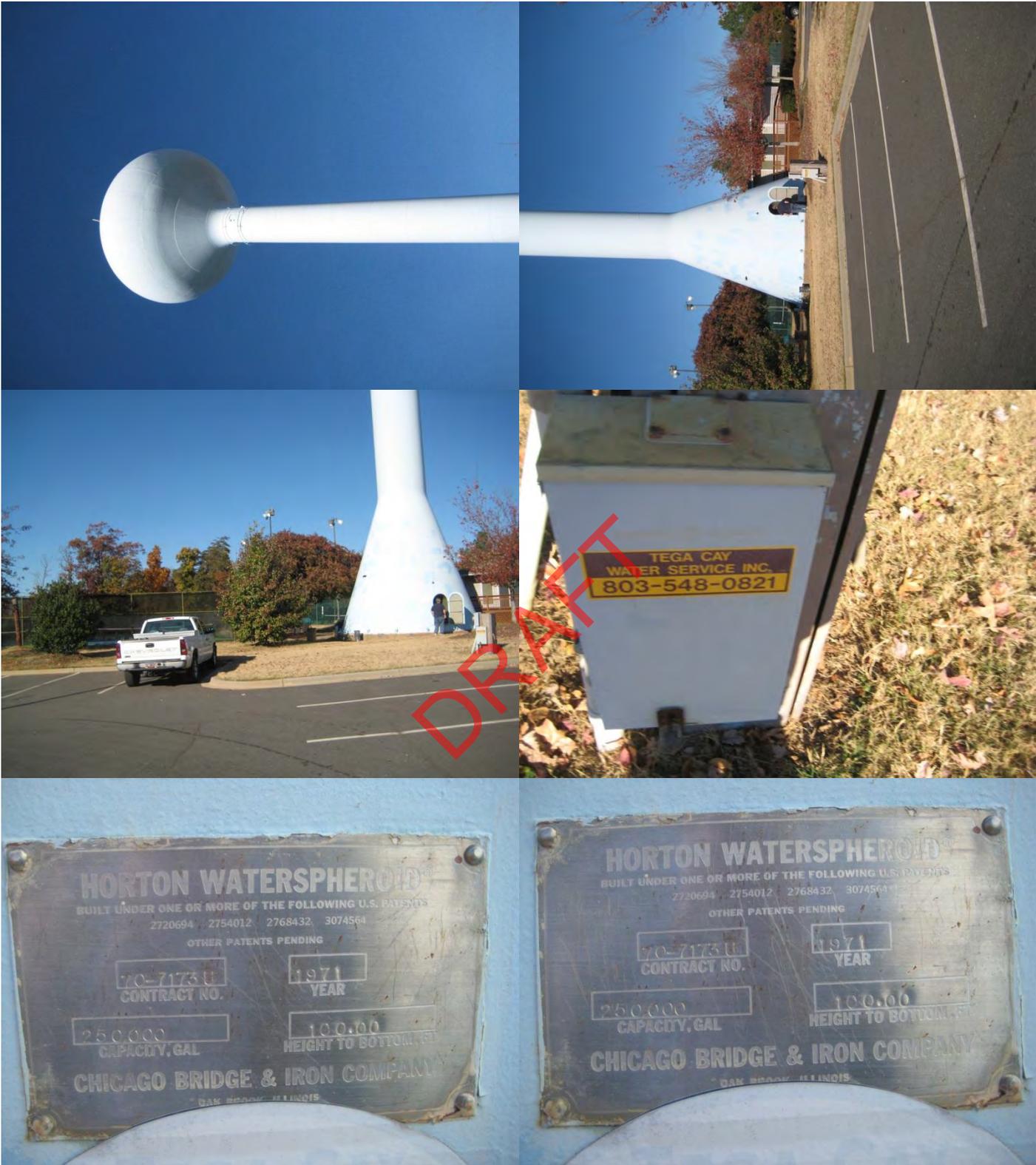


















DRAFT

DRAFT

APPENDIX D

BOARD:
Paul C. Aughtery, III
Chairman
Edwin H. Cooper, III
Vice Chairman
Steven G. Kiser
Secretary



C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment

BOARD:
Henry C. Scott
M. David Mitchell, MD
Glenn A. McCall
Coleman F. Buckhouse, MD

April 15, 2011

Mr. Patrick Flynn, Regional Director
Tega Cay Water Service Inc.
200 Weathersfield Ave
Altamonte Springs, FL 32714-4027

RE: Tega Cay Water Service/Tega Cay WWTP #2 (Permit #SC0026743)
Tega Cay Water Service/Tega Cay WWTP #3 & #4 (Permit #SC0026751)
York County, SC

Dear Mr. Flynn:

Refer to the previous correspondence from SCDHEC on September 14, 2010, concerning the Department Decision on Permit. Per our legal office, the Catawba Riverkeeper Foundation, Inc. has withdrawn the appeal. As such, the above-referenced permit is being placed into effect. The effective date of the permit reissue has been changed from November 1, 2010, to May 1, 2011 to reflect the time from the original issue date.

Enclosed is a new cover page. Discharge Monitoring Report's (DMR's) will be sent in about a week. Should you have questions, you may contact me at 803-898-4231.

Sincerely,

Deborah F. Mack
NPDES Administration

Enclosures

C: EPA Region IV (w/attachment)
Region 3 – Lancaster EQC Office
Jaime Teraoka, BOW Enforcement
Lancaster EQC Lab
Mike Montebello
Weijia Hu

Attachment (Cover Pages)

Surface Water Discharge Permit

In Accordance With the
National Pollutant Discharge Elimination System (NPDES)

This NPDES Permit Certifies That

TEGA CAY WATER SERVICE, INC.
Tega Cay WWTP #2

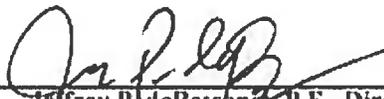
has been granted permission to discharge treated wastewater from a facility located at

*on Lake Wylie approximately 0.4 miles west of Secondary Road #99 and
1 mile north of the intersection of secondary road #30 and #196 in
York County*

to receiving waters named

main channel of Lake Wylie

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, III, IV and V hereof. This permit is issued in accordance with the provisions of the Pollution Control Act of South Carolina (S.C. Code Sections 48-1-10 et seq., 1976), Regulation 61-9 and with the provisions of the Federal Clean Water Act (PL 92-500), as amended, 33 U.S.C. 1251 et seq., the "Act."



Jeffrey P. deBessond, P.E., Director
Water Facilities Permitting Division
Bureau of Water

Issued: September 14, 2010

Expires: October 31, 2015

Effective: May 1, 2011

Permit No.: SC0026743

Surface Water Discharge Permit

In Accordance With the
National Pollutant Discharge Elimination System (NPDES)

This NPDES Permit Certifies That

TEGA CAY WATER SERVICE, INC.
Tega Cay WWTP #3 & #4

has been granted permission to discharge treated wastewater from a facility located at

*on Lake Wylie with a submerged outfall structure, approximately
1-1/2 miles north of Secondary Road #195 and 750 feet west
of the existing marina in York County*

to receiving waters named

main channel of Lake Wylie

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, III, IV and V hereof. This permit is issued in accordance with the provisions of the Pollution Control Act of South Carolina (S.C. Code Sections 48-1-10 et seq., 1976), Regulation 61-9 and with the provisions of the Federal Clean Water Act (PL 92-500), as amended, 33 U.S.C. 1251 et seq., the "Act."


Jeffrey P. deBessonnet, P.E., Director
Water Facilities Permitting Division
Bureau of Water

Issued: September 14, 2010

Expires: October 31, 2015

Effective: May 1, 2011

Permit No.: SC0026751



BOARD:
Paul C. Aughton, III
Chairman
Edwin H. Cooper, III
Vice Chairman
Steven G. Kiser
Secretary



C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment

BOARD:
Henry C. Scott
M. David Mitchell, MD
Glenn A. McCall
Coleman F. Buckhouse, MD

May 20, 2011

Mr. Patrick Flynn, Regional Director
Tega Cay Water Service Inc.
200 Weathersfield Ave
Altamonte Springs, FL 32714-4027

RECEIVED
MAY 26 2011

RE: Tega Cay Water Service/Tega Cay WWTP #2 (Permit #SC0026743)
Tega Cay Water Service/Tega Cay WWTP #3 & #4 (Permit #SC0026751)
York County, SC

Dear Mr. Flynn:

This is in response to your letter dated May 3, 2011. Since UV disinfection is used at this facility, TRC limits are applicable only if chlorine or chlorine-based disinfection is utilized.

Attached please find modified permit pages for the above referenced facilities. With these changes, we will place the permit modification on public notice in the near future.

Should you have questions, please contact Weijia Hu of my staff at 803-898-42561.

Sincerely,

Michael J. Montebello, Manager
Domestic Wastewater Permitting Section
Water Facilities Permitting Division

cc: Joe Fairs, Region 3 – Lancaster EQC Office (w/a)
Jeffrey deBessonnet, DHEC
Anne McGovern, SCDHEC (w/a)
Weijia Hu, SCDHEC (w/original attachment)

Attachment: Revised Permit pages (SC0026743 & SC0026751)

Modification Date: _____
 Signature: _____

Part III. Limitations and Monitoring Requirements

A. Effluent Limitations and Monitoring Requirements

1. Final Limits During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from outfall serial number 001. Such discharge shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS		
	Pounds per Day		Daily Maximum	Other Units		Measurement Frequency	Sample Type	Sample Point	
	Monthly Average	Monthly Average		Daily Maximum					
Flow				MR MGD	MR MGD	Daily	Cont.	Eff.	
BOD ₅	80	30 mg/l	160	60 mg/l	60 mg/l	2/Month	24 Hr C	Eff.	
TSS	80	30 mg/l	160	60 mg/l	60 mg/l	2/Month	24 Hr C	Eff.	
NH ₃ -N (Mar-Oct)	41	15.3 mg/l	82	30.6 mg/l	30.6 mg/l	2/Month	24 Hr C	Eff.	
NH ₃ -N (Nov-Feb)	MR	MR mg/l	MR	MR mg/l	MR mg/l	2/Month	24 Hr C	Eff.	
Fecal Coliform		200/100 ml		400/100 ml	400/100 ml	2/Month	Grab	Eff.	
TRC*	0.30*	0.111 mg/l*	0.51*	0.192 mg/l*	0.192 mg/l*	2/Month	Grab	Eff.	
Copper, Total	MR	MR mg/l	MR	MR mg/l	MR mg/l	1/Quarter	24 Hr C	Eff.	
DO		2.0 mg/l Minimum at all times		6.0 - 8.5 Standard Units	2.0 mg/l Minimum at all times	Daily	Grab	Eff.	
pH		6.0 - 8.5 Standard Units			6.0 - 8.5 Standard Units	Daily	Grab	Eff.	
Total Phosphorus	0.987	0.43 mg/l	MR	MR mg/l	MR mg/l	1/Month	24 Hr C	Eff.	

Following limits are based on the average design flow of: 0.32 MGD

* Since UV disinfection is used at this facility, TRC limits are applicable only if chlorine or chlorine-based disinfection is utilized. Report zero (0) for both mass and concentration otherwise.

Signature: _____

Part III. Limitations and Monitoring Requirements

A. Effluent Limitations and Monitoring Requirements

- Final Limits** During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from outfall serial number 001. Such discharge shall be limited and monitored by the permittee as specified below:

Following limits are based on the average design flow of: 0.29 MGD

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS			
	Pounds per Day		Other Units		Measurement Frequency	Sample Type	Sample Point	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum				
Flow			MR MGD	MR MGD	Daily	Cont.	Eff.	
BOD ₅	73	146	30 mg/l	60 mg/l	2/Month	24 Hr C	Eff.	
TSS	73	146	30 mg/l	60 mg/l	2/Month	24 Hr C	Eff.	
NH ₃ -N (Mar-Oct)	39	78	16 mg/l	32 mg/l	2/Month	24 Hr C	Eff.	
NH ₃ -N (Nov-Feb)	MR	MR	MR mg/l	MR mg/l	2/Month	24 Hr C	Eff.	
Fecal Coliform			200/100 ml	400/100 ml	2/Month	Grab	Eff.	
TRC*	0.28*	0.49*	0.117 mg/l*	0.202 mg/l*	2/Month	Grab	Eff.	
Copper, Total	MR	MR	MR mg/l	MR mg/l	1/Quarter	24 Hr C	Eff.	
DO			2.0 mg/l Minimum at all times		Daily	Grab	Eff.	
pH			6.0 - 8.5 Standard Units		Daily	Grab	Eff.	
Total Phosphorus	0.943	MR	0.45 mg/l	MR mg/l	1/Month	24 Hr C	Eff.	

* Since UV disinfection is used at this facility, TRC limits are applicable only if chlorine or chlorine-based disinfection is utilized. Report zero (0) for both mass and concentration otherwise.

DRAFT

APPENDIX E



TEGA CAY WATER SERVICE

September 27, 2013

The Honorable Governor Nikki Haley
Office of the Governor
1205 Pendleton Street
Columbia, South Carolina 29201

Dear Governor Haley,

I recently learned of the Tega Cay City Council's letter to you dated September 20, 2013, regarding sanitary sewer overflows ("SSOs") experienced by Tega Cay Water Service, Inc. ("TCWS"), a subsidiary of Utilities, Inc. ("UI"). TCWS and its sister companies own and manage \$75MM of assets in South Carolina that are placed in service for the benefit of the citizens of South Carolina. These assets generate 46 jobs and \$2.5MM in taxes to South Carolina. As Chief Executive Officer of UI, I am writing to provide you with additional information pertinent to the situation and hopefully clear up some misunderstandings evidenced by the City Council's letter.

At the outset, let me say that we share the frustration of Mayor Sheppard, the City Council and the citizens of Tega Cay. I think it's safe to say that all parties involved including our company, the Department of Health and Environmental Control ("DHEC"), the Office of Regulatory Staff ("ORS"), and the Public Service Commission ("PSC") are frustrated by the situation. However, TWCS has made, and continues to make, substantial efforts and expenditures of capital to end the SSOs experienced in Tega Cay.

We have spent in excess of two million dollars in just the last two years in Tega Cay, and we plan to spend more. Specifically, we have already made upgrades to our wastewater treatment plants to meet EPA limits, rebuilt numerous lift stations, performed annual maintenance in accordance with DHEC regulations, inspected more than 900 manholes, installed several hundred manhole inserts, locked manholes, and made significant upgrades to the collection system pipe. We are currently using state of the art technology released only earlier this year to identify potential blockages before they become a problem.

Some background about the TCWS sewer system is helpful to understand the complexity of the problems faced by the company and regulators today.

- The system was originally built by the community's developer over 40 years ago, not subject to today's standards. It was acquired by TCWS in 1991, following the developer's bankruptcy.

Honorable Governor Nikki Haley

September 27, 2013

Page 2

- The system is not constructed in a way that allows either inspection of, or repairs to, a significant part of it. Much of the system is situated below or near buildings and trees, instead of in right-of-ways as would be the case with a system built in more recent years. A sewer system would never be allowed to be constructed in this manner today, for the reasons we are all experiencing.
- A large part of the system is constructed of clay pipe, which is ordinarily a quality material that can withstand aging. However, the joints that exist every four feet in the 50 miles of the system's pipe network create openings for the roots of thirsty trees trying to find a water source forming obstacles for grease and debris. For example, the most recent blockage in the system was caused by only six months' growth of tree roots.
- While we do not mean to suggest in any way that the recent level of SSOs is acceptable, context is important to understand the spills referred to in the City Council's letter. Approximately 75% of the SSOs cited by the City Council would not have been ordinarily reportable to DHEC (some were as small as ¼ gallon). However, TCWS agreed to provide this information to DHEC by consent as part of the company's commitment to transparency as we work through solutions.

The unavoidable fact is that the TCWS system will require ongoing attention in perpetuity. Interconnection with the City of Rock Hill for wastewater treatment will not solve the collection system problems caused by poor initial design, clay pipes and root intrusion. Total replacement of this system is virtually impossible and it would be cost prohibitive for customers, in any event. The assertion that we are sitting on profits and doing nothing is simply false. TCWS reinvests all of its funds into the system, and UI has been investing additional capital (more than generated by rates) to resolve the problems with the system.

State regulatory agencies have also not failed the citizens of South Carolina, as claimed by the City Council. To the contrary, we have been working cooperatively with DHEC, the PSC, and the ORS to address the situation. We have recently created an Advisory Council and invited interested parties and government entities, such as DHEC and ORS, to work with us as we address the problems in Tega Cay. Regrettably, the City of Tega Cay has declined to participate or encourage its citizens to be involved.

I must take issue with the Town Council's suggestion that we do not take notification of SSOs seriously. Safety is our absolute Number One priority. We want to do more to notify customers affected by SSOs, and we are working cooperatively with state agencies to identify additional and appropriate means of notification. In the specific event referred to by the Town Council, we posted "No Swimming" signs on the lake and TCWS employees were on-site and personally asked people to leave the water.

The sewer system in Tega Cay presents challenges that originated years ago. These problems are not unique to Tega Cay. The American Society of Civil Engineers and the United States Environmental Protection Agency estimate that over \$1 trillion in water and wastewater infrastructure investment will be required in the next 20 years to address issues exactly like these. Solutions do not come quickly, easily, or inexpensively to customers. We believe working collaboratively is the only path to solutions that work.

Honorable Governor Nikki Haley
September 27, 2013
Page 3

Again, we are not satisfied with the current situation and we are frustrated that the substantial efforts we have made so far have not yielded better results. However, based on the feedback of the experts involved, we are confident that we are taking the appropriate measures in a responsible manner to solve the issues. And we are 100% committed to bringing this system to a better level of performance.

We would welcome any further discussion you would like to have on this matter. Please do not hesitate to contact me at the address and telephone number above, or UI's Regional Vice-President, Rick Durham at (321) 972-0358 or by email at rjdurham@uiwater.com.

Sincerely,



Lisa Sparrow
President and CEO
Utilities, Inc.

cc: The Hon. G. O'Neal Hamilton (PSC)
C. Dukes Scott, Esquire (ORS)
Catherine Templeton, Esquire (DHEC)
Mr. David Wilson (DHEC)

DRAFT

DRAFT

APPENDIX F

Project	TC COLLECTION SYSTEM IMPRVMENTS	Cost
	Cured - in - place- pipe installation, over 7,000 LF	525,299.59
	High pressure jet cleaning of gravity mains and laterals throughout collection system / Video inspections of thousands of linear feet of sewer main using four crews / Installation of mechanical liner sections (Quick Locks) at 39 locations / Use of multiple vacuum trucks to remove debris from collection system at various locations	228,798.52
	Mobilized SWAT team comprised of 22 UI employees drawn from 5 states to canvas the plant 2 and much of plant 3 collection system	117,946.52
	Smoke testing of gravity mains, primarily Plant 2 and a portion of Plant 3 drainage basin / Dye testing of gravity mains in select locations / Data management and uploading data to GIS mapping site / Engineering support used throughout for analysis of collection system, flow data, mapping	80,921.43
	Materials	30,304.26
	Installation of 263 manhole inserts to intercept and divert runoff from entering system through manhole lids / Installed locking MH lids in select locations / Reset numerous MH rings and covers to prevent inflow and rain-induced infiltration / Installed MH risers to elevate MH rims to finished grade, 44 locations / Found and corrected illegal storm water diversion to sewer system, MH A-23, Heron Run	23,483.59
	Flow monitoring using four portable flow meters , internet data dump and analysis	15,300.00
	Inspected and improved laterals and service lines / Open cut and replaced sections of sewer pipe / Found and corrected indirect cross connection between golf course storm water pipe and gravity main	6,928.02
	Travel / misc	36,589.32
	Total project costs	<u>1,065,571.25</u>
Project	Install UV disinfection WWTP 2	Cost
	Purchase, delivery and installation of UV equipment	\$46,304.80
	Bypass pump rental	\$2,763.04
	Engineering design and permitting	\$2,695.05
	Material	\$705.19
	Internal Resource	\$22,857.68
	Total project costs	<u>\$75,325.76</u>
Project	Install UV disinfection WWTP 3	Cost
	Purchase, delivery and installation of UV equipment	\$52,039.87
	Pump and haul while diverting plant flow during UV conversion	\$6,360.00
	Engineering design and permitting	\$6,261.36
	Internal Resource	\$22,102.49
	Total project costs	<u>\$86,763.72</u>
Project	Tega Cay #2 WWTP TPO4 Treatment	Cost
	Construction of plant improvements including materials	\$87,717.97
	Engineering design and permitting	\$28,278.58
	Materials	\$20,611.59
	Site work, construction of a footing	\$1,650.00
	Rental of equipment used during construction	\$429.45
	Internal Resource	\$16,489.79
	Total project costs	<u>\$155,177.38</u>
Project	Tega Cay #3 WWTP TPO4 Treatment	Cost
	Construction of plant improvements including materials	\$33,027.35
	Engineering design and permitting	\$9,990.42
	Rental of equipment used during construction	\$3,192.49
	Chemical feed pumps	\$987.95
	Materials	\$35.11
	Internal Resource	\$15,486.57
	Total project costs	<u>\$62,719.89</u>
Project	Tega Cay Bulkhead	Cost
	Pumping and Hauling	\$140,963.75
	Pumping and Hauling	\$55,232.50
	Welding and Fabrication	\$52,834.08
	Wall Installation	\$46,779.60
	Repaving the golf cart paths from the heavy vac trucks	\$12,340.00
	Spread Crush and Run on plant site and to restore roadways	\$9,181.50

Pumping and Hauling influent during diversion of plant flow	\$2,600.00
Rental of equipment used during construction	\$1,483.91
Pumping and Hauling	\$1,137.50
Welding and Fabrication	\$1,000.00
Crush & Run	\$826.34
Internal Resource	\$25,294.73
Total project costs	<u>\$349,673.91</u>

Project	TEGA CAY C.A.P. COLLECTION STM	Cost
	Manhole rehabilitations	\$27,486.00
	Fabrication of Lift station lids	\$3,300.00
	Man Hole Rehabilitations	\$19,845.00
	Installation of Lift Stations 2 & 3	\$145,189.10
	Pumps and controls for Lift Stations 14 & 15	\$75,940.69
	CCTV, jetting and root cutting throughout collection system	\$294,705.81
	Pumps and controls for Lift Stations 2 & 3	\$53,696.00
	CCTV, jetting and root cutting throughout collection system	\$110,312.50
	Replacement of 300 LF of 8" gravity sewer main	\$27,725.00
	Engineering services	\$168,739.10
	Internal Resource / misc	\$169,759.62
	Total project costs	<u>\$1,096,698.82</u>

Other Capital Investments	Cost
SEWER GRAVITY MAIN	336,483.62
PUMPING EQUIPMENT PUMP	274,657.62
TREAT/DISP EQUIP TRT PL	232,596.74
SERVICE LINES	204,205.93
TRANS & DISTR MAINS	76,038.57
SERVICES TO CUSTOMERS	46,144.86
Misc plant additions	34,662.49
Internal Resource	161,344.76
Total other costs	<u>1,366,134.59</u>

Total Tega Cay Improvement since 2009	<u>4,258,065.32</u>
--	----------------------------

DRAFT

DRAFT

APPENDIX G

MM, NT, SH



RECEIVED
OCT 28 2013

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

CERTIFIED MAIL--RETURN RECEIPT REQUESTED

91 7108 2133 3939 6233 8131

October 24, 2013

Patrick C Flynn
Tega Cay Water Service Inc
200 Weathersfield Ave
Altamonte Springs, FL 32714-4027

Re: NPDES Permit # SC0026743
Tega Cay Wwtp #2
York County

Reg: CEI (Compliance Evaluation Inspection)
September 23, 2013

Dear Mr. Flynn:

Attached are the results of the **Compliance Evaluation Inspection** of your wastewater treatment facility performed by DHEC on September 23, 2013. A review of this report indicates that deficiencies of the NPDES permit requirements were noted in the **Flow Measurement** section(s). These deficiencies were minor and did not affect the overall compliance rating of **Satisfactory** for the NPDES program.

Please note that failure to comply with the NPDES permit conditions places you in violation of Sections 48-1-90 and 48-1-110 of the Code of Laws of South Carolina. Therefore, it is requested that you respond in writing to this office within **fifteen (15) days** of receipt of this letter concerning corrective action. Failure to respond or an inadequate response will provide a basis for enforcement action.

If you have any questions regarding this inspection, please contact me at 803-898-4273 or email to baxleyla@dhec.sc.gov.

Sincerely,

Lori A Baxley
Compliance Manager
Water Pollution Compliance Section
Bureau of Water

Attachment

ec: Regional EQC
Enforcement
cc: File

19.2 Tega Cay #2



**South Carolina Department of Health and Environmental Control
Compliance Inspection Report
Permit # SC0026743**

Inspection Type: CEI

Date of Inspection: 09/23/2013

Entry Time: 1330

Exit Time: 1510

Permit Effective Date: 5/11/2011

Permit Expiration Date: 10/31/2015

Name and Location of Facility, (include county):

TEGA CAY WWTP #2
4135 Koala Circle, TEGA CAY, SC, 29715
York County

Name, Telephone No. of On-Site Representative(s):

Kenny Knopf 803-329-3405

Name and Address of Responsible Official/Telephone No.:

FLYNN, PATRICK C
TEGA CAY WATER SERVICE INC
200 Weathersfield Ave
Altamonte Springs, FL, 32714-4027
800-272-1919

DRAFT

Areas Evaluated During Inspection

Permit

Flow Measurement

Operation and Maintenance

Records/Reports

Self-Monitoring

Sludge Handling/Disposal

Facility Site Review

Compliance Schedules

Effluent/Receiving Waters

Laboratory

Collection System

Other:

Name of Inspector: Henry M White

Region/District: 03 LANCASTER EQC

Name of Region Reviewer: Renee Baker

Date: 9/25/2013

Name of WPC Reviewer: Lori Baxley

Date: 10/24/13

**Compliance Evaluation Inspection
TEGA CAY WWTP #2
TEGA CAY, SC
PERMIT SC0026743**

On September 23, 2013, personnel from the South Carolina Department of Health and Environmental Control (SCDHEC) conducted a Compliance Evaluation Inspection (CEI) at Tega Cay WWTP #2 in Tega Cay, South Carolina. Mark White, SCDHEC, met with facility representatives to explain the objectives and procedures of the inspection. All findings made were discussed with the facility representatives in a closing conference. The results of the inspection are as follows:

Permit

The facility's NPDES Permit No. SC0026743 was issued September 14, 2010 and expires October 31, 2015. Information regarding wastewater source, receiving stream, and number and location of discharges was reviewed and verified with existing conditions at the facility. All discharges are permitted.

Rating: Satisfactory

Compliance Schedule, Administrative Order, Consent Order

The facility is currently under consent order 11-004-W effective February 16, 2011. The permittee is currently meeting the requirements of the consent order.

Rating: Satisfactory

Records and Reports

The permittee's record keeping and reporting procedures are in compliance with the NPDES permit. Analytical results were consistent with data on the April 2013 and August 2011 DMR's. The sampling and analytical data properly documents the date, time, collector, location of sampling, and the date, time and person performing analyses. All calculations are being performed correctly. All records are maintained for the required time period. An O & M manual, BMP and Odor Abatement Plan dated September 2013 was available for review.

Rating: Satisfactory

**Compliance Evaluation Inspection
TEGA CAY WWTP #2
TEGA CAY, SC
PERMIT SC0026743**

Flow Measurement

The facility utilizes an ISCO 4210 Ultrasonic flow meter, which is calibrated yearly, most recently on March 27, 2013. The facility has not been conducting routine calibrations regularly. The facility has a 60-degree V-notch weir that is properly installed and maintained.

Rating: Marginal

Requirement: Routine calibrations need to be conducted weekly to ensure continuous flow measurement accuracy. Part II.J.1.b of the NPDES permit in Monitoring and Recording under Flow Measurement states:

"Where primary flow meters are required, appropriate flow measurement devices and methods consistent with accepted scientific practices shall be present and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of not greater than 10 percent from the true discharge rates throughout the range of expected discharge volumes. The primary flow device, where required, must be accessible to the use of a continuous flow recorder."

Self-Monitoring Program

The permittee's self-monitoring was in compliance with the NPDES permit. All samples are collected according to the permit and at the proper locations. Effluent samples are collected over a 24-hour period proportional to effluent flow at a rate of one (150 ML) a sample. All samples are collected in a manner consistent with permit requirements.

Rating: Satisfactory

Facility Site Review, CSO/SSO

The facility is a 0.32 MGD extended aeration wastewater treatment facility with an average flow of 0.17 MGD. Pretreatment consists of a mechanical bar screen. After pretreatment, the wastewater passes through an extended aeration basin. It then passes through an anoxic basin for phosphorus removal and is returned to the aeration chamber. The wastewater is then treated in a clarifier with sludge being wasted to an aerobic digester. Disinfection occurs through a system of UV boxes before the effluent is discharged into Lake Wylie. The facility is being maintained by an operator of the appropriate grade. The facility grounds and access roads are being maintained.

Rating: Satisfactory

**Compliance Evaluation Inspection
TEGA CAY WWTP #2
TEGA CAY, SC
PERMIT SC0026743**

Operations and Maintenance

At the time of the inspection, the facility appeared to be operating satisfactory. The effluent was clear with no solids.

Rating: Satisfactory

Sludge Handling/Disposal

Sludge disposal begins by wasting sludge to an aerobic digester. The digested sludge is then pumped into a dewatering box. L&L Environmental handles sludge disposal. The approval runs concurrently with the duration of the permit.

Rating: Satisfactory

DRAFT

MM, NT, SH



Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

CERTIFIED MAIL--RETURN RECEIPT REQUESTED

91 7108 2133 3939 6233 8124

RECEIVED
OCT 28 2013

October 24, 2013

Patrick C Flynn
Tega Cay Water Service Inc
200 Weathersfield Ave
Altamonte Springs, FL 32714-4027

Re: NPDES Permit # SC0026751
Tega Cay Wwtp #3 & #4
York County

Reg: CEI (Compliance Evaluation Inspection)
September 23, 2013

Dear Mr. Flynn:

Attached are the results of the **Compliance Evaluation Inspection** of your wastewater treatment facility performed by DHEC on September 23, 2013. A review of this report indicates that deficiencies of the NPDES permit requirements were noted in the **Flow Measurement** section(s). These deficiencies were minor and did not affect the overall compliance rating of **Satisfactory** for the NPDES program.

Please note that failure to comply with the NPDES permit conditions places you in violation of Sections 48-1-90 and 48-1-110 of the Code of Laws of South Carolina. Therefore, it is requested that you respond in writing to this office within **fifteen (15) days** of receipt of this letter concerning corrective action. Failure to respond or an inadequate response will provide a basis for enforcement action.

If you have any questions regarding this inspection, please contact me at 803-898-4273 or email to baxleyla@dhec.sc.gov.

Sincerely,

Lori A Baxley
Compliance Manager
Water Pollution Compliance Section
Bureau of Water

Attachment

cc: Regional EQC
Enforcement
cc: File

19, 2 Tega Cay 3+4



**South Carolina Department of Health and Environmental Control
Compliance Inspection Report
Permit # SC0026751**

Inspection Type: CEI

Date of Inspection: 09/23/2013

Entry Time: 1330

Exit Time: 1510

Permit Effective Date: 5/1/2011

Permit Expiration Date: 10/31/2015

Name and Location of Facility, (include county):

TEGA CAY WWTP #3 & #4
9082 Windjammer Dr., TEGA CAY, SC, 29715
York County

Name, Telephone No. of On-Site Representative(s):

Kenny Knopf 803-329-3405

Name and Address of Responsible Official/Telephone No.:

FLYNN, PATRICK C
TEGA CAY WATER SERVICE INC
200 Weathersfield Ave
Altamonte Springs, FL, 32714-4027
800-272-1919

DRAFT

Areas Evaluated During Inspection

- | | | |
|--|--|---|
| Permit <input checked="" type="checkbox"/> | Flow Measurement <input checked="" type="checkbox"/> | Operation and Maintenance <input checked="" type="checkbox"/> |
| Records/Reports <input checked="" type="checkbox"/> | Self-Monitoring <input checked="" type="checkbox"/> | Sludge Handling/Disposal <input checked="" type="checkbox"/> |
| Facility Site Review <input checked="" type="checkbox"/> | Compliance Schedules <input checked="" type="checkbox"/> | |
| Effluent/Receiving Waters <input type="checkbox"/> | Laboratory <input type="checkbox"/> | |
| Collection System <input type="checkbox"/> | Other: <input type="checkbox"/> | |

Name of Inspector: Henry M White

Region/District: 03 LANCASTER EQC

Name of Region Reviewer: Renee Baker

Date: 9/24/2013

Name of WPC Reviewer: Lori Baxley

Date: 10/24/13

**Compliance Evaluation Inspection
TEGA CAY WWTP #3 & #4
TEGA CAY, SC
PERMIT SC0026751**

On September 23, 2013, personnel from the South Carolina Department of Health and Environmental Control (SCDHEC) conducted a Compliance Evaluation Inspection (CEI) at Tega Cay WWTP #3 and #4 in Tega Cay, South Carolina. Mark White, SCDHEC, met with facility representatives to explain the objectives and procedures of the inspection. All findings made were discussed with the facility representatives in a closing conference. The results of the inspection are as follows:

Permit

The facility's NPDES Permit No. SC0026751 was issued September 14, 2010 and expires October 31, 2015. Information regarding wastewater source, receiving stream, and number and location of discharges was reviewed and verified with existing conditions at the facility. All discharges are permitted. This permit covers both Wastewater Treatment Plants # 3 and # 4; however, plant # 4 is not in operation at this time.

Rating: Satisfactory

Compliance Schedule, Administrative Order, Consent Order

The facility is currently under consent order 11-004-W effective February 16, 2011. The permittee is currently meeting the requirements of the order.

Rating: Satisfactory

Records and Reports

The permittee's record keeping and reporting procedures are in compliance with the NPDES permit. Analytical results were consistent with data on the April 2013 and August 2011 DMR's. The sampling and analytical data properly documents the date, time, collector, location of sampling, and the date, time and person performing analyses. All calculations are being performed correctly. All records are maintained for the required time period. An O & M manual, BMP and Odor Abatement Plan dated September 2013 was available for review.

Rating: Satisfactory

Flow Measurement

The facility utilizes an ISCO 3210 Ultrasonic flow meter, which is calibrated yearly, most recently on April 5, 2013. The facility has not been conducting routine calibrations regularly. The facility has a 60-degree V-notch weir that is properly installed and maintained.

Rating: Marginal

Compliance Evaluation Inspection
TEGA CAY WWTP #3 & #4
TEGA CAY, SC
PERMIT SC0026751

Requirement: Routine calibrations need to be conducted weekly to ensure continuous flow measurement accuracy. Part II.J.1.b of the NPDES permit in Monitoring and Recording under Flow Measurement states:

"Where primary flow meters are required, appropriate flow measurement devices and methods consistent with accepted scientific practices shall be present and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of not greater than 10 percent from the true discharge rates throughout the range of expected discharge volumes. The primary flow device, where required, must be accessible to the use of a continuous flow recorder."

Self-Monitoring Program

The permittee's self-monitoring was in compliance with the NPDES permit. All samples are collected according to the permit and at the proper locations. Effluent samples are collected over a 24-hour period proportional to effluent flow at a rate of one (150 ML) a sample. All samples are collected in a manner consistent with permit requirements.

Rating: Satisfactory

Facility Site Review, CSO/SSO

The facility is a 0.29 MGD extended aeration wastewater treatment facility with an average flow of 0.18 MGD. Pretreatment consists of a mechanical bar screen. After pretreatment, the wastewater passes through an extended aeration basin. It then passes through an anoxic basin for phosphorus removal and is returned to the aeration chamber. The wastewater is then treated in a clarifier with sludge being wasted to an aerobic digester. Disinfection occurs through a system of UV boxes before the effluent is discharged into Lake Wylie. The facility is being maintained by an operator of the appropriate grade. The facility grounds and access roads are being maintained.

Rating: Satisfactory

Operations and Maintenance

At the time of the inspection, the facility appeared to be operating satisfactory. The effluent was clear with no solids.

Rating: Satisfactory

**Compliance Evaluation Inspection
TEGA CAY WWTP #3 & #4
TEGA CAY, SC
PERMIT SC0026751**

Sludge Handling/Disposal

Sludge disposal begins by wasting sludge to an aerobic digester. The digested sludge is then pumped into a dewatering box. L&L Environmental handles sludge disposal. The approval runs concurrently with the duration of the permit.

Rating: Satisfactory

DRAFT

DRAFT

APPENDIX H

WATER SUPPLY AGREEMENT
Tega Cay Water Service, Inc. and York County, South Carolina

1 THIS AGREEMENT, made and entered into on
2 this 22nd day of June, 1993, by and between Tega
3 Cay Water Service, Inc., a South Carolina corporation,
4 (hereinafter referred to as "Utility") and York County, a
5 political subdivision of the State of South Carolina, acting
6 by and through its County Council, the governing body
7 thereof, (hereinafter referred to as "County").

WITNESSETH

8
9 WHEREAS, Utility is engaged in the business of
10 furnishing water service to the public in an area located in
11 York County, South Carolina, known as Tega Cay (hereinafter
12 referred to as the "Water Service Area" and more fully
13 described as the area ~~encompassed~~ by the City limits of Tega
14 Cay, South Carolina as indicated on the map entitled Tega Cay
15 Master Development Plan, dated December 23, 1980 and attached
16 hereto as Exhibit 1); and

17 WHEREAS, the Utility desires to obtain, and the County
18 desires to provide water supply service for the Utility's
19 existing and future customers within the Water Service Area,
20 subject to the terms and conditions of this Agreement.

21 NOW, THEREFORE, in consideration of the premises which
22 shall be deemed an integral part of this Agreement and of the
23 mutual covenants as hereinafter set forth the parties hereto
24 agree as follows:

1 Section 1

2 Purpose

3 It is the purpose and intent of this Agreement to
4 provide for public water service by Utility, utilizing the
5 County's water supply, to existing homes and structures and
6 future homes and structures within the Water Service Area
7 defined in Exhibit 1, and to provide for the timely payment
8 to the County of all costs incurred in the provision of water
9 to Utility by the County. All terms and conditions contained
10 herein shall be read and interpreted in a manner consistent
11 with and in furtherance of this purpose and intent.

12 Section 2

13 Water Supply Service

14 1. The County shall provide water supply service to
15 Utility under terms and conditions contained in this
16 Agreement. Such service shall be provided through County
17 water main extensions and interconnections with Utility's
18 water distribution system. County agrees to install all
19 necessary main extensions and interconnections at its sole
20 cost and expense. The County shall extend its water main to
21 the City Limit line located on Gold Hill Road. The County
22 shall install a meter vault and meter at that location.
23 Utility will extend its existing water line to connect to
24 such meter. All County and Utility construction work shall
25 meet all applicable regulatory standards. The County will
26 deliver water to Utility with adequate pressure and quantity
27 to serve existing and future Utility customers in Tega Cay.

CLS
JK

CLS
JK

1 2. The County shall use its best efforts to provide
2 the necessary water supply capacity needed by Utility to
3 service its customers within the Water Service Area.
4 Notwithstanding any other provisions contained herein, the
5 County shall not be liable for any damages as the result of
6 the inability or failure to provide water services pursuant
7 to this Agreement either on a temporary, emergency, or
8 permanent basis. Further, the County will be obligated to
9 provide to Utility water which meets or exceeds all state and
10 federal health guidelines and standards.

11 3. Utility and County agree that the following method
12 for billing Utility for water sold to Utility by County ("The
13 Billing Method") is acceptable to both parties.

14 **The Billing Method:** Utility shall make bi-
15 monthly payments to County based on the water usage
16 registered on all Utility customer's meters within the Water
17 Service Area. The County's initial charge to Utility for the
18 water so metered will be equal to the lowest County wholesale
19 water rate authorized by the York County Council for
20 similarly situated customers in York County for service
21 rendered by the County where billing is based upon retail
22 customer meter readings. The present York County wholesale
23 water rate Ordinance is attached hereto as Exhibit 2. It is
24 understood by both parties that the County is reviewing the
25 present rate established by the County in the County Rate
26 Ordinance attached hereto as Exhibit 2. The objective of
27 reviewing the rate is to determine if the wholesale water

*CLL
JK*

*DKA
CA*

1 rate can be reduced as a result of increased revenues from
2 the additional customers in Tega Cay being added to the
3 County system. The County Charge to Utility will include the
4 cost of all water provided to Utility through the County
5 master meter. Depending on the cost of construction of water
6 supply trunk lines and the County's purchased water cost,
7 there may or may not be a reduction or increase in the
8 initial County wholesale water rate.

9 4. In the event that payment is not made to County by
10 Utility within 30 days after each bi-monthly Utility customer
11 billing, Utility agrees to pay interest to the County at the
12 rate of one and one-half percent (1 1/2%) per month on the
13 outstanding delinquent amount to the County after such 30 day
14 period until said delinquent balance is paid in full.

15 5. For this Agreement only, it is agreed that the
16 initial County wholesale water rate will remain in effect for
17 a period of twelve months from the date service is initiated.
18 After the initial twelve month period, County may adjust the
19 wholesale water rate by appropriate action of the York County
20 Council.

21 6. In addition to the monthly water service usage
22 rate, Utility agrees that any future customer within the
23 Water Service Area whose lot is not contiguous to a water
24 main which has been installed as of the date of this
25 Agreement may be required to pay to the County a water
26 connection/tap fee. The County agrees that there will be no
27 County connection fee of any kind assessed to Utility or its

*CLIS
JFK*

JFK

1 customers for customers taking service from Utility the day
2 County water service is initiated. The County also agrees
3 that all lots within the Water Service Area, contiguous to
4 installed water mains on the day the County initiates water
5 service to the Water Service Area, will be allowed to receive
6 service without having to pay a County connection/tap fee.
7 Exhibit 1, attached hereto and before mentioned, contains
8 descriptions of all Utility owned water mains installed as of
9 the date of this Agreement, as well as describing the Water
10 Service Area.

11 7. Utility hereby agrees to collect County tap
12 certificates on behalf of the County as specified in Section
13 2, paragraph 6, herein, and shall remit the fees so collected
14 to the County on a monthly basis. Utility will also collect
15 its Commission-approved water connection fee from all new
16 connections in the Water Service Area. Utility agrees that it
17 will not connect any customer within the Utility's Water
18 Service Area without first determining that such customer has
19 paid(if appropriate) the County water tap fee, in accordance
20 with terms of this Agreement.

*C.L.S.
J.K.*

21 Section 3

22 Commission Authorizations

23 1. The parties acknowledge that this Agreement, The
24 Billing Method, Utility's right to charge Utility customers
25 the initial County wholesale rate, and the Utility Water
26 Distribution Charge, must be approved by the South Carolina
27 Public Service Commission (the "Commission").

DRAFT

1 necessary and sufficient water supply capacity to meet the
2 service demand requirements of the Water Service Area. The
3 County agrees not to provide water supply or service to any
4 other entity or industry within the Water Service Area.

5 Section 5

6 General Provisions

7 1. This Agreement shall be executed in two
8 counterparts, each of which will be considered an original.
9 This Agreement is binding upon the successors and assignees
10 of the parties hereto. The provisions of this Agreement
11 constitute the entire terms and provisions of this Agreement
12 between the parties hereto, and no amendment or alteration
13 shall be binding unless the party affected thereby shall have
14 executed a written instrument amending the Agreement.
15 Whenever one party gives notice to the other party concerning
16 any of the provisions of this Agreement, such notice shall be
17 given by certified mail, return receipt required. Said notice
18 shall be deemed given when it is deposited in the United
19 States mail with sufficient postage prepaid (notwithstanding
20 that the return receipt is not subsequently received).

CLB
JK

DWR
12

1 Notices shall be addressed as follows:

2 YORK COUNTY

York County Manager

3 P.O. Box 66

4 York, S.C. 29745

5
6 TEGA CAY WATER SERVICE, INC.

2335 Sanders Road

7 Northbrook, Il. 60062

8 Attn: Perry B. Owens,

9 Chairman & C.E.O.

10 These addresses may be changed by giving notice as
11 provided for in this paragraph.

12 2. No waiver of breach of any of the terms of this
13 Agreement shall be construed to be a waiver of any succeeding
14 breach.

15 3. Utility hereby indemnifies County from any liability
16 arising out of the distribution and sale of the County
17 supplied water through Utility's mains throughout the Water
18 Service Area, provided that County furnishes potable water to
19 the Utility, which meets all regulatory standards.

20 Section 6

21 Default

22 If either party materially fails or defaults in keeping,
23 performing, or abiding by the terms and provisions of this
24 Agreement, then the non-defaulting party shall give written
25 notice to the defaulting party specifying the nature of the
26 default. If the defaulting party does not cure the default
27 within thirty (30) days after the date of written notice,

1 then this Agreement, at the option of the non-defaulting
2 party, shall terminate. Neither party shall be relieved of
3 liability to the other for damages sustained by virtue of any
4 party wrongfully exercising this provision. This paragraph is
5 not intended to replace any other legal or equitable remedies
6 available to any non-defaulting party under South Carolina
7 law, but it is in addition thereto. Notwithstanding the
8 foregoing, any failure to make timely payments shall be
9 considered a material default under the terms of this
10 Agreement without the necessity for any written notice to
11 Utility.

12 Section 7

13 Term

14 This Agreement shall have a term of twenty (20) years
15 commencing on the date of execution of this Agreement. This
16 Agreement shall not be considered an obligation on the part
17 of the County to perform in any way other than as indicated
18 in this Agreement. The County shall not be obligated under
19 the terms of this Agreement to supply additional water for
20 Utility to areas outside the Water Service Area, unless the
21 County issues written notification that it does not object to
22 such additional service.

C. L. J. J.

23 Section 8

24 Force Majeure

25 1. If, by reason of force majeure, either party hereto
26 shall be rendered unable, in whole or in part, to carry out
27 its obligations under this Agreement, then, and in that

DA

1 event, said party shall give notice in writing, to the other
2 party, within a reasonable time thereafter, giving the full
3 particulars of such force majeure.

4 The obligations of the party so affected shall thereupon
5 be suspended and such suspension shall continue during the
6 period in which such inability continues; provided, however,
7 that the disabled party shall endeavor with all reasonable
8 dispatch, to remove or overcome such inability. Provided
9 further, however, that this Section 8 shall not apply to
10 failures by County or Utility to make payments or credits for
11 services rendered as specified under Section 2 entitled "
12 Water Supply Service."

13 2. The term "force majeure" as employed herein shall
14 mean acts of God, strikes, lockouts or other industrial
15 disturbances, acts of the public enemy, orders of Commission
16 and courts of this State, orders of any kind of the
17 government of the United States of the State of South
18 Carolina, or any military authority, insurrection, riots,
19 epidemics, landslides, earthquakes, fires storms, hurricanes,
20 floods, wash-outs, droughts, arrests and restraints of
21 government and people, civil disturbances, explosions,
22 breakage or damage to machinery, canals, tunnels, or
23 pipelines, partial or entire failure of water system, and
24 inability of County to furnish water hereunder or Utility to
25 receive water hereunder for any reason or cause not
26 reasonably within the control of the party claiming such
27 inability.

CLS
JK

1 Section 9

2 Miscellaneous Provisions

3 1. The parties hereto agree that from and after the
4 date of execution hereof, each will, upon the request of the
5 other, execute and deliver such other documents and
6 instruments and take other actions as may be reasonably
7 required to carry out the intent of this Agreement.

8 2. This Agreement shall be binding upon the heirs,
9 representatives and assigns of the parties hereto and the
10 provisions hereof shall constitute covenants running with the
11 land for the benefit of the heirs, representatives and
12 assigns of the party.

13 IN WITNESS WHEREOF, the parties hereto have hereunto set
14 their hands and seals the date first above written.

CLG
JK

DRAFT

15
16
17
18 Attest:

[Signature]

YORK COUNTY

By

[Signature]

COUNTY COUNCIL CHAIRMAN

19
20
21
22 Attest:

[Signature]

TEGA CAY WATER SERVICE, INC.

BY

[Signature]

VP

[Circular Stamp]

DRAFT

APPENDIX I

I. WATER

1. CHARGE FOR WATER DISTRIBUTION ONLY

Where water is purchased from a government body or agency or other entity for distribution by the Company, the following rates apply:

Residential

Basic Facilities Charge per single family house, condominium, mobile home or apartment unit:

\$11.81 per unit*

Commodity charge:

\$2.71 per 1,000 gallons or 134 cft

*Residential customers with meters of 1" or larger will be charged commercial rate

Commercial

Basic Facilities Charge

\$11.81 per single family equivalent (SFE)

Commodity charge:

\$2.71 per 1,000 gallons or 134 cft

The Utility will also charge for the cost of water purchased from the government body or agency, or other entity. The charges imposed or charged by the government body or agency, or other entity providing the water supply will be charged to the Utility's affected customers on a pro rata basis without markup. Where the Utility is required by regulatory authority with jurisdiction over the Utility to interconnect to the water supply system of a government body or agency or other entity and tap/connection/impact fees are imposed by that entity, such tap/connection/impact fees will also be charged to the Utility's affected customers on a pro rata basis, without markup.

I. WATER (continued)

Commercial customers are those not included in the residential category above and include, but are not limited to hotels, stores, restaurants, offices, industry, etc.

The Utility will, for the convenience of the owner, bill a tenant in a multi-unit building, consisting of four or more residential units, which is served by a master water meter or a single water connection. However, in such cases all arrearages must be satisfied before service will be provided to a new tenant or before interrupted service will be restored. Failure of an owner to pay for services rendered to a tenant in these circumstances may result in service interruptions.

When, because of the method of water line installation utilized by the developer or owner, it is impractical to meter each unit separately, service will be provided through a single meter, and consumption of all units will be averaged; a bill will be calculated based on that average and the result multiplied by the number of units served by a single meter.

2. Nonrecurring Charges

Tap Fees \$600 per SFE*

3. Account Set-Up and Reconnection Charges

a. Customer Account Charge - for new customers only
\$30.00

b. Reconnection Charges: \$40.00
In addition to any other charges that may be due, a reconnection fee of Forty dollars (\$40.00) shall be due prior to the Utility reconnecting service which has been disconnected for any reason set forth in Commission Rule R.103-732.5. Customers who ask to be reconnected within nine months of disconnection will be charged the monthly base facility charge for the service period they were disconnected. The reconnection fee shall also be due prior to reconnection if water service has been disconnected at the request of the customer.

4. Other Services

Fire Hydrant - \$135.00 per hydrant

per year for water service payable in advance. Any water used should be metered and the commodity charge in Section One (1) above will apply to such usage.

I. WATER (continued)

5. Billing Cycle / Late Payment

Recurring charges will be billed monthly in arrears. Nonrecurring charges will be billed and collected in advance of service being provided. Any balance unpaid within twenty-five (25) days of the billing date shall be assessed a late payment charge of one and one-half (1.5%) percent for each month or any part of a month that said payment remains unpaid.

6. Extension of Utility Service Lines and Mains

The Utility shall have no obligation at its expense to extend its utility service lines or mains in order to permit any customer to connect to its water system. However, anyone or any entity which is willing to pay all costs associated with extending an appropriately sized and constructed main or utility service line from his/her/its premises to any appropriate connection point, to pay the appropriate fees and charges set forth in this rate schedule, and comply with the guidelines and standards hereof, shall not be denied service, unless water supply is unavailable or unless the South Carolina Department of Health and Environmental Control or other government entity has restricted the Utility from adding for any reason additional customers to the serving water system. In no event will the Utility be required to construct additional water supply capacity to serve any customer or entity without an agreement acceptable to the Utility first having been reached for the payment of all costs associated with adding water supply capacity to the affected water system.

7. Cross Connection Inspection Fee

Any customer installing, permitting to be installed, or maintaining any cross connection between the Utility's water system and any other non-public water system, sewer or a line from any container of liquids or other substances, must install an approved back-flow prevention device in accordance with 24A S.C. Code Ann. Regs. R.61-58.7.F, as may be amended from time to time. Such a customer shall annually have such cross connection inspected by a licensed certified tester and provide to Utility a copy of a written inspection report and testing results submitted by the certified tester in accordance with 24A S.C. Code Ann. Regs. R.61-58.7.F, as may be amended from time to time. Said report and results must be provided by the customer to the Utility no later than June 30th of each year. If a customer fails to comply with the requirement to perform annual inspections, the utility may, after 30 days' written notice, disconnect water service. The Utility will provide customers a 30-day advance written notice of the recurring annual date when the customer must have their backflow prevention device tested by a licensed, certified tester.

I. WATER (continued)

8. Electronic Billing and Electronic Payment

If requested by the customer in writing and within the capability of the Utility, the Utility may, in lieu of mailing a paper copy, provide an electronic bill to the customer on the Utility's website. The electronic bill shall contain the same content and be presented in the same or a similar format as a bill delivered to the customer pursuant to Commission Rule R. 103-732.2 as may be amended from time to time. The Utility will provide customers a monthly electronic notice via email of the bill statement availability and the web address of its location to those customers selecting to receive bills electronically.

* A Single Family Equivalent (SFE) shall be determined by using the South Carolina Department of Health and Environmental Control Guidelines for Unit Contributory Loadings for Domestic Wastewater Treatment Facilities -- 25 S.C. Code Ann. Regs. 61-67 Appendix A, as may be amended from time to time. Where applicable, such guidelines shall be used for determination of the appropriate monthly service and tap fee.

DRAFT

II. SEWER

1. Monthly Charges

Residential - charge per single-family house, condominium, villa, mobile home or apartment unit:	\$49.95 per unit
Commercial:	\$49.95 per SFE*

Commercial customers are those not included in the residential category above and include, but are not limited to, hotels, stores, restaurants, offices, industry, etc.

The Utility will also charge for treatment services provided by the government body or agency, or other entity. The rates imposed or charged by the government body or agency, or other, entity providing treatment will be charged to the Utility's affected customers on a pro rata basis, without markup. Where the Utility is required under the terms of a 201/208 Plan, or by other regulatory authority with jurisdiction over the Utility, to interconnect to the sewage treatment system of a government body or agency or other entity and tap/connection/impact fees are imposed by that entity, such tap/connection/impact fees will be charged to the Utility's affected customers on a pro rata basis, without markup.

The Utility will, for the convenience of the owner, bill a tenant in a multi-unit building, consisting of four or more residential units, which is served by a master sewer connection or a single sewer connection. However, in such cases all arrearages must be satisfied before service will be provided to a new tenant or before interrupted service will be restored. Failure of an owner to pay for services rendered to a tenant in these circumstances may result in service interruptions.

2. Nonrecurring Charges

Tap Fees (which includes sewer service connection charges and capacity charges)	\$1,200.00 per SFE*
---	---------------------

The nonrecurring charges listed above are minimum charges and apply even if the equivalency rating of a non residential customer is less than one (1). If the equivalency rating of a non residential customer is greater than one (1), then the proper charge may be obtained by multiplying the equivalency rating by the appropriate fee. These charges apply and are due at the time new service is applied for, or at the time connection to the sewer system is requested.

II. SEWER (continued)

3. Notification, Account Set-Up and Reconnection Charges

- a. Notification Fee \$15.00

A fee of fifteen (\$15.00) dollars shall be charged each customer to whom the Utility mails the notice as required by Commission Rule R. 103-535.1 prior to service being discontinued. This fee assesses a portion of the clerical and mailing costs of such notices to the customers creating the cost.

- b. Customer Account Charge – \$25.00
for new customers only.

A fee of twenty-five (\$25.00) dollars shall be charged as a one-time fee to defray the costs of initiating service. This charge will be waived if the customer is also a water customer.

- c. Reconnection Charges: \$250.00

In addition to any other charges that may be due, a reconnection fee of two hundred fifty (\$250.00) dollars shall be due prior to the Utility reconnecting service which has been disconnected for any reason set forth in Commission Rule R.103-532.4.

4. Billing Cycle

Recurring charges will be billed monthly, in arrears. Nonrecurring charges will be billed and collected in advance of service being provided.

5. Extension of Utility Service Lines and Mains

The Utility shall have no obligation at its expense to extend its utility service lines or mains in order to permit any customer to discharge acceptable wastewater into one of its sewer systems. However, anyone or any entity which is willing to pay all costs associated with extending an appropriately sized and constructed main or utility service line from his/her/its premises to an appropriate connection point, to pay the appropriate fees and charges set forth in this rate schedule and to comply with the guidelines and standards hereof, shall not be denied service, unless treatment capacity is unavailable or unless the South Carolina Department of Health and Environmental Control or other government entity has restricted the Utility from adding for any reason additional customers to the serving sewer system. In no event will the Utility be required to construct additional wastewater treatment capacity to serve any customer or entity without an agreement acceptable to the Utility first having been reached for the payment of all costs associated with adding wastewater treatment capacity to the affected sewer system.

II. SEWER (continued)

6. Toxic and Pretreatment Effluent Guidelines

The Utility will not accept or treat any substance or material that has been defined by the United States Environmental Protection Agency ("EPA") or the South Carolina Department of Health Environmental Control ("DHEC") as a toxic pollutant, hazardous waste, or hazardous substance, including pollutants falling within the provisions of 40 CFR 129.4 and 401.15. Additionally, pollutants or pollutant properties subject to 40 CFR 403.5 and 403.6 are to be processed according to the pretreatment standards applicable to such pollutants or pollutant properties, and such standards constitute the Utility's minimum pretreatment standards. Any person or entity introducing any such prohibited or untreated materials into the Company's sewer system may have service interrupted without notice until such discharges cease, and shall be liable to the Utility for all damages and costs, including reasonable attorney's fees, incurred by the Utility as a result thereof.

7. Electronic Billing and Electronic Payment

If requested by the customer in writing and within the capability of the Utility, the Utility may, in lieu of mailing a paper copy, provide an electronic bill to the customer on the Utility's website. The electronic bill shall contain the same content and be presented in the same or a similar format as a bill delivered to the customer pursuant to Commission Rule R. 103-532.1 as may be amended from time to time. The Utility will provide customers a monthly electronic notice via email of the bill statement availability and the web address of its location to those customers selecting to receive bills electronically.

* A Single Family Equivalent (SFE) shall be determined by using the South Carolina Department of Health and Environmental Control Guidelines for Unit Contributory Loading for Domestic Wastewater Treatment Facilities --25 S.C. Code Ann. Regs. 61-67 Appendix A, as may be amended from time to time. Where applicable, such guidelines shall be used for determination of the appropriate monthly service and tap fee.

DRAFT

APPENDIX J



Tega Cay Water Service, Inc.
Monitoring Report

Docket No. 2012-177-WS

Order No. 2013-79

Prepared by the Office of Regulatory Staff

November 12, 2013

Introduction

The Public Service Commission of South Carolina ("Commission") in Docket No. 2012-177-WS issued Order No. 2013-79 requesting the Office of Regulatory Staff ("ORS") provide the Commission with a written report of its findings related to monitoring Tega Cay Water Service, Inc. ("TCWS") for continued improvements in facilities, infrastructure, and customer service by no later than November 9, 2013. The monitoring period specified by the Commission was January 9, 2013 through October 9, 2013.

ORS collaborated with TCWS to provide Commission staff with an outline of the proposed monitoring report. Specifically, the monitoring report focuses on:

- 1) Any warning notices, Notices of Violation ("NOV"), and Consent Orders by the Department of Health and Environmental Control ("DHEC") and the corresponding response/corrective action plan submitted by TCWS;
- 2) Details of corrective and preventative maintenance on water/sewer systems including location, type and cost;
- 3) Details of capital improvements including location, type and cost;
- 4) A summary of customer complaints/inquiries received by Tega Cay detailed by type of complaint (i.e. billing, service);
- 5) Detail of customer meetings or customer education provided during the monitoring period; and
- 6) Other information provided by TCWS.

TCWS filed quarterly reports with ORS on May 3, July 24 and October 18, 2013 to provide status updates on its progress. The enclosed information and attachments are provided to the Commission in response to Order No. 2013-79.

Overview of Service Area and Infrastructure

TCWS provides water distribution and wastewater collection and treatment services to over 1,700 customers in the Tega Cay community in York County. Bulk water is purchased from York County and distributed to customers. TCWS provides wastewater treatment services under National Pollutant Discharge Elimination System ("NPDES") permits issued by DHEC at two locations (NPDES permits SC0026743 and SC0026751). The wastewater collection system is comprised of a combination of approximately 50 miles of gravity flow and force mains which transport the wastewater to the two wastewater treatment plants. According to TCWS, the wastewater collection system contains an estimate 20 miles of service lines, 19 lift stations and approximately 1,100 manholes. TCWS uses ultra-violet disinfection at the two wastewater treatment plants ("WWTP") prior to discharging the treated wastewater into Lake Wylie in accordance with its NPDES permit limits.

TCWS's service territory is located on the shores of Lake Wylie and was developed in the early 1970's. The age of the collection system and the topography of the service territory contribute to the challenge of daily operation and maintenance.

ORS Inspections

ORS conducted inspections of TCWS facilities on May 9, June 20 and November 8, 2013. During the inspections, the water distribution and wastewater collection and treatment facilities appeared to be operating in compliance with the rules and regulations of the Commission and DHEC and in accordance with the DHEC Consent Order 11-004-W. ORS did not witness any Sanitary Sewer Overflows ("SSOs") or water line breaks during the site inspections. ORS confirmed collection system and WWTP improvement activities were on-going during the three site inspections. In addition, TCWS had been repairing water line leaks and making sewer line repairs at various locations within Tega Cay.

Sanitary Sewer Overflows (“SSOs”)

TCWS is required by DHEC Consent Order 11-004-W to report all SSOs to DHEC regardless whether the wastewater reaches a surface body of water, poses a threat to human health or the environment, or exceeds 500 gallons. For the monitoring period January 9 through October 9, 2013, TCWS experienced 32 SSOs.



The volume of wastewater attributed to these SSOs varied from 5 gallons to an estimated 100,000 gallons of partially treated effluent. The largest overflows occurred at WWTP #2 in January and April. TCWS indicated to ORS and DHEC that excessive inflow and infiltration (“I&I”) after rain events triggered the overflows at the ultra-violet disinfectant stage of the treatment process. Of the smaller SSOs, 11 caused service interruptions due to blockage of service laterals by roots, grease and/or toilet paper.

TCWS indicates it promptly notified DHEC of each SSO and took actions to clean up and disinfect the areas affected. No Swimming Advisories were posted near areas affected by the SSOs in February, April, May and September. While TCWS has used its “Voice Reach” system to notify customers of No Swimming Advisories in April 2013, the company did not use the Voice Reach consistently during the monitoring period. Based on information received from TCWS in

September, the company has adjusted its process to use Voice Reach to notify customers of all No Swimming Advisories in the future.

Warning Notices, Notices of Violation and Consent Orders

DHEC did not issue additional warning notices, NOVs, or Consent Orders during the monitoring period. TCWS was required to submit a Corrective Action Plan ("CAP") in January 2013 to identify and mitigate the causes of the continued SSOs in 2013. The CAP included the following items:

- 1) Visual inspection of manholes;
- 2) Smoke tests of the collection system draining into WWTP#2 to identify cross connections, leaks, and illegal connections;
- 3) Installation of manhole dish inserts; and
- 4) Replacement of missing clean-out caps.

According to information provided by TCWS, the collection system deficiencies identified by the CAP were completed by July 31, 2013. A list of collection system rehabilitation tasks completed by October 9, 2013 is included as Attachment #1. TCWS's contractor, WK Dickson, prepared interim status reports to update DHEC on the progress under the CAP. These interim status reports are provided in Attachment #2.

Corrective and Preventative Maintenance

TCWS estimates the total cost during the monitoring period of corrective and preventative maintenance to exceed \$1M. In summary, the collection system rehabilitation efforts include:

- 1) Installation of over 7,000 linear feet of cured-in-place pipe ("CIPP");
- 2) Installation of 263 manhole interceptor dishes;
- 3) Adjustment of manhole rings;
- 4) Installation of locking manhole lids;
- 5) Installation of 4 flow monitors;
- 6) Smoke testing;
- 7) Video inspections;
- 8) Repairs to gravity mains and service laterals; and

9) Development of a web-based GIS project activity tracking system.

In May 2013 after a large SSO, TCWS mobilized a team of over 20 Utilities, Inc. personnel from other regions to assist in the collection system investigation. The focus of this investigation was to inspect all manholes and the gravity sewer main connecting each manhole. Using video inspection technology, the team identified points of I&I surrounding WWTP #2. Two large sources of I&I identified during the inspections included: a) an indirect connection between the Tega Cay golf course storm water system and the TCWS collection system; and b) manhole lids that had been removed in areas of large storm water drainage. Both of these sources of I&I were eliminated. This inspection information was entered into the GIS project activity tracking system and used to prioritize corrective and preventative maintenance.

Routine maintenance such as cleaning of lift stations, daily inspections on all of the 19 lift stations, and clearing blocked collection lines continued during the monitoring period. Routine maintenance is included in Attachment #1 which identifies the work completed during the monitoring period.

In September 2013, TCWS began using a Sewer Line-Rapid Assessment Tool ("SL-RAT") to identify areas in the 30 miles of collection system that may require further investigation. This tool assigns a priority to each section of collection system to allow TCWS to prioritize corrective and preventative maintenance in the areas most likely to experience an SSO. TCWS was expected to complete its analysis using the SL-RAT by the end of October 2013.

Capital Improvements

The majority of the collection system rehabilitation efforts have been classified as capital improvements by TCWS, and the costs associated with those efforts are estimated to exceed \$1M. Recorded flows at WWTP#2 and #3 indicate the rehabilitation has stabilized wet weather flows due to rain events which have allowed the WWTPs to operate as designed and meet effluent limits. TCWS has begun the process of improving the partition walls within the clarifier units of WWTP #2 and #3 that were identified as needing repair or modification. This project is expected to cost approximately \$182,000 and be completed in November 2013.

Customer Complaints and Inquiries

Tega Cay customers have contacted the ORS on 108 occasions during the monitoring period. Customers have contacted the ORS through phone calls, e-mails and comment letters which have also been received by the PSC under Docket No. 2012-177-WS. As of the date of this report, ORS has no open complaints or inquiries. Table 2 provides an overview of the number and types of complaints/inquiries received by ORS.

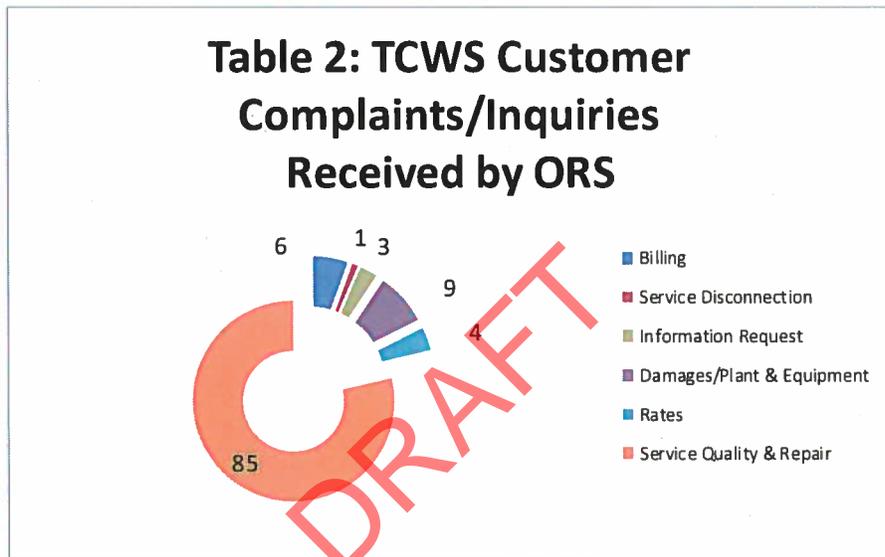
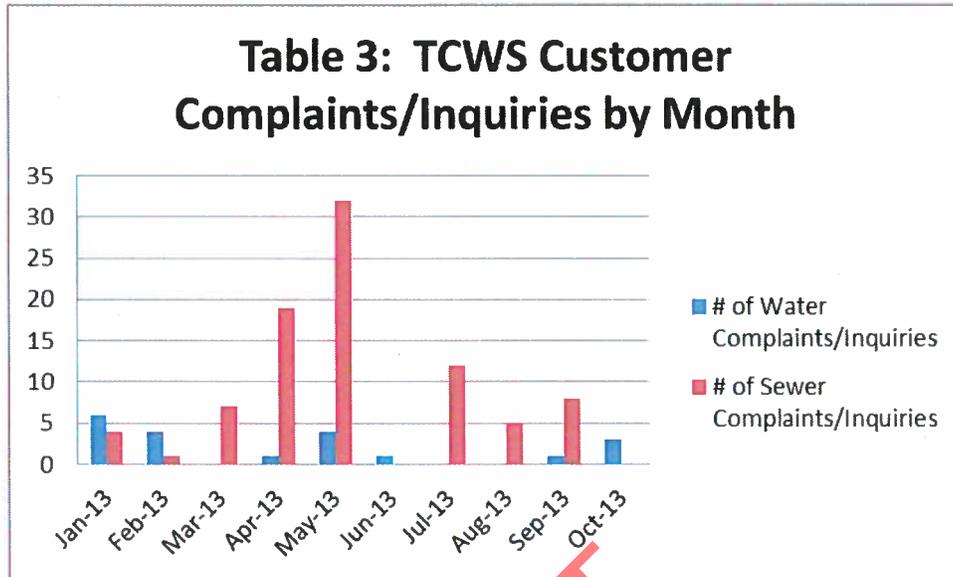


Table 3 provides an overview of the customer complaints/inquiries fielded by ORS during each month of the monitoring period by service type.



TCWS reported to ORS its customer complaints/inquiries that generated a field activity report. The field activities include both water and wastewater customer complaints/inquiries. Examples of field activities include water leaks, odors, billing questions, and SSOs.

Month/Year	# of TCWS Field Activities
January - March	85
April - June	89
July - October	89

Customer Meetings and Customer Education

During the monitoring period, no formal community meetings were held by TCWS. The company reported to ORS that it met with customers on an individual basis to address customer concerns and complaints related to field activities. TCWS issued six bulletins to Tega Cay customers via email to describe the collection system rehabilitation activities undertaken to address the SSOs in

May 2013. TCWS managers met with the mayor and city manager of Tega Cay to provide status updates related to the collection system improvements.

ORS is currently participating in a "working group" at the request of TCWS. This working group was formed in September 2013 and is comprised of TCWS, ORS, DHEC, TCWS contractors, and the city manager of Tega Cay. As of the date of this report, the customers of the Tega Cay community have not been represented in the working group meetings. The working group is exchanging information weekly on the operations, improvements, and data collection activities undertaken by TCWS.

Other Information

TCWS provided ORS information indicating that all property damage claims by customers were resolved as of the end of the monitoring period. TCWS also provided information related to an enhanced public notification process to ensure timely communication with customers, the media, and DHEC.

ORS Recommendation

TCWS continues to make progress under the DHEC Consent Order to reduce the amount of SSOs in Tega Cay. The challenges of the topography and design of the collection system will require TCWS to be vigilant in its preventative maintenance program to ensure SSOs are minimized. ORS recommends the Commission hold a hearing to allow the public to provide feedback on TCWS's activities during the monitoring period and to take testimony from TCWS on its improvement efforts and preventative maintenance plans.



August 9, 2013

Mr. Paul F. Wise
South Carolina Department of Health and Environmental Control
Water Pollution Enforcement Section
Bureau of Water
2600 Bull Street
Columbia, South Carolina 29201

RE: Progress Report
Consent Order 11-004-W
WWTF #2 NPDES Permit SC0026743
WWTF #3 & #4 NPDES Permit SC0026751
York County, South Carolina
WKD No. 20110006.00.CA

Dear Mr. Wise:

This letter is to update you on the progress of the sewer system evaluation and rehabilitation efforts within the Tega Cay Water Services, Inc. (TCWS) sewer system. As of July 31st, the collection system deficiencies that have been identified are complete. This includes deficiencies in the collection systems associated with WWTP #2 and WWTP #3. We have attached an updated list of those tasks for your information.

Throughout this process we have been monitoring the flows within each system. The rehabilitation efforts have made a drastic impact to the flows to WWTP #2, the plant that has historically had the higher level of infiltration and inflow. In early July the area experienced three consecutive days that received rainfall. This rainfall period is being presented because it represents a time in which the soil was saturated, giving an opportunity to observe the rain induced infiltration component of the wastewater flow.

The results are in the table below:

Date	Rainfall (in.)	WWTP#2 Flow (MGD)	WWTP#3 Flow (MGD)
7/6	0.5	0.2250	0.2384
7/7	0.3	0.2279	0.2547
7/8	0.5	0.2216	0.2752

1320 Main Street, Suite 400
Columbia, SC 29201
Tel: 803.786.4261
Fax: 803.786.4263
www.wkdickson.com

WWTP#3 shows an upward trend in effluent flow during these rainfall events though they do not represent a threat of an overflow. The flow monitors that have been located in the WWTP#2 collection system will be relocated to specific locations within WWTP#3 collection system next week. The flow information will be used to establish base flows and identify levels of inflow and infiltration within the system just as was done in the WWTP#2 collection system. With this information, we will be able to determine if additional evaluation or inspections are needed.

Should you have any questions or need additional information please let us know. Thank you for your time in relation to this matter.

Sincerely,

W.K. Dickson & Co., Inc.



Kevin F. Strickland, PE
Senior Project Manager

Enclosures

cc: Rick Durham, Regional Vice President, Utilities, Inc.
Patrick Flynn, Southeast Regional Director, Utilities, Inc.
David White, Project Manager, Utilities, Inc.
Mac Mitchell, Regional Manager, Utilities, Inc.



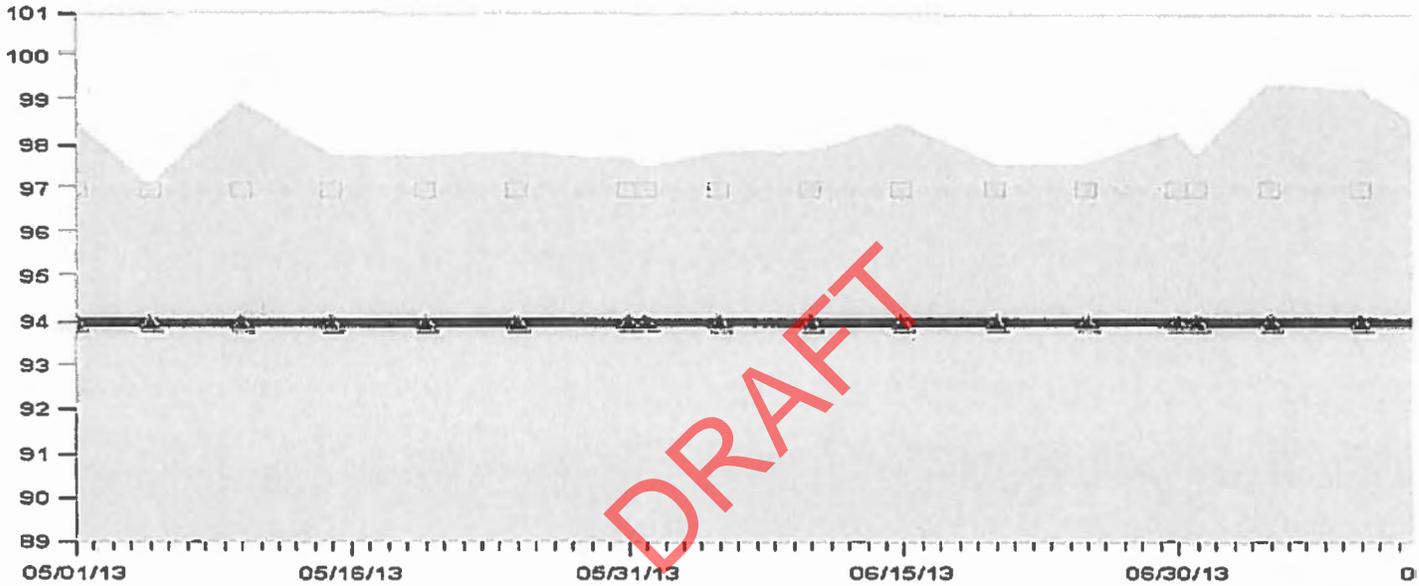
Choose State

change location

Lake Wylie

3-Month Lake Level History

Select Date Range Lake Message: None



	<u>Actual (about-lakelevels.asp?#actual)</u>	<u>Target (about-lakelevels.asp?#target)</u>	<u>Min. (about-lakelevels.asp?#min)</u>	<u>Max. (about-lakelevels.asp?#max)</u>
05/01/2013	98.4	97.0	94.0	00.0
05/02/2013	98.1	97.0	94.0	00.0
05/03/2013	98.0	97.0	94.0	00.0
05/04/2013	97.6	97.0	94.0	00.0
05/05/2013	97.0	97.0	94.0	00.0
05/06/2013	99.2	97.0	94.0	00.0
05/07/2013	99.8	97.0	94.0	00.0
05/08/2013	99.8	97.0	94.0	00.0

DRAFT

APPENDIX K



June 28, 2013

RECEIVED

JUL 01 2013

Mr. Paul F. Wise
South Carolina Department of Health and Environmental Control
Water Pollution Enforcement Section
Bureau of Water
2600 Bull Street
Columbia, South Carolina 29201

**WATER POLLUTION CONTROL
DIVISION**

**RE: Progress Report
Consent Order 11-004-W
WWTF #2 NPDES Permit SC0026743
WWTF #3 & #4 NPDES Permit SC0026751
York County, South Carolina
WKD No. 20110006.00.CA**

Dear Mr. Wise:

This letter is to update you on the progress of the sewer system rehabilitation efforts currently under way within the Tega Cay Water Services, Inc. (TCWS) wastewater collection system. On May 16th, Hydrostructures, PA installed four flow meters within the collection system to evaluate areas flowing to Tega Cay WWTP #2. The results of the flow monitoring activity that is presented herein focuses on two storm events, a short duration storm of 1.49 inches of rainfall on June 3rd and a longer duration storm event of 2.08 inches of rainfall on June 6th & 7th, a result of Tropical Storm Andrea. The two storm events help to clarify how the collection system responds to varying soil saturation conditions with the understanding that the second storm occurred when the soils throughout Tega Cay were more saturated than during the first.

The names of the graphs that are included herein correspond to manholes MH17, MH31 and MH164, where the flow meters are installed. An exception to this is that the flow meter named MH164 measures flow from the basin upstream of MH164; however, the flow meter is actually installed in MH17 that is just downstream of MH164. The location of the flow meters and the corresponding drainage basins are shown on the attached map.

The table below summarizes the data obtained from the flow meters for the two storm events referenced above. The dry weather flows that are included in the table are the results of analyzing flow at each flow meter for a span of eight consecutive days without rainfall. Then the sewer flow during each storm event was compared to the dry weather flow to determine an estimated volume of infiltration and inflow (I&I) during the storm event. The drainage areas for MH17 and MH164 include gravity lines situated along the edge of the lake that were expected to have significant I&I because of the potential for soil saturation at the lake's edge. The drainage area for MH31 includes a low lying area that drains storm water runoff to one of the nearby golf course lakes. This area was expected to have some I&I, but the study showed that it has more I&I per mile of pipe than the

other larger areas, which was not expected. The flow meter in MH14 was installed to measure flow from the golf course fairway area in which an indirect connection with a storm drainage structure was found in May. The results of the flow monitoring confirmed that the improvements made to eliminate this indirect connection along with other improvements that addressed infiltration were successful.

Graphs of the flow data for each of the storms are included herein.

Flow Meter	Dry Weather Flow	June 3 rd Flow	June 3 rd I&I	June 6 th & 7 th Flow	June 6 th & 7 th I&I
MH17	35,600 GPD	75,900 GAL	40,300 GAL	269,000 GAL	197,800 GAL
MH31	14,800 GPD	55,700 GAL	40,900 GAL	162,400 GAL	132,800 GAL
MH164	30,300 GPD	32,900 GAL	2,600 GAL	128,400 GAL	67,800 GAL
MH 14	25,900 GPD	29,400 GAL	3,500 GAL	71,100 GAL	19,300 GAL

The following table includes results from an analysis that converts the I&I to GPD per inch-mile of pipe. By including the length and size of pipe within each basin in these units, the basins can be compared and prioritized to determine where the largest sources of I&I potentially exist. The quantity of I&I during the June 6th and 7th storm is used for this analysis. As a result, the areas draining to MH17 and MH31 are the areas that offer the best opportunity to reduce excess I&I.

Flow Meter	I&I (GPD) *	Gravity System (in·mile)	I&I (GPD/in·mile)
MH17	98,900	40.19	2,460
MH31	66,400	9.47	7,011
MH164	33,900	33.33	1,017
MH 14	9,650	10.46	922

* Average of I&I for the two-day rain event on June 6th and 7th.

On June 24 two of the flow meters were relocated to new locations within the MH17 basin. The purpose of relocating these flow meters is to further identify the location and intensity of the majority of I&I in the MH17 basin. There will be no further monitoring of either the MH164 basin or the MH31 basin. Once the flow meters have again recorded significant storm events, the flow meters will be analyzed to quantify excess I&I. This information will be used to measure the success of the system improvements made thus far and to potentially identify additional improvements needed within the collection system.

For your use, we have included a spreadsheet which is a compilation of the collection system deficiencies identified to date and identification of the ones completed. The remaining improvements are scheduled to be completed by the end of July assuming the contractor remains on the current schedule. As the field crews continue to inspect gravity lines using closed circuit television (CCTV), additional needed improvements may be identified and added to the list.

In summary, this progress report focuses on the results of the flow metering activities and the collection system improvements that have been completed since the submittal to you of the mid-

May interim report. Once you have reviewed this progress report, should you have any questions or need additional information, please give me a call. Likewise, if it would benefit you and your staff to have a meeting to discuss the information contained herein, we would be glad to meet with you. Just let us know when you would like to schedule a meeting.

Thank you for your time in relation to this matter.

Sincerely,

W.K. Dickson & Co., Inc.



Kevin F. Strickland, PE
Senior Project Manager

Enclosures

cc: Patrick Flynn, Southeast Regional Director, Utilities, Inc.
David White, Project Manager, Utilities, Inc.
Mac Mitchell, Regional Manager, Utilities, Inc.

DRAFT



May 14, 2013

Mr. Paul F. Wise
SCDHEC – Bureau of Water
Water Pollution Enforcement Section
2600 Bull Street
Columbia, South Carolina 29201

RE: Progress Report – May 2013
Consent Order 11-004-W
WWTF #2 NPDES Permit SC0026743
WWTF #3 & #4 NPDES Permit SC0026751
York County, South Carolina
WKD No. 20110006.00.CA

Dear Mr. Wise:

In response to a January 17th spill from Wastewater Treatment Plant #2 (WWTP2) in the Tega Cay Water Service system, inspection crews were dispatched to visually inspect the entire system draining to WWTP 2. The inspections included opening manholes to assess the condition of the interior of the manhole with an emphasis placed on finding sources of inflow and rain induced infiltration (RII). The entire system was also smoke tested in an effort to locate leaks and potential cross connections with storm drainage structures and roof drains. On May 6th another spill occurred at WWTP 2. In response to this spill, the entire collection system was once again visually inspected. Various locations were identified for additional smoke testing and dye testing. In this second effort, crews began inspections immediately after the storm on May 6th and within 2 days, Utilities Inc. had 21 collection system staff on the ground performing inspections. The staff included Area Managers from various states throughout the southeast to offer their expertise during the inspections. Utilities Inc. continues to have several CCTV contractors moving through the system inspecting the collection system. The information below is a summary of the system condition assessment (which is ongoing) and the rehabilitation efforts that have been completed related to the larger sources of inflow and RII.

1. Installation of Inflow Dishes

The field crews walked the collection system and identified manholes appearing to be susceptible to overland flow. Twenty-seven (27) manholes were identified as being susceptible to overland flow and these manholes have been modified with the addition of inflow dishes. The inflow dishes prevent inflow from entering the manhole. Manholes exposed to excessive inflow can be a source of inflow ranging from 3000 to 10,000 gallons depending on the conditions of the manhole location. In a conservative approach and in response to the most recent storm event, Utilities Inc. is in the process of installing inflow dishes to all manholes that have vents, regardless of their location. At the end of next week 127 manholes will have inflow dishes installed and another 136 inflow dishes are on order for additional manholes that have vented manhole covers.

1320 Main Street, Suite 400
Columbia, SC 29201
Tel: 803.786.4261
Fax: 803.786.4263
www.wkdickson.com

2. Cross Connection

During the smoke testing that began on March 11th the inspection crews found a potential connection to storm drainage structures along one of the golf course fairways. While blowing smoke into the sewer lines, smoke was observed exiting storm drain inlets. Since this was first observed, this part of the system has been tested further using dye testing techniques. The inspection crews introduced dye laden water into the storm system and observed the adjacent sewer lines to inspect for the dye. During these tests, no dye was observed; however this is not conclusive that a cross connection doesn't exist. The inspection continued using CCTV inspection to look for holes in the pipe, leaky joints, cross connections, etc. The CCTV inspection did not reveal a cross connection but did reveal signs of recent heavy flow indicated by water marks along the pipe. The pipes in this area were also observed to contain a significant amount of RII during the visual inspection on May 6th just after the storm. The inspection crews will next inspect the laterals in search for the cross connection by excavating the laterals near the storm system crossings.

3. Manhole A-23

Manhole A-23 was found with the manhole cover replaced with a storm grate inlet. The original manhole cover was found adjacent to the manhole. This manhole was draining approximately 1-acre of land adjacent to a homeowner's property. The storm water had been intentionally channeled to the manhole with the use of rip-rap. The storm grate has been replaced with a solid manhole cover and this manhole will be raised and a locking manhole cover will be installed to prevent further modification by the homeowner. An inflow dish was installed in this manhole after the January spill and was inspected after the May spill. The inflow dish was still in place but it cannot be known if this manhole was secure during the May storm.

4. Manhole D-70

Manhole D-70 was observed in the inspections following the May spill. The manhole cover associated with this manhole had been removed and set on the ground a few feet from the manhole. This manhole while open would have drained approximately 6 acres of land. It has been estimated that this source of inflow would range from 100,000 to 200,000 gallons in the 3" storm. This manhole was inspected following the January spill and the cover was found in place; therefore it is believed that it was not a factor in the January spill.

5. Flow Monitoring

Four flow monitors capable of measuring flows during surcharged conditions will be installed on May 16th at various locations to capture the inflow and RII experienced during storm events. Flows from most of the system can be estimated with pump run times and the flow monitors will be used to estimate flows in the system that are not pumped. One of the areas that will be monitored for flow will be the golf course area in drainage basin C where the cross connection with the storm system is being investigated. Other areas identified include those areas that are low lying and receiving a significant amount of storm runoff. These areas are located near WWTP 2 within the drainage basins C and E.

6. Hydraulics Analysis

The WWTP spills associated with the storm events in 2013 were coupled with high lake levels. The high lake levels create an additional 2 to 3 feet of head in the effluent system and in conjunction with the higher flows into the plant create a condition causing overflows at the ultra-violet (UV) disinfection system. The effluent pipe into the lake is being inspected by divers this week to assess the condition of the pipe and diffusers and will then be analyzed to determine if any improvements are needed.

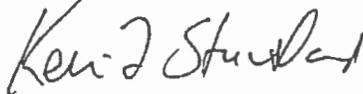
7. Various Improvements throughout the system.

Throughout the system, the inspection crews have located missing cleanout caps or broken assemblies, offset manhole rings and covers, root intrusion and leaks in sewer mains, manholes and laterals. Inspections of the Tega Cay system are ongoing and repairs are being made continuously. This includes contractors that are making dig and replace/repairs; contractors that are using insitu repairs such as Cured in Place Pipe (CIPP) and in-situ point repairs; and contractors that are tasked with repairing and rehabilitating manholes. Lists of the identified deficiencies and recommended repairs have been included herein and are being updated daily as inspections and repairs continue.

We will continue to update you as progress is made. In the meantime, please do not hesitate to contact us at (803) 786-4261 if any questions arise or additional information is required. Thank you for your time in relation to this matter.

Sincerely,

W.K. Dickson & Co., Inc.



Kevin F. Strickland, PE
Senior Project Manager

DRAFT

Enclosures

cc: Patrick Flynn, Southeast Regional Director, Utilities, Inc.
David White, Project Manager, Utilities, Inc.
Mac Mitchell, Operations Manager, Utilities, Inc.



community infrastructure consultants

April 12, 2013

RECEIVED

APR 18 2013

WATER POLLUTION CONTROL
DIVISION

Mr. Paul F. Wise
South Carolina Department of Health and Environmental Control
Water Pollution Enforcement Section
Bureau of Water
2600 Bull Street
Columbia, South Carolina 29201

**RE: Consent Order 11-004-W
Corrective Action Plan Interim Report
WWTF #2 NPDES Permit SC0026743
WWTF #3 & #4 NPDES Permit SC0026751
York County, South Carolina
WKD No. 20110006.00.CA**

Dear Mr. Wise:

On March 11, W.K. Dickson began additional inspections in the Tega Cay collection system in response to SSO's that occurred in January and in accordance with the proposed Corrective Action Plan dated February 28, 2013. The inspections that were completed in the Tega Cay system during 2011 focused on SSO's that occurred within the collection system. The SSO's within the collection system have been virtually eliminated but January's storm and the higher lake levels revealed inflow into the system at levels above that which WWTP #2 can handle. The inspections that began on March 11 focused on identifying potential inflow sources. All gravity lines draining to WWTP # 2 were smoke tested and manholes were inspected to determine if they would be susceptible to rain induced inflow during rain events such as that experienced in January. Activities and preliminary results are detailed below in the order they were presented in the revised CAP:

1. *Visual inspections of manholes located within storm drainage flow ways and below elevations relative to the highest predicted level of the lake.*

Visual inspections resulted in the identification of twenty-seven (27) manholes located in flood ways and susceptible to rain induced inflow (these manholes can be seen on the *Map of Sanitary Sewer Evaluation Study March 2013*, included herein). Tega Cay personnel ordered and installed inflow dishes in each identified access structure. Historical manhole data suggests that vented manholes, when exposed to stormwater runoff can contribute 3000 GPD to 10,000 GPD depending on the specifics of the manhole. Applying this estimate to the 27 manholes in Tega Cay would result in a range of inflow from 81,000 GPD to 270,000 GPD.

One (1) manhole with a storm grate cover was discovered. Someone in years past replaced the manhole cover with a storm grate. Manhole A-23 is located in a natural drainage way which

1320 Main Street, Suite 400
Columbia, SC 29201
Tel: 803.786.4261
Fax: 803.786.4263
www.wkdickson.com

Transportation • Water Resources • Urban Development • Geomatics

drains approximately 1 acre of land. An inflow dish has been installed to prevent excessive inflow. The storm grate will be replaced with a water tight bolted manhole cover to deter anyone from removing it. (See photos 8 thru 11.) A grate of this size can allow 40,000 gallons per hour with just 1 inch of flow over the grate.

One (1) manhole (C-31) was discovered adjacent to Lake Wylie in a low lying area (See photo 7). The photo illustrates that a lake level rise such as experienced in January would result in severe inflow to the system. During the January storm this manhole would have been under water and would have allowed a severe amount of inflow into the gravity system. The inflow into this manhole has not yet been quantified, but is expected to be the largest single source of inflow discovered yet. This manhole will be raised so that the top is above the elevation of the highest predicted level of the lake.

2. *Smoke tests of the gravity collection system in areas draining to WWTP #2.*

Smoke testing began on March 11 in service areas adjacent to lift stations # 2 and # 3 and concluded on March 27. Additional deficiencies discovered included broken clean outs, several leaks from manholes, and one (1) illicit connection between the Tega Cay collection system and the City of Tega Cay Storm Drainage system. Utilities, Inc. has contacted the City and requested that the storm drain be disconnected from the wastewater collection system. Leaking manholes will be further evaluated and prioritized to determine the best method of repair. (See photos 1 thru 6.)

3. *Field crews will install manhole dish inserts as they investigate and find manholes that appear to be subject to inflow through the manhole cover.*

Twenty-seven manholes have been identified as being susceptible to rain induced inflow. Inflow dishes have been installed at the following manholes and are shown on the attached map.

- | | | |
|-------|-------|-------|
| • A16 | • E47 | • D64 |
| • A23 | • D6 | • D66 |
| • A40 | • D78 | • D68 |
| • A48 | • D80 | • D69 |
| • A50 | • D15 | • B13 |
| • A55 | • D36 | • B14 |
| • E33 | • D51 | • B26 |
| • E43 | • D56 | • B61 |
| • E45 | • D62 | • E20 |

4. Field crews will replace any missing clean-out caps identified during smoke testing.

During the smoke testing, missing or broken clean-out caps were identified and located. Tega Cay personnel have replaced missing clean-out caps and are in the process of repairing broken cleanout assemblies. (See photo 3).

The final report will include a detailed evaluation of the defects and the recommended repairs prioritized based on National Association of Sewer Service Companies (NASSCO) standards. The defects that have been included in this report are significant and the repairs will result in a significant reduction of rain induced inflow into the Tega Cay collection system. As the study continues we are optimistic that the collection system can be rehabilitated and maintained with the assistance from the City of Tega Cay and the customers served by this system.

Should you have any questions or comments please feel free to give us a call.

Sincerely,

W.K. Dickson & Co., Inc.



Kevin F. Strickland, PE
Senior Project Manager

cc: Patrick Flynn, Southeast Regional Director, Utilities, Inc.
David White, Project Manager, Utilities, Inc.
Mac Mitchell, Regional Manager, Utilities, Inc.

DRAFT

Date	Contractor	Location	Problem Description
4/8/2013	Corey&Rusty	various	Manhole inserts to stop infiltration
4/5/2013	P&L	MH A-70 to A-68	Televised main
4/5/2013	P&L	MH C-45 to C-44	Televised main
4/5/2013	P&L	2078 Marquesas	Televised main
4/5/2013	Eudy	2079 Marquesas	Televised and installed 6" cleanout
4/4/2013	Barry's	4056 Point Clear	Asphalt Patch
4/3/2013	Aqua	Plant #4	N/A cleanup, past jobs
4/3/2013	Aqua	2079 Marquesas	6" main replaced, roots removed
4/2/2013	P&L	2078 Marquesas	Jetting
4/2/2013	P&L	2077 Marquesas	Jetting
4/2/2013	P&L	MH A-70 to A-68	Jetting
3/29/2013	Eudy	2079 Marquesas	Televised main
3/29/2013	Aqua	2079 Marquesas	6" main roots removed
3/29/2013	Fortiline	2077 Marquesas	Parts for main repair
3/28/2013	Aqua	2078 Marquesas	6" main roots removed/ installed cleanout
3/28/2013	Fortiline	2077 Marquesas	Parts for 6" cleanout
3/28/2013	USA Bluebook	MH A-16, A-40, A-48, A-50	Manhole inserts
3/28/2013	Kenny	MH A-23	Installed insert
3/27/2013	Eudy	2078 Marquesas	Root Cut/Televised main
3/27/2013	Aqua	4056 Point Clear	6" main and two laterals at the main
3/27/2013	Fortiline	4056 Point Clear	Parts for main repair
3/27/2013	Kenny	MH A-121	Activated Carbon Insert
3/26/2013	Eudy	5026 Tara Tea	Street cleaning
3/26/2013	P&L	E-49 to E-48	Root Cut
3/26/2013	WK Dickson	Molokai and Tara Tea	Smoke Testing
3/20/2013	DrainPro	E-13 to E-12	Sleeved 8" sewer main
3/19/2013	DrainPro	E-12 to C-33	Sleeved main
3/18/2013	Eudy	26024 Misty Way	Televised main and lateral
3/13/2013	WK Dickson	Point Clear and Marquesas	Smoke Testing
3/12/2013	WK Dickson	Point Clear and Marquesas	Smoke Testing
3/11/2013	Aqua	Plant #4	N/A cleanup, past jobs
3/11/2013	Eudy	12041 Spinnaker	Cleaned and televised main
3/11/2013	P&L	K-145 to K-146	Jetting
3/9/2013	Barry's	4060 Point Clear	Asphalt Patch
3/4/2013	Ellisor	?????	Manhole inserts
3/1/2013	Eudy	MH C-50	Concrete work
3/1/2013	DrainPro	E-20 to E-19	Sleeved 8" sewer main
3/1/2013	DrainPro	G-8 to G-9	Sleeved 8" sewer main
2/25/2013	Eudy	1164 Molokai	Landscaping
2/20/2013	P&L	A-182 to A-181	Root Cut/Televised main
2/19/2013	P&L	A-182 to A-181	Televised main
2/18/2013	P&L	A-182 to A-181	Jetting
2/15/2013	Aqua	27022 Tidal Way	6" main repaired
2/14/2013	P&L	A-88a to A-88	Cleaned and televised main
2/13/2013	P&L	27024 Fahleh Cove	Cleaned and televised main
2/12/2013	P&L	A-88a to A-88	Jetting
2/11/2013	P&L	I-47 to I-46	Televised main
2/8/2013	Aqua	1164 Molokai	8" main repaired
2/8/2013	Eudy	5001 Tara Tea	Televised Main
2/8/2013	Fortiline	1164 Molokai	Parts for main repair
2/7/2013	P&L	A-88a to A-88	Cleaned and televised main

Date	Contractor	Location	Problem Description
2/7/2013	Aqua	1166 Molokai	8" main repaired
2/5/2013	Eudy	3030 Point Clear	Televised Main
2/4/2013	P&L	MH A-88a to A-88	Televised main
1/10/2013	P&L	5031 Suwarrow Cir.	Cleaned and televised main
1/10/2013	DrainPro	? Tidal Way	Sleeved Line
1/10/2013	DrainPro	? Suwarrow Cir.	Sleeved Line
1/9/2013	P&L	16128 Tana Tea	Cleaned and televised main

DRAFT

Date	Contractor	Location	Problem Description
4/3/2013	Aqua	2079 Marquesas	Tree roots in the lateral
3/29/2013	Eudy	3026 Point Clear	Televised lateral
3/28/2013	Eudy	2077 Marquesas	Televised lateral
3/28/2013	Eudy	2078 Marquesas	Televised lateral
3/21/2013	Eudy	5052 Suwarrow Ct.	Cleaned and televised lateral
3/20/2013	Aqua	1108 Palmyra	Repair lateral/install cleanout
3/20/2013	Eudy	4056 Point Clear	Cleaned and televised lateral
3/18/2013	Barry's	5026 Tara Tea	Asphalt patch
3/14/2013	Eudy	5026 Tara Tea	Landscaping
3/13/2013	Eudy	5026 Tara Tea	Repair lateral
3/12/2013	Eudy	1108 Palmyra	Televised lateral
3/7/2013	Eudy	4060 Point Clear	Cleanout installed
3/7/2013	Fortiline	2077 Marquesas	Parts for repair
3/7/2013	Fortiline	2078 Marquesas	Parts for repair
3/6/2013	Fortiline	2078 Marquesas	Parts for repair
3/5/2013	Eudy	5026 Tara Tea	Cleaned and televised lateral
2/8/2013	Eudy	27022 Tidal Way	Televised lateral
1/31/2013	Eudy	1162 Molokai	Televised lateral
1/30/2013	Eudy	1160 Molokai	Cleaned and televised lateral
1/30/2013	Eudy	1160 Molokai	Lateral repaired
1/30/2013	Roto-Rooter	1162 Molokai	Cleaned lateral
1/29/2013	Eudy	4117 Marquesas	Televised lateral
1/24/2013	Eudy	5032 Suwarrow Cir.	Replaced lateral
1/23/2013	Eudy	5026 Tara Tea	Televised lateral
1/23/2013	Eudy	5031 Suwarrow Cir.	Replaced lateral
1/22/2013	Eudy	5032 Suwarrow Cir.	Televised lateral
1/22/2013	Eudy	5032 Suwarrow Cir.	Televised lateral
1/20/2013	Eudy	31016 Executive Pt.	Televised lateral
1/18/2013	Eudy	4060 Point Clear	Televised lateral
1/11/2013	Eudy	1062 Woodlake	Replaced lateral
1/10/2013	Eudy	1062 Woodlake	Cleaned and televised lateral

DRAFT



RECEIVED

MAR 01 2013

WATER POLLUTION CONTROL
DIVISION

February 28, 2013

Mr. Paul F. Wise
South Carolina Department of Health and Environmental Control
Water Pollution Enforcement Section
Bureau of Water
2600 Bull Street
Columbia, South Carolina 29201

**RE: Consent Order 11-004-W
Corrective Action Plan
WWTF #2 NPDES Permit SC0026743
WWTF #3 & #4 NPDES Permit SC0026751
York County, South Carolina
WKD No. 20110006.00.CA**

Dear Mr. Wise:

This Corrective Action Plan (CAP) is being submitted in response to Sanitary Sewer Overflows (SSOs) that occurred on January 18, 2013. On January 17 & 18, 2013 approximately two and one half (2.5) inches of rain fell in Tega Cay (data from United States Geological Survey Rain Station 350128081000145 CRN-38). Concurrent with the rainfall, the Catawba River, Lake Norman, Mountain Island Lake, and Lake Wylie rose significantly. Lake Wylie rose approximately two (2) feet over the period between January 16 and 18. This activity resulted in overflows at WWTP #2 and one (1) manhole directly upstream of the plant. Flow data indicates that the daily flow through WWTP #2 increased approximately five hundred thousand (500,000) gallons while flows at WWTP #3 increased approximately two hundred fifty thousand (250,000) gallons. There were no SSOs associated with the collection system draining to WWTP #3.

The rainfall event, changes in lake levels and the observed flow through the plants are events that are not indicative of infiltration but of inflow and therefore the CAP will focus on identifying inflow to the collection system. To date, Tega Cay Water Service and WK Dickson have collected data included rainfall data, lake levels of the primary lakes within the storm basin, information related to flood zones, topographical information of the development and gravity sewer system, flow data through the treatment plants, and run times of the pump stations within the collection system. This data has been compiled to better understand the events leading up to the overflows and to produce a CAP. It is believed that the higher lake level has a significant impact on the behavior of the collection system and why these occurrences were not observed in previous investigations. The CAP will include the following items:

1. Visual Inspections of manholes located within storm drainage flow ways and below elevations relative to the highest predicted level of the lake. See attached graph of Lake Wylie lake levels.

2. Smoke Tests of the Gravity Collection System in the areas draining to WWTP #2 beginning in the areas draining to lift stations # 2 and # 3. Smoke tests will identify cross connections with storm drains and leaks that would allow inflow as well as illicit connections.
3. Field crews will install manhole dish inserts as they investigate and find manholes that appear to be subject to inflow through the manhole cover. These can be left or replaced with water tight covers later.
4. Field crews will replace any missing Clean-out caps that may be identified during smoke testing.

Field work has been scheduled to begin the week of March 11, 2013 and will continue for a period of up to forty-five (45) days. After the completion of the field work, recommendations for repairs and a schedule for completion will be submitted to your office.

Should you have any questions or comments please feel free to give me a call to discuss further.

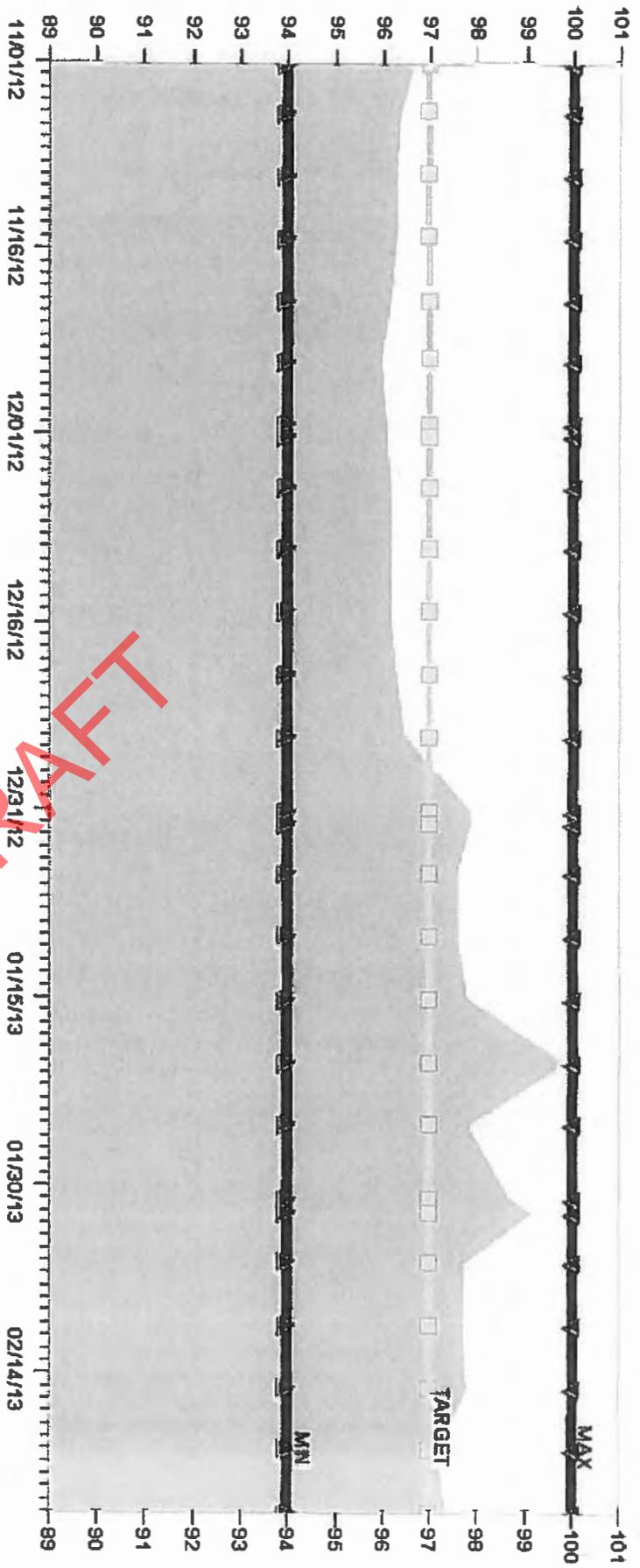
Sincerely,

W.K. Dickson & Co., Inc.



Kevin F. Strickland, PE
Senior Project Manager

cc: Patrick Flynn, Southeast Regional Director, Utilities, Inc.
David White, Project Manager, Utilities, Inc.
Mac Mitchell, Regional Manager, Utilities, Inc.



DRAFT