

Allentown Water and Sewer System: Statement of Qualification to the City of Allentown for Water and Sewer Concession

Joint Submission by Access Capital Advisers, Severn Trent Environmental
Services and Energy & Infrastructure Partners

Date 17 August 2012





Table of Contents

- Table of Contents.....3**
- Table of Figures.....3**
- Table of Tables.....4**
- Executive Summaryi**
- E. Proposer Information..... 1**
 - E.1 Section I – Description of Prospective Proposer 1
 - E.2 Section II – Roles of Team Members and Key Personnel..... 3
 - E.3 Section III – Operator 6
 - E.4 Section IV – Contact Person..... 8
 - E.5 Section V – Controlling Interest 9
 - E.6 Section VI – Expected Advisors 10
 - E.7 Section VII – Comparable Projects 11
 - E.8 Section VIII – References 15
 - E.9 Section IX – Additional References 16
- F. Technical Capability..... 18**
 - F.1 Section I – Operations and Maintenance Expertise 18
 - F.2 Section II – Customer Service 28
 - F.3 Section III – Safety and Security 31
 - F.4 Section IV – Capital Improvements 35
- G. Financial Capability.....37**
 - G.1 Section I – Financial Capacity 37
 - G.2 Section II – Ability to Raise Financing..... 38
- Appendix A – Technical Services Group and Other Key Operator Support Personnel41**
- Appendix B – STES Operating Case Studies44**
- Solar Power Project Projected to Save Town of Gilbert \$2,000,000 Over 20 Years.....45**

Table of Figures

- Figure 1: Proposer Structure 1

The information contained in this document is proprietary and contains confidential information which is of significant economic value to Access Capital Advisers, Severn Trent Environmental Services, Inc. and Energy & Infrastructure Partners. It is intended to be used only for valuation of our qualifications to provide services. It should not be duplicated, used or disclosed in whole or in part for any purpose other than to evaluate this submittal.



Figure 2: Severn Trent's US Locations 7
Figure 3: Severn Trent's Organizational Structure 8
Figure 4: STES Legal Structure 9
Figure 5: Access Infrastructure Direct Investment by Geography 37

Table of Tables

Table 1: List of Current Concession/PPP Assets 11
Table 2: Current Investees with Associated Government Concessions 12
Table 3: Other Current Government Regulated or Long-term Concession Assets 12
Table 4: Comparable Projects Operated By STES 14
Table 5: Table of References 15
Table 6: Table of References (Relevant to P3s and Government Contracts) 16
Table 7: Recent Financing Activity of Access¹ Investees 39



Executive Summary

Access Capital Advisers, Severn Trent Environmental Services, and Energy & Infrastructure Partners are pleased to submit our Statement of Qualifications to the City of Allentown (the City) for a long-term concession lease of the City's Water and Sewer systems.

We believe that the team provides the City of Allentown with a superior long-term financial and operating partner to care for and maintain the City's most valuable asset, Allentown's Water and Wastewater System. Our experience and expertise ideally position us not only to maximize the immediate value to the City but also to operate and invest in this critical infrastructure over the long term.

The team, which brings together complementary experience and skills, is composed of:

- **Access Capital Advisers (Access)** – Access is an infrastructure investment manager with over 16 years' experience and A\$2.3 billion in infrastructure assets under management. Access has significant experience investing in and managing concessions across Australia, the UK and the U.S. Access manages key ownership stakes in two large UK water companies, Thames Water and Southern Water, which on a combined basis provide drinking water to over 10 million customers and wastewater services to over 14 million. Through its management of key local infrastructure – including electricity transmission, regional hospitals, waste recycling and roads – Access recognizes the critical importance of these services to local communities. Access' capital is sourced from a select group of institutional investors that include government, corporate, and industry pension funds in Australia and globally. Access will form and capitalize the Concession;
- **Severn Trent Environmental Services (STES)** – STES is one of the largest water and wastewater service firms in the U.S. that brings the economies of scale, stability, strength, and institutional knowledge of a multi-billion dollar, global corporation focused on water treatment. The company has provided contract operations services in the U.S. continuously for more than 38 years, with contracts covering more than 400 water and wastewater facilities. STES combines global experience and procurement processes with a strong local presence and experience in Pennsylvania. STES operates a number of long-term contracts in the state, and its corporate headquarters are located in Fort Washington, PA. STES will be the provider of operating and maintenance services to the Concessionaire under a long term contract; and
- **Energy & Infrastructure Partners (EIP)** – EIP is an independent infrastructure advisory and investment firm owned by its partners. EIP has an experienced team of infrastructure investment professionals that have executed a large number of successful North American P3 and water transactions. EIP will be engaged as special advisor to the Concessionaire through the RFP process.

We are looking to partner with the City and invest in Allentown's water and wastewater system over the long term. The City has invested significantly in these assets over time, and we are committed to ensuring that these assets continue to promote the economic growth and vitality of the community.

Partnership

The operation and maintenance services of our O&M contractor, STES, are specifically geared toward small- to medium-sized municipalities like Allentown. STES has significant experience providing services



to customers in such towns and cities and appreciates the importance of community. We will strive to become a part of the very fabric of the community and its citizens, with local hiring practices, volunteerism, and sponsorship of local charitable events. Communities like the City of Allentown are our partners, and we value them very highly.

Quality of Service

We bring an operator, STES, who has nearly 400 clients throughout the U.S. and is an industry leader in providing full-service water and wastewater P3s. Professional water and wastewater utility management is STES' core focus, with its high standards reflected in impeccable compliance and safety records. Realizing the importance of tracking and monitoring regulatory compliance, STES has invested significant resources to ensure procedures are in place to comply with regulatory requirements. We will continue to provide the community with exceptional water quality, guarantee compliance with all regulatory and environmental standards, as well as position the assets for compliance with future regulations.

Additionally, we recognize that one of the most important aspects of successful utility operations is strong communications and customer relations. Customer service employees will receive special training on the handling of customer complaints and requests. They will be able to accurately and quickly answer questions and address customer concerns in a satisfactory manner. Additionally, once a customer's issues have been heard, proper procedures will be followed until the customer's problem has been resolved.

Employee Transition

We are sensitive to issues and concerns of the existing facility employees when there is a transfer of ownership. More importantly, they are members of the community we will serve. We recognize that the current employees bring invaluable historical knowledge of the facilities, and it has been our experience that transitioning existing employees minimizes operational disruptions. Beyond that – and most importantly from a human resourcing perspective – it provides employees continued employment (subject to normal hiring practices).

Our goal is to keep existing employees whole and without fear of losing their jobs. Because any change of employer can be stressful, our transition approach focuses on reducing this stress and gaining the commitment of all employees. This approach maximizes the interaction of the employee and family with Severn Trent's technical and administrative support who will be dedicated to the project. Employees will have an opportunity to meet with others who have been through a transition to understand the benefits and opportunities offered by Severn Trent. This process is intended to ease fears of the unexpected and allow the employee to remain focused on their careers.

Our greatest asset is the employees who come to work each day and invest their time in the successful administration of their assigned duties. It is our responsibility to provide the proper training, leadership, and support, as well as establish and implement proper procedures that allow employees to fulfill their role. It is our goal to provide a quality staff that has the expertise to meet the full needs of the City.

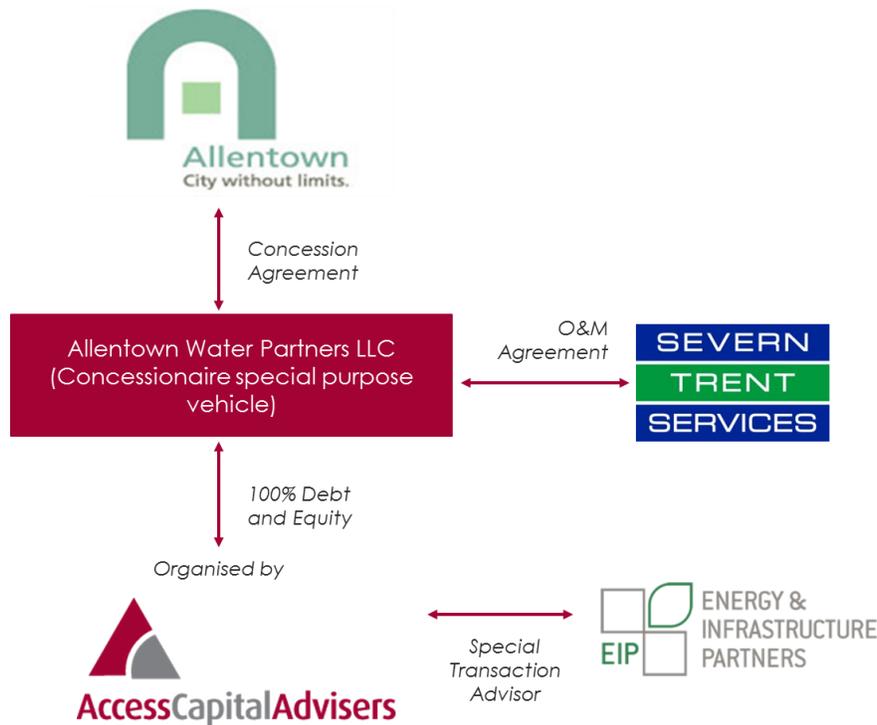
E. Proposer Information

E.1 Section I – Description of Prospective Proposer

I. *Description of Prospective Proposer: Provide a description of the team, including a description of all team members and the anticipated legal relationship (governance and capital structure) among the team members (e.g., partners, shareholders, members, operators, subcontractors, etc.) as appropriate. All equity investors should be identified.*

The three key parties jointly completing this submission are Access Capital Advisers ('Access'), Severn Trent Environmental Services ('STES') and Energy & Infrastructure Partners ('EIP').

Figure 1: Proposer Structure



The Proposer is Access Capital Advisers, which would form the Concessionaire and capitalize this with equity from its capital under management. The Concessionaire would contract Severn Trent Environmental Services to operate the Concession Assets. Access Capital Advisers would engage Energy & Infrastructure Partners as a special transaction advisor during the due diligence phase of the RFP process.

- **Proposer – Access Capital Advisers.** A corporate entity (Concessionaire) would be formed to enter into the Concession Agreement, provide the upfront payment to the City, enter various



corporate agreements (such as an Operations and Maintenance Agreement), issue debt, etc. 100% of the equity of the Concessionaire will be provided from fund sources managed by Access. Access manages infrastructure portfolios on behalf of several large pension funds, predominantly from Australia, through long-term, evergreen, investment management agreements. Access has considerable experience completing and managing concession investments over a long period of time.

- **Operator – Severn Trent Environmental Services.** The Concessionaire would enter an Operations and Maintenance Agreement with Severn Trent Environmental Services. STES would provide operation and maintenance of the City's water and sewer systems following an efficient, timely and seamless transition of services from the City. STES would implement a highly focused customer service program including improvements and enhancements; and assure customer safety, security and environmental compliance. Based on its experience and expertise, STES can undertake necessary and required capital improvements and offer other system enhancements based on its demonstrated knowledge of technologies.
- **Special Transaction Advisor – Energy & Infrastructure Partners.** Energy & Infrastructure Partners would be engaged by Access to provide assistance in relation to the transaction/RFP process. EIP would not be an equity investor at Closing and is not expected to have any direct contractual relationship with the City or the Concessionaire. EIP has an experienced team that has executed a large number of transactions, including successful North American P3 and water transactions.

About the Parties

Access Capital Advisers (www.accesscapitaladvisers.com)

Access has over 16 years of experience as a leader in specialist investment management of infrastructure and other alternative assets. Its focus is on building and managing quality portfolios that meet its investors' strategic needs. Access' capital under management is sourced from a select group of institutional investors that include government, corporate, and industry pension funds in Australia and globally.

With five offices across three continents, Access is one of the world's largest infrastructure managers and has:

- A\$2.3 billion in infrastructure assets under management; and
- A\$3.2 billion in alternative assets under management.

Access currently manages direct investments for its investors in 26 major global infrastructure assets.

Access is an independent firm, owned by a leadership team whose members, on average, have around 20 years relevant experience. The firm's 62 staff members are located in London, New York, Sydney, Melbourne and Canberra with expertise across the skill set required for managing infrastructure portfolios, including; company management, investment management and advisory, investment execution, investment banking, and asset management. This breadth of skills and experience gives the firm a distinct advantage over competitors in identifying and realizing untapped value in assets.



Severn Trent Environmental Services (www.severntrentservices.com)

Severn Trent Services is a global supplier of water and wastewater solutions. The company offers a broad range of products and services concentrated around water, including contract operating services, disinfection, instrumentation and filtration technologies, and analytical services.

Severn Trent Environmental Services (STES) has provided contract operations services in the U.S. continuously for more than 38 years. The company's predecessors date back to the 1970s, and the company has built upon this experience since incorporation in Texas in 1983. Since that time, STES has grown its presence in the U.S. and has expanded its operations through additional acquisitions and business development activities. STES currently provides contract operations in 22 states and continues to grow to serve clients in additional states each year.

Severn Trent Services, the parent corporation of STES, is headquartered in Fort Washington, Pennsylvania, USA, and is a leading global supplier of water and wastewater solutions employing more than 2,900 personnel.

Energy & Infrastructure Partners (www.energyinfrapartners.com)

Energy & Infrastructure Partners (EIP) is an independent infrastructure advisory and investment firm owned by its partners, focused on middle-market opportunities in North America. EIP has an experienced team of professionals who have executed transactions of various sizes and complexity, with over \$10 billion of completed infrastructure investment including successful North American P3s and water. Given the team's long careers in the U.S. municipal sector, they have a deep understanding of the many well-documented economic challenges facing our cities and states and seek to provide creative financial solutions to meet these challenges. EIP is a certified Minority Business Enterprise.

E.2 Section II – Roles of Team Members and Key Personnel

II. Roles of Team Members and Key Personnel: Briefly outline the roles of the team members and key personnel. In doing so, please ensure that all the requirements as detailed in Section 3.1 are addressed.

Access will be responsible for forming the Concessionaire, sourcing 100% of the equity of the Concessionaire, and managing the shareholder position of the Concessionaire. It is envisaged that the Concessionaire would be created as a corporate entity that would be governed by a shareholder-appointed Board and would have a corporate management team to manage the day-to-day affairs of the Concessionaire.

STES would be contracted by the Concessionaire through an Operations and Maintenance (O&M) Agreement to operate the Concession Assets.

Prior to the award of the Concession, Access would work seamlessly with STES and EIP through the RFP process to complete all necessary due diligence on the Concession Assets and the Concession Agreement, form a binding proposal for the consideration of the City, and work with the City and its advisors to negotiate final agreements and close the transaction.

- The engagement with STES through the due diligence process would assess the technical aspects of the Concession Assets, assess the operating aspects of the Concession Agreement,



negotiate an Operations and Maintenance Agreement, and develop operating plans (including health and safety plans) to ensure that all technical/operating obligations under the Concession Agreement are exceeded.

- The engagement with EIP through the due diligence process would focus on a financial and risk assessment of the transaction, the contractual arrangements of the project, and the capital structure of the Concessionaire.

Post the award of the Concession, the key counterparty of the City would become the Concessionaire. The Concessionaire would be resourced with a qualified management team that would oversee operations, including oversight of the performance of STES against the O&M Agreement, ensuring compliance with the Concession Agreement, maintaining company accounts and records, interfacing with stakeholders including the City, etc. The Concessionaire would be governed by a shareholders agreement and a Board. The Board would consist of shareholder representatives (which would include employees of Access) and other appropriately qualified independent members. Access would continue to oversee the Concessionaire as an active investment manager of the shareholding, ensuring that the Concessionaire had the ongoing support of its shareholders.

Through the O&M Agreement with the Concessionaire, STES would assume the functions for the operations and maintenance of the Concession Assets, for public safety/security, as well as for customer service and collections (as applicable). It is expected that the O&M Agreement would have provisions that closely mirror the provisions of the Concession Agreement in terms of quality of service, technical standards, and other operating/maintenance performance standards.

Key Personnel – Access Capital Advisers

Tom Maher, *Joint Head of Americas*, would lead the transaction effort through the RFP process and post-completion by acting as the key contact with the City and its advisors and coordinating with STES and EIP. Mr. Maher is an experienced manager of infrastructure investments, having managed investments across both Australia and the U.S. Prior to relocating to New York, he was responsible for managing investments in two Australian airports, Brisbane and Adelaide, as well as for managing the operations of a large commercial office development in Brisbane. In addition, Mr. Maher led the development and implementation of Access' proprietary risk management framework utilized in the construction of specialized alternative asset portfolios. In the U.S., Mr. Maher has served as a Director on the Board of Duquesne Light Holdings. Duquesne Light Holdings, a regulated electricity transmission and distribution utility headquartered in Pittsburgh, serves just under 600,000 customers in south western Pennsylvania.

Andrew Cunanan, *Joint Head of Americas*, would be devoted to working on the transaction through the RFP process. He joined Access in early 2001 and established the European presence of Access in 2006. As Head of Access' European office, he drove the sourcing, due diligence, completion, and ongoing management of multiple infrastructure investments. He is now responsible for these activities in the Americas.

In 2006, he worked on the acquisition of Thames Water, the largest water and wastewater company in the UK. Access was responsible for the second largest shareholding group in Thames Water, and Mr. Cunanan oversaw the ongoing management of this shareholding. In 2007, he worked on the acquisition of Southern Water, another of the UK's largest water and wastewater companies. He oversaw the ongoing management of this asset and served on the Board. He was also involved in the acquisition and ongoing management of several companies in the UK transport sector that held



concessions with government authorities, including for the provision of trains/rolling stock (Angel Trains - where he served as a Director), bus services, ferry services and motorway services.

Mr. Cunanan became the head of the New York office of Access in 2010. He has assessed several investment opportunities in the U.S. with PPP/concession arrangements as well as several in the water sector. He is responsible for managing the majority equity position in Smarte Carte, where he also serves as Chairman of the Board. Smarte Carte is the leading operator of baggage cart services through concession arrangements with numerous U.S. and international airport authorities.

Charles Ridler, *Senior Associate*, would be devoted to working on the investment. Mr. Ridler has significant deal execution, origination, and strategic expertise, having worked on acquisitions, divestments, capital structuring, and asset management within both the infrastructure and property groups. Mr. Ridler currently covers assets across the port and structured finance sectors. Prior to joining Access, he worked in the Investment Banking Division at Citi, covering financial institutions, resources and infrastructure, where he was involved in over \$2 billion of M&A transactions and over \$4 billion of capital raisings.

Access would also draw on other members of its team as appropriate.

Key Personnel – Severn Trent Environmental Services

Jeff Doutrich, *Regional General Manager*, would oversee both the technical and commercial aspects of the O&M side of the project and assist with long-range capital planning. He would ensure that on-site staff and resources are sufficient to fulfill all O&M commitments and achieve the City's objectives. He understands that a critical success factor is the commitment of STES to provide the tools, training and incentives to employees for their continued development. He has approximately 35 years of treatment facility experience, having previously served as a plant operator, assistant manager, and coordinator of laboratory services.

Rita Varona, *Regional Operations Support Manager*, is responsible for customer service, meter reading, and billing/bill printing. She has nearly 35 years of experience in the utility system operations, customer accounting and customer service management, meter reading, and human resources disciplines.

Chris Morss, *Vice President Business Development*, has 30 years of business development, operations and general management experience in the environmental services market. He was recruited into the Severn Trent organization to provide a hands-on, focused leadership to managing the financial growth and revenue development of the company. Mr. Morss manages strategic and day-to-day sales and marketing activities and has overall responsibility for business development and strategic growth. He holds a B.S. in biological sciences.

Dana Kaas, *Vice President of Operations*, has 25 years of experience in the environmental services industry and more than 30 years of general management experience. He joined the Severn Trent organization to provide a hands-on, focused effort to managing the operations and, in this capacity, he is directly responsible for the activities and operations at Severn Trent's more than 400 contract operations projects.

Tom Gordon leads the Technical Services Group, which is responsible for providing support services to all Severn Trent projects that include process troubleshooting, process optimization, contract review, operating procedures, regulatory compliance, customer service, and project transition. He has more than 35 years of project management experience in the areas of environmental assessment, wastewater treatment, waste management and systems analysis. He has particular expertise in the areas of water and wastewater operations, wastewater process control, municipal utilities management, and land use planning. He has served as Project Manager where the company



provided operations assistance at several major municipal wastewater treatment facilities, plant assessments for treatment facilities, startup and commissioning assistance for a variety treatment plants including a 200 MGD advanced treatment facility and municipal planning projects. His most significant experience was serving as the Operator of Record for the Gary (Indiana) Sanitary District while its 60 MGD facility was operating under a court-ordered consent decree under the direct supervision of a federal judge.

Further information of the Technical Services Group and key Technical Support Staff is provided in Appendix A.

Key Personnel – Energy & Infrastructure Partners

Renwick Paige, *Founding Partner and President*, has spent over 28 years in infrastructure finance and private equity. He led transportation, utility, and education financings at Lehman Brothers and launched the project finance and air cargo product lines for Financial Guaranty Insurance Company (GE Capital). He led the Acquisitions Department at U.S. Water and also worked at JP Morgan. Mr. Paige is a board member of New York City Energy Efficiency Corporation, a public private partnership that invests in energy efficiency investment in New York City buildings. He received a J.D. from University of Pennsylvania Law School and also attended Wharton Graduate School and received a B.A. from Amherst College.

Robert Lawsky, *Partner*, served as General Counsel for Macquarie Infrastructure Partners I and II. He played an integral role in structuring the acquisition, financing, and management of 13 infrastructure companies including five U.S. closed P3 transactions and a water company acquisition with an EV of almost \$1 billion. At AT&T, he served as Senior Counsel–Head of International M&A Legal. Prior to joining AT&T, he practiced in the M&A groups at Skadden, Arps, Slate, Meagher & Flom and at Haight, Gardner, Poor & Havens. He received a J.D. from Boston University School of Law and a B.A. from Amherst College.

Dana Sands, *Partner*, has spent her career in the infrastructure and renewable energy industries. Most recently, she was CFO and Director of Origination for Alinda Capital Partners, one of the largest energy and infrastructure private equity funds. Prior to that, she was COO of Evolution Markets, a renewable energy financial firm. She also covered the power industry at Morgan Stanley and public infrastructure finance at both Morgan Stanley and Lehman Brothers. Ms. Sands, a CPA, received two graduate degrees at the New York University Stern School of Business and a B.A. from Yale University.

E.3 Section III – Operator

III. Operator: Specifically identify the entity or entities that will act as operator of the Concession Assets under the proposed Concession.

Severn Trent Environmental Services would enter an Operations and Maintenance Agreement with the Concessionaire to act as operator of the Concession Assets. STES is a Texas corporation incorporated June 30, 1983 with Tax I.D. #62-1168252.

STES is a global supplier of water and wastewater solutions. The company offers a broad range of products and services concentrated around water including contract-operating services, disinfection, instrumentation and filtration technologies, and analytical services.



Severn Trent Plc, formed in 1974, treats and provides water and treats wastewater in the UK and internationally, through two complementary businesses – Severn Trent Water and Severn Trent Services. (See Figure 3 below for a more detailed explanation of Severn Trent's organizational structure.)

Severn Trent Water is one of the largest of the 10 regulated water and sewerage companies in England and Wales. It provides high quality services to more than 4.2 million households and businesses in the Midlands and mid-Wales, in the watershed areas of two of Britain's greatest rivers – the Severn and the Trent, from which the company adopted its name.

Following privatization from the UK government in 1989, Severn Trent set out on a path to build a products and services business – Severn Trent Services – based on its expertise in water, wastewater and environmental protection. Building the company involved acquisitions in the U.S. and UK that began in 1990 and has grown to a comprehensive portfolio of products designed to analyze, treat, measure, deliver and protect our valuable water resources (see Figure 2).

STES has provided contract operations services in the U.S. continuously for more than 38 years. Building upon the experience of its predecessors, which dates back to the 1970s, the company was incorporated in Texas in 1983. Since that time, STES has grown its presence in the United States and has expanded its operations through additional acquisitions and business development activities. STES currently provides contract operations in 22 states and continues to grow to serve clients in additional states each year.

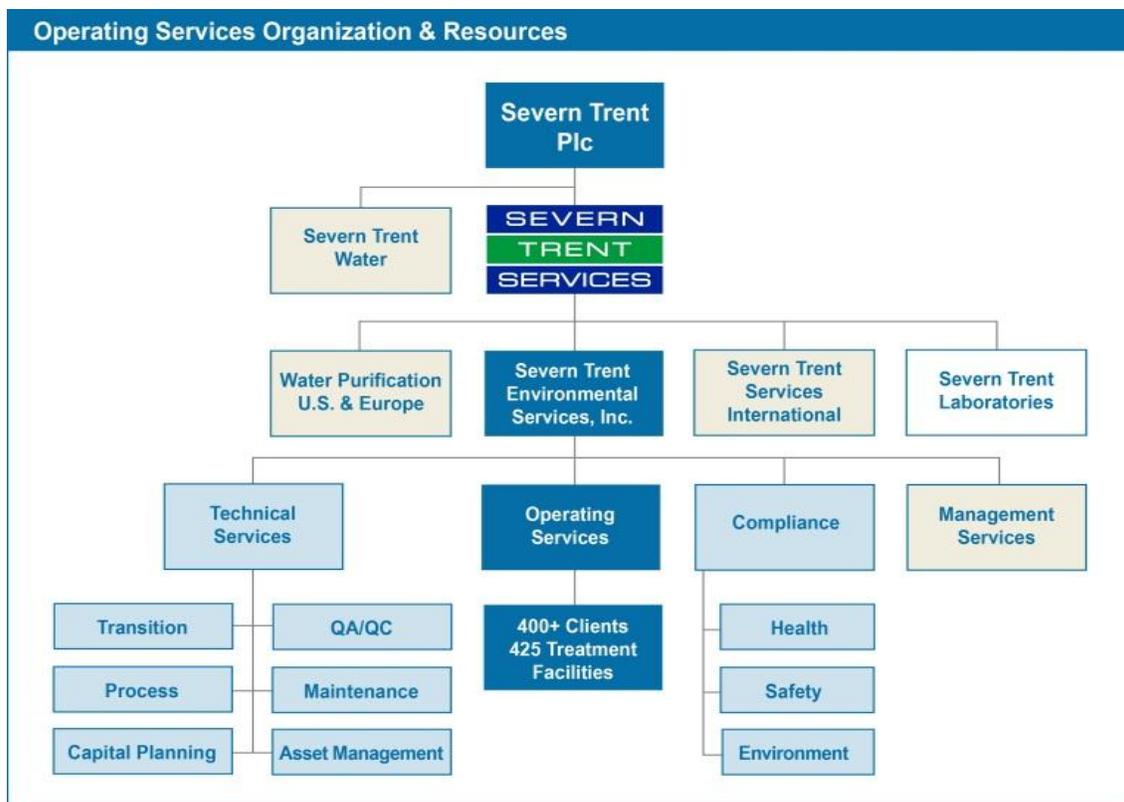
Severn Trent Services, STES' parent corporation headquartered in Fort Washington, Pennsylvania, USA, is a leading global supplier of water and wastewater solutions employing more than 2,900 personnel. The company's broad range of products and services is concentrated around disinfection, instrumentation and filtration technologies and contract operating services. Its operating services business provides contract management, operations support, and systems improvements for utility, industrial, and commercial water and wastewater customers in the U.S., UK, Ireland and Italy.

Combined, the Severn Trent Plc group of companies employs over 8,000 people and comprises the fourth largest water and wastewater treatment utility in the world, operating nearly 2,500 facilities and serving more than 20 million customers worldwide.

Figure 2: Severn Trent's US Locations



Figure 3: Severn Trent's Organizational Structure



E.4 Section IV – Contact Person

IV. *Contact Person: Provide a single contact person for all future communication between ALLENTOWN and the Prospective Proposer. Please identify the contact person's name, title, organization, address, telephone number, fax number, and email address.*

Tom Maher – Joint Head of Americas

Access Capital Advisers
 30 Rockefeller Plaza, 54th Floor, Suite 5440
 New York, NY 10112
 Telephone: +1 212 373 1100
 Fax: +1 212 373 1101
 Email: Tom.Maher@AccessCapitalAdvisers.com

E.5 Section V – Controlling Interest

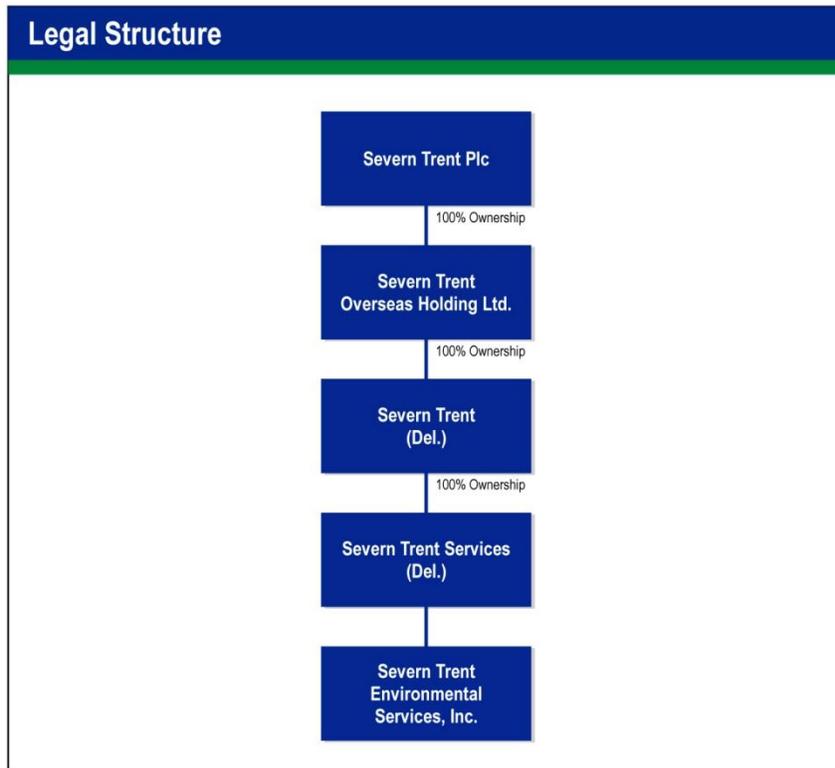
V. *Controlling Interest: Identify the individuals or companies who hold a major or controlling interest in each team member.*

Access Capital Advisers would not be a direct equity investor to the Concessionaire. As with all of the investments completed by Access since its foundation, the underlying equity investors would be large pension funds with which Access has entered long-term, evergreen, investment management agreements.

For interest, Access is wholly owned by its employees as listed on the following website: (<http://www.accesscapitaladvisers.com/team.html>).

Severn Trent Environmental Services, Inc. (STES) is a wholly-owned subsidiary of Severn Trent Services (Del), Inc. Severn Trent Services (Del), Inc. is wholly-owned by Severn Trent (Del), Inc., which is completely owned by Severn Trent Overseas Holdings Ltd. Severn Trent Overseas Holdings Ltd in turn is completely owned by Severn Trent Plc (a FTSE 100 company listed on the London Stock Exchange). Figure 4 below illustrates these relationships.

Figure 4: STES Legal Structure



STES001



E.6 Section VI – Expected Advisors

VI. *Expected Advisors: Identify the companies and individuals who are expected to act as legal, financial, or other advisors for the team.*

The Proposer has identified Energy & Infrastructure Partners as a Special Transaction Advisor for the project (as outlined above), together with Lawrence Chertoff.

Lawrence Chertoff, *Consultant*, is a former director at Alinda Capital Partners, one of the largest energy and infrastructure private equity funds. He has more than 35 years' experience fostering constructive cooperation between the private sector and municipalities. He has researched and developed water, solid waste, and distributed energy projects. Much of his early experience was gained at the City of New York.

As a consultant to systems manufacturers, Mr. Chertoff directed government relations, market planning, and project development for full service, waste-to-energy projects, transfer stations and materials recovery facilities serving county and municipal agencies. He has been retained by international water/wastewater service companies and manufacturers of wastewater-related equipment such as sludge dewatering and drying, materials handling, vacuum wastewater collection systems, and package wastewater treatment facilities. Among his clients are The American Forum for Global Education, Black & Veatch, HDR, Medcalf & Eddy consultants, Archaea Solutions organic wastewater sludge reduction system, water/wastewater treatment facility development in The People's Republic of China, and has been U.S. correspondent to Global Water Intelligence, Oxford, UK and approximately 20 capital management firms.

Mr. Chertoff has been an advisor to the NYC Comptroller on watershed protection issues and to the NYC Office of the Public Advocate. He currently advises several New York City not-for-profit organizations. He was a founding Board member of the Environmental Action Coalition, Water Industry Council and Water Institute of the National Council for Public Private Partnering, a former director of the New York League of Conservation Voters and a member of the National Research Council's Water and Technology Board, Committee on Privatization of Water Services in the United States. He has authored and co-authored several books and many publications on private operations of municipal services. In 2009 in Zurich, Switzerland, former U.S. Vice President Al Gore awarded Mr. Chertoff the Global Water Intelligence Award of Distinction for water Deal of the Year for Alinda's Santa Paula, California, wastewater recycling facility. Mr. Chertoff received a MA, Economics with Honors, at the New School for Social Research, Graduate Faculty and attended a MA program at Hunter College, CUNY and received a BA from New York University.

The Proposer would expect to appoint other advisors during the RFP process and would complete a conflict check at the time of such appointment. The Proposer would expect to appoint advisors that covered several relevant areas including Legal, Debt Advisory, Accounting/Tax, Engineering, and Environmental. The list, identity, and scope of advisors would be subject to change depending on the form of the RFP.

E.7 Section VII – Comparable Projects

VII. *Comparable Projects: Provide a list of comparable projects in which team members have participated. Prospective Proposers should specify how these comparable projects relate to the proposed Concession, their specific role(s) on these other projects, and the extent to which team members have worked together in prior projects.*

Access has driven investment in several public private partnerships at the time of original concession. Access has also completed investments in companies post the award of the original concession. Several investee companies of Access have also procured government concessions post initial investment.

Access has a long history and extensive experience of completing concession and public-private partnership projects. Table 1 lists the concession/PPP projects in which Access currently manages equity investments. Access was involved at the outset of all of these projects through the selection process, negotiating concession documentation, arranging financing, and reaching financial close. Access has continued to manage the equity interests in these concession projects. Similar to the current proposed Concession, each of these projects involved negotiations with a government authority (state government, city/district government or other public authority). Also similar to the current proposed Concession, Access successfully partnered with third party commercial operators for the ongoing delivery of each of these projects.

Table 1: List of Current Concession/PPP Assets

Project	Sector	Country	Stake	Investment Year	Involved at Time of Original Concession
Rowville Transmission Facility	Electricity Transmission	Australia	100%	2000	Yes
Mildura Base Hospital	Regional Hospital	Australia	100%	2001	Yes
Parramatta Police Project	Government Real Estate (Police Headquarters)	Australia	100%	2002	Yes
BioVision	Waste	Australia	70.0%	2007	Yes
Peninsula Link	Road	Australia	66.6%	2010	Yes

Access has also managed investments in a number of businesses where the core focus is to compete for, or service, public concessions. Table 2, below, shows a current list of these investees. Access is an active investment manager of these shareholdings through regular interaction with company management (including in relation to assessing and approving bids on key concessions) and serving on company Boards. In the U.S., Access manages a majority position in Smarte Carte – a concession business that contracts with major airport authorities for the provision of baggage cart services. Andrew Cunanan is the current Chairman of Smarte Carte. When previously located in the UK, he was involved in other similar concession-type businesses in the rail sector (such as Angel Trains, for which he served on the Board) and Moto Hospitality.

Table 2: Current Investees with Associated Government Concessions

Project	Sector	Country	Stake	Investment Year
Smarte Carte	Baggage Carts	U.S.	77.9%	2006
Angel Trains	Trains (Rolling Stock)	UK	10.9%	2008
International Parking Group	Hospital Carparks	Australia	62.5%	2003
Moto Hospitality	Motorway Services	UK	30.2%	2006

Table 3, below, provides a broader list of investments managed by Access that have close public sector engagement either through very long-term concession arrangements or as closely regulated assets. Access manages an investment in Duquesne Light in Pennsylvania for which Tom Maher has been an active Board member. Access also manages major investment positions in two large water and wastewater companies in the UK (Thames Water and Southern Water). Andrew Cunanan was directly involved in the acquisition and ongoing management of these positions, during which he served on the Board of Southern Water. Access has obtained solid investment knowledge of water and wastewater assets through the acquisition and ongoing management of these investments.

Table 3: Other Current Government Regulated or Long-term Concession Assets

Project	Sector	Country	Investment Year
Duquesne Light	Electricity Transmission	U.S.	2006
Thames Water	Water/Wastewater	UK	2006
Southern Water	Water/Wastewater	UK	2007
Arqiva	Broadcasting/Telecom Towers	UK	2004
Sydney Airport	Airport	Australia	2002
Brisbane Airport	Airport	Australia	2000
Perth Airport	Airport	Australia	2003
Flinders Ports	Port	Australia	2001
DCT Gdansk	Port	Poland	2005
AirTrain Citylink	Transport	Australia	2008
Etihad Stadium	Stadium	Australia	2006

Members of EIP, the Special Transaction Advisor, together with Lawrence Chertoff, have considerable experience with comparable projects.

- Renwick Paige was Member of Investment Committee of U.S. Water LLC (1996-1998). He led Project Finance, including the Underwriting Committee, and was also a Voting Member of the four-person Executive Committee at U.S. Water, a pledge fund that was a division of the United Infrastructure Company. After approving these transactions, Mr. Paige was then responsible for championing these transactions to the respective investment committees of each of the



pledged investors. During his tenure at U.S. Water, the company committed to underwriting several water concessions, including: Easton, PA (10-year concession for managing the water and wastewater systems); North Brunswick, NJ (20-year concession for managing the water system); Springfield, MA (20-year concession for managing the 29 MGD wastewater treatment plant with \$10 million of capital improvements); and Camden, NJ (20-year concession for managing the water system with \$20 million of capital improvements).

- Robert Lawsky, while Lead Transaction Counsel at Macquarie Infrastructure Partners (MIP), structured, negotiated, and jointly approved comparable transactions. In the water sector, these included Aquarion Company, the 2007 acquisition of a regulated water utility in New England with transaction enterprise level of \$913 million. P3 transactions included: Chicago Skyway (2006 acquisition of a 23% interest in the Chicago Skyway, a toll road located in Illinois, for \$178 million); Indiana Toll Road (2006 acquisition of a 25% interest in toll road located in Indiana, for \$198 million); Dulles Greenway (2006 acquisition of a 50% interest in the Dulles Greenway, a toll road located in Virginia, for \$355 million); South Bay Expressway (2007 acquisition of a 50% interest in the South Bay Expressway, a toll road located in California, for \$141 million); and A-25 Completion Project (2008 acquisition of a 35-year concession to develop the A-25 toll road in Montreal, Canada, for \$256 million. Final round, though unsuccessful, consortium bids included Penn Turnpike, Midway Airport and Chicago On-Street Parking.
- Dana Sands and Lawrence Chertoff, while at Alinda Capital Partners, closed an investment in Santa Paula Water in \$24 million in 2008. Santa Paula Water is a wastewater treatment facility located in Santa Paula, CA. The transaction was a first-of-a-kind P3 in wastewater under a law in California and is the only wholly privately owned wastewater recycling facility for the exclusive use of a municipality. Santa Paula Water, LLC, has a 30-year concession to own and operate a wastewater treatment facility for the City of Santa Paula with a population of 29,000. Alinda partnered with Pacific Environmental Resources Corporation, which designs, builds and operates wastewater treatment plants in California, Arizona, and New Mexico. The facility was completed on budget and three months ahead of schedule. It has operated in compliance with all contract specifications. The monthly cost to Santa Paula of wastewater treatment is less than the average cost of complying wastewater recycling facilities in California financed through traditional public debt. The facility has won awards for design, construction and operations from national engineering and civic groups.
- Ms. Sands also led Alinda's team in the pursuit of one of Florida's largest and most prominent P3s in 2009. She pulled together the consortium, including the due diligence process and submitted a binding bid for the assets. While at Alinda, Ms. Sands lead the P3 team on several potential parking transactions including Chicago Parking Meters, Los Angeles Parking Meters and Pittsburgh Parking. Ms. Sands worked in the municipal utilities group at Morgan Stanley from 2000-05. At Morgan Stanley, she conducted water and wastewater financings for Hamilton Ohio, Findlay Ohio and Los Angeles Water and Power. In addition, she led the team that issued more than \$700 million in water and wastewater tax-exempt bonds.
- Mr. Chertoff was also active as a Director in Alinda's team, considering other water and wastewater investments including the acquisition of South Staffordshire Water Company, a private water supply company in the UK with over 1.5 million customers. He participated in the equity and debt financing of other environmental public-private partnerships including Source Gas in Ontario, Canada, and American Roads in Alabama.

With nearly 400 clients throughout the U.S., STES is an industry leader in providing professional water and wastewater utility management services. STES' comparable projects are outlined in Table 4.

Table 4: Comparable Projects Operated By STES

Client	Wastewater Treatment	Water Treatment	Customer Service	Project Scope	Contract Start
Bristol, TN	■			15 MGD wastewater system, 32 pump stations (trickling filter, conventional activated sludge, tertiary treatment)	2007
Cinco MUD #1 (Master District), TX	■	■		4.21 MGD wastewater system, 20.44 MGD water system, 11 wells, 8 pump stations, collection and distribution systems, meter reading (trickling filter, conventional activated sludge, tertiary treatment)	1987
Danville, VA	■			24 MGD wastewater system, 11 pump stations (oxygen activated, recently converted to activated sludge, multiple industrial influents)	2009
Downington, PA	■			7.5 MGD wastewater system (trickling filter, conventional activated sludge, tertiary treatment)	1999
Houston, City of (Kingwood), TX	■	■		11.6 MGD wastewater system, 36.947 water system, 23 wells, 45 pump stations, collection and distribution systems (trickling filter, conventional activated sludge, tertiary treatment)	1997
La Vergne, TN		■		9.8 MGD water system	2007
Newburgh, NY	■			13.5 MGD wastewater system (fine bubble diffusion, conventional activated sludge, tertiary treatment)	2003
Pasadena, TX	■			21.56 MGD wastewater system	1994
Plaquemines Parish, LA	■	■	■	7.26 MGD wastewater system, 15 MGD water system, 135 pump stations, collection and distribution systems, customer service (trickling filter, conventional activated sludge, tertiary treatment)	1998
TOHO Water Authority (Poinciana), FL			■	Customer service	1999
West Travis County Public Utility Agency, TX	■	■	■	6.75 MGD wastewater system, 20 MGD water system, meter reading, customer service (trickling filter, conventional activated sludge, tertiary treatment)	2012

Appendix B provides full case studies of the operations of STES.

E.8 Section VIII – References

VIII. *References: Provide a list of team member references. Include each reference's organization, title, e-mail and phone number. These references should be able to describe the relevant qualifications and capabilities of each team member seeking to take leading roles in the governance, operations, and maintenance of the Concession Assets.*

Table 5: Table of References

Reference	Contact Details and Notes	Relevant Team Member
Rich Riazzi, President & CEO, Duquesne Light	E-mail: RRiazzi@duqlight.com Telephone: 412-393-1150	Access – Tom Maher
Ed Rudis, CEO, Smarte Carte, Inc	E-mail: rudise@smartecarte.com Telephone: 651-653-3059	Access – Andrew Cunanan
Keith Budinger, Investment Advisor, Autilia	E-mail: keith.budinger@autilia.com Telephone: 630-926-7176	Access – Andrew Cunanan
Scott Miller, CEO, SSA & Company (formerly CEO of United Infrastructure Company)	E-mail: smiller@6-sigma.com Telephone: 970-544-9300 or 212-332-3790	EIP – Renwick Paige
Robert Gonzales, Mayor, City of Santa Paula	E-mail: bob_gonzales@msn.com Telephone: 310-865-1425	Larry Chertoff
Barry Dunkley, Director of Water & Wastewater, (Danville, VA)	E-mail: dunklbt@ci.danville.va.us Telephone: 434-799-6473	STES
Mark Horn, Wastewater Superintendent (Gilbert, AZ)	E-mail: markh@ci.gilbert.az.us Telephone: 480-503-6420	STES
Darrin Gordon, General Manager, Lewes Board of Public Works (DE)	E-mail: dgordon@ci.lewes.de.us Telephone: 302-645-6228	STES
Craig Marti, City Engineer (Newburgh, NY)	E-mail: cmarti@cityofnewburgh-ny.gov Telephone: 845-569-7446	STES



Reference	Contact Details and Notes	Relevant Team Member
Andy Helms, Director of Financial Planning (Pasadena, TX)	E-mail: ahelms@ci.pasadena.tx.us Telephone: 713-475-7254	STES
Herb Mays, PE Executive Director Downingtown Area Regional Authority	E-mail: daraherb@verizon.net Telephone: 610-269-4084	STES

E.9 Section IX – Additional References

IX. Provide at least three references, if available, in which the team or team members have experience with public-private partnerships or long-term management contracts with government entities. Include each reference's organization, title, e-mail and phone number.

Table 6: Table of References (Relevant to P3s and Government Contracts)

Reference	Contact Details and Notes	Relevant Team Member
Ed Rudis, CEO, Smarte Carte, Inc	E-mail: rudise@smartecarte.com Telephone: 651-653-3059	Access – Andrew Cunanan
Scott Miller, CEO, SSA & Company (formerly CEO of United Infrastructure Company)	E-mail: smiller@6-sigma.com Telephone: 970-544-9300 or 212-332-3790	EIP – Renwick Paige
Robert Gonzales, Mayor, City of Santa Paula	E-mail: bob_gonzales@msn.com Telephone: 310-865-1425	Larry Chertoff
Barry Dunkley, Director of Water & Wastewater (Danville, VA)	E-mail: dunklbt@ci.danville.va.us Telephone: 434-799-6473	STES
Mark Horn, Wastewater Superintendent (Gilbert, AZ)	E-mail: markh@ci.gilbert.az.us Telephone: 480-503-6420	STES
Darrin Gordon, General Manager, Lewes Board	E-mail: dgordon@ci.lewes.de.us	STES



Reference	Contact Details and Notes	Relevant Team Member
of Public Works (DE)	Telephone: 302-645-6228	
Craig Marti, City Engineer (Newburgh, NY)	E-mail: cmarti@cityofnewburgh-ny.gov Telephone: 845-569-7446	STES
Andy Helms, Director of Financial Planning (Pasadena, TX)	E-mail: ahelms@ci.pasadena.tx.us Telephone: 713-475-7254	STES
Herb Mays, PE Executive Director Downingtown Area Regional Authority (Downingtown, PA)	E-mail: daraherb@verizon.net Telephone: 610-269-4084	STES



F. Technical Capability

F.1 Section I – Operations and Maintenance Expertise

- I. *Operations and Maintenance Expertise: Prospective Proposers must provide evidence demonstrating their ability to operate and maintain facilities similar to the Concession Assets. Specifically, Prospective Proposers should have:*
- a. *substantial water and sewer facility maintenance and operation experience.*
 - b. *advanced knowledge of water and sewer facilities maintenance, repair, construction, and practical application of equipment and materials in water and sewer facility operations.*
 - c. *demonstrated understanding in water and sewer facility aging behavior to assess and determine the applicability of remedial maintenance action.*
 - d. *all the capabilities necessary to successfully operate and maintain the Concession Assets including water and sewer fee management and operations, administration, marketing and public relations.*

The Proposer will draw on the considerable operations and maintenance expertise of Severn Trent Environmental Services to operate and maintain the facilities. From a financial investor perspective, the Proposer has significant experience teaming with operators in public-private partnerships and concession projects. The Proposer also has significant experience in the water and wastewater sectors through active investment management and Board representation on companies in these sectors.

Severn Trent

STES is one of the largest water and wastewater service firms in the United States with a strong presence in the Mid-Atlantic. Its 1,400 professionals are responsible for nearly 400 contracts that encompass more than 400 water and wastewater facilities. In operating, maintaining, servicing and managing public service facilities, Severn Trent has become recognized as a leader in providing cost-effective operations while ensuring the highest level of service and regulatory compliance.

STES brings the stability, strength and institutional knowledge of a multi-billion dollar, global corporation focused on water treatment. Severn Trent applies the experience and expertise of the international company through a team of empowered local managers with a strong commitment to their clients and an attention to detail. With each client, the company strives to form a partnership working toward a goal of safe, compliant and efficient operations.

STES' philosophy of enhancing its clients' existing resources has enabled it to provide improved service quality to growing communities at lower costs for 38 years. Severn Trent's success can be verified through an uncommonly long reference list of clients – and the enthusiasm of its employees – around the globe. The company's dedication to innovation, efficiency and high quality creates the perfect combination for optimally managing facilities.

STES' underlying operating principles are to build its business by developing partnerships based on trust and striving to meet the same goals as its customers. Partnerships develop when two parties bring



together resources to achieve a common goal – to provide water and wastewater service that is safe, compliant, and cost effective. The community provides the investment in facilities and sets the level of service expected. Severn Trent provides the experience and expertise. A long-term partnership develops from the trust partners develop in working toward the common goal. Severn Trent strives to make every client relationship a trusting partnership.

A key tool STES brings to the partnership is asset management whether the asset is aged, as is typical, or new. It strives to maximize the utilization of the existing assets and extend their life through proper maintenance. It evaluates the condition of the assets and projects their life and eventual replacement cost to provide the owner with planning and budgeting tools. When a performance issue is encountered, STES' first choice in addressing the issue is to find an operational solution through an enhancement or change in the treatment process rather than a capital intensive solution. The experience that comes from over 35 years of experience in managing aged and newly constructed assets, concurrently operating over 450 facilities and being part of an international company focused on water and wastewater, is an invaluable resource in finding and implementing the solution that minimizes the need for capital investment.

A second key tool STES brings to the partnership is employee empowerment. By providing its employees with the training, tools, performance standards and flexibility to do their jobs, STES believes that they can make individual contributions to superior plant performance. For example, under Severn Trent's management approach, all of its employees have responsibility for performing routine maintenance and housekeeping. Not only does this improve the overall efficiency and performance of the operation, it also builds a sense of pride in the facility's operations and helps reinforce the significant relationship between plant maintenance and reliable, efficient operating performance. STES' Technical Service Group is available to all of its projects – at no cost to its clients or the project budget – giving its employees a resource on technical issues. Severn Trent's most important asset is its employees; therefore it strives to provide a challenging and rewarding work environment that enriches job satisfaction and maximizes the potential of each member of its team.

Since Severn Trent Plc originated from the privatization and regionalization of numerous water and wastewater utilities in England, employees had to become accustomed to operating under competitive conditions in a very short time frame. As owners of assets, Severn Trent sought to develop and implement asset management programs to maximize performance and lengthen the lives of existing assets, thus minimizing or avoiding costly capital replacements and upgrades. STES' emphasis on asset management is founded upon Severn Trent Water's experience managing its \$2 billion of assets.

Severn Trent would focus on:

- providing safe operation;
- maintaining regulatory and contract compliance;
- operating efficiently; and
- preserving the quality of facilities through optimized maintenance.

Services

Severn Trent currently supplies services to clients throughout the country and has the experience with the insight necessary to deliver services cost – without compromising quality. Numerous U.S.-based affiliates – focused on disinfection, instrumentation and filtration technologies – complement the core



business of operating and maintaining water and wastewater utilities. Severn Trent provides management, operation and maintenance of:

- Water treatment facilities
- Wastewater treatment facilities
- Water distribution systems
- Storm water collection systems
- Wastewater collection systems
- Public works

In conjunction with managing and operating systems, Severn Trent also provides the following support services:

- Sludge disposal
- Asset management
- Meter reading and installation
- System rehabilitation
- Utility billing and collection

Each of these services is undertaken within the requirements of local governmental and community needs and is carried out in a spirit of commitment to customer service, excellence, integrity and the environment.

Regional Presence & Experience

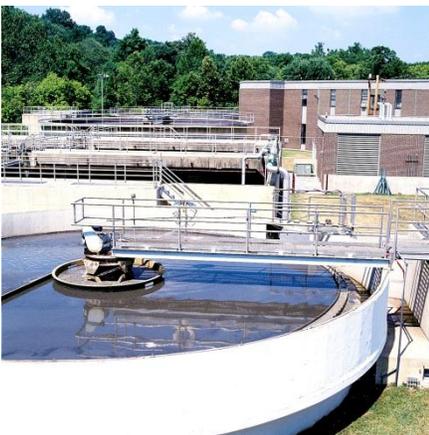
While Severn Trent is a national operator with projects from coast to coast, the company has a strong, long standing presence in the Pennsylvania region. The company has its corporate headquarters in Fort Washington, Pennsylvania and a regional office in Denver, Pennsylvania and currently has projects throughout the Mid-Atlantic.

Several highlighted projects are outlined below. It is notable that most of these projects involve long-term contracts. Severn Trent has worked with these clients to build long-term relationships, which demonstrate the dedication and integrity of its staff when working with clients.

Downingtown, Pennsylvania

As part of a 25-year service agreement that began in 1985, Severn Trent is providing full service operations and maintenance of a 7.5 MGD wastewater treatment plant for the Downingtown Area Regional Authority and also owns the Phase II portion of the facilities.

The wastewater treatment plant is located along the picturesque Brandywine Creek in Chester County, less than five miles upstream of a major drinking water supply. The facility consistently produces effluent with 98+% BOD and 96+% suspended solids removals. Unit processes include flow equalization, screening and grit removal, primary sedimentation, nitrification-activated sludge (fine bubble, diffused aeration), secondary sedimentation, mixed-media filtration, chlorination, and post-aeration. Solids are gravity-thickened, dewatered, and post-lime stabilized before being beneficially reused by farmland application.



When Hurricane Floyd ravaged the area in 1999, seven of the nine plant buildings sustained major flooding. Despite sandbagging efforts, the facility had to be temporarily abandoned at the height of the storm to prevent serious personnel safety hazards. When the



floodwaters receded the next day, the Severn Trent team rapidly mobilized and began flood recovery efforts. Despite sustaining more than \$300,000 in flood damages, partial treatment was restored within 36 hours; full compliance with discharge parameters was achieved within 48 hours and full operation within 96 hours of the flood incident. This is particularly critical due to the plant outfall's close proximity to the drinking water supply.

The biosolids facility, consisting of lime stabilization and belt filter press, came online in 1998. During the belt press phase, two types of solids are blended, gravity thickened, dewatered, and post-lime stabilized before being reused. Biosolids are then taken to a land application or mine reclamation site in the coal region of Pennsylvania.

In 2008, the need to process increasing amounts of solids created the opportunity for upgrades to the facility. Severn Trent provided input to the Authority and its engineer on operations and maintenance issues related to the improvements. Upgrades to the facility included an additional gravity thickener, sludge mix storage tank and pump and pipeline replacements. The plant monitoring system was upgraded to a full SCADA system in 2010, thereby allowing the coverage to be reduced from 24 hours per day to 16 hours per day.

Safety efforts have been recognized in the form of the Class II Facility Safety Award from the Pennsylvania Water Environment Association (2004 and 2007), Eastern Pennsylvania Water Pollution Control Operators Association (2003 and 2006), and the Water Environment Federation (2005 and 2008). The project also received the Water Environment Federation's Burke Award for safety.

Severn Trent's contract requires an annual negotiation of the operations and maintenance fee and an annual audit of the O&M expenses. The Authority now waives the annual audit due to its strong confidence in Severn Trent and the accuracy of reporting and budgeting.

Severn Trent is a sponsor of the Brandywine Valley Association, the first small watershed association in the U.S. This 800-member association works to protect the picturesque and productive Brandywine Creek, a 60-mile creek rich with cultural and historical heritage with a key role in the economic development and quality of life for this region.

Boyertown, Pennsylvania

In 1994, the Borough of Boyertown was faced with the dilemma of replacing two employees who were approaching their retirement: the manager of the surface water treatment plant and the manager of the wastewater treatment plant. In fact, the wastewater plant manager was the only one to ever hold that position for the Borough up until that time.

Unsure how to replace the knowledge these two gentlemen had of their respective facilities, the Borough Manager investigated alternatives to traditional public works management. After a competitive bidding process, the Borough chose Severn Trent to operate and maintain its water and wastewater systems. The result was a public-private partnership that immediately yielded savings totaling \$500,000 plus annual savings of \$60,000 since the partnership began in 1994.

Severn Trent provides operation and maintenance of the 2 MGD surface water treatment plant utilizing gas chlorination, the 0.75 MGD wastewater treatment plant, the collection and distribution systems, and the water meter reading. Severn Trent removed the burden of line maintenance and meter reading that had been placed on the Street Department, freeing staff in that Borough department to complete other tasks. The efficiencies gained during Severn Trent's tenure have allowed the Borough to save money without sacrificing service quality.



Severn Trent optimized treatment for the Borough's drinking water through changes in chemical treatment, automation, and employee development and training. Its effectiveness was demonstrated when the water treatment plant received a commendation from the Department of Environmental Protection for meeting all maximum contaminant levels, monitoring, and treatment technique performance requirements. The water treatment plant also received the Area Wide Optimization award from the DEP for "outstanding efforts in optimizing treatment" in 2008 and 2009.

At the wastewater treatment plant, Severn Trent first implemented changes to chemical feed, solids management and process control programs to improve effluent quality and reduce costs. Severn Trent spent significant time in the first year bringing the facility into compliance and efficient operation. Severn Trent also developed an in-house laboratory for all wastewater testing that received a Pennsylvania

Department of Environmental Protection accreditation the first year it was available. In addition, the wastewater facility has received safety awards from the Eastern Pennsylvania Water Pollution Control Operators Association and the Pennsylvania Water Environment Association.

Prior to the partnership, the Borough was considering capital improvements estimated at nearly \$500,000 for additional digester capacity and filter media replacement. Instead, Severn Trent recommended removing the trickling filters and multimedia filters from service after successfully demonstrating to the state that the plant was achieving regulatory compliance without them. Eliminating the filters has saved the Borough \$60,000 annually in electric costs while, at the same time, improving discharge quality.

In 1999, when renewal of the NPDES permit was approaching with extremely stringent limits on metals, Severn Trent recommended relocating the wastewater plant effluent outfall discharge to a larger stream. Severn Trent's solution cost the Borough \$59,000, far less than the projected \$1,000,000 to meet the metals requirements at the original discharge location. Severn Trent continues to provide capital improvement suggestions to the Borough in a rolling five-year plan that allows the elected officials a longer term financial view.

In 2009, Severn Trent worked with engineers and construction crews to assist with the relocation of several Borough water lines in a state highway intersection. These water lines needed to be realigned to allow the installation of storm water collection pipes large enough to prevent recurring flooding in the intersection. Severn Trent assisted in planning, minimized water service interruptions, isolated the lines when needed, and provided public notification on the impact to customers.

Ebensburg, Pennsylvania

In 2004, the Borough of Ebensburg was having difficulty meeting effluent quality at its 1.25 MGD wastewater plant, which had led Pennsylvania Department of Environmental Protection to impose a moratorium on new connections. The agency was also prepared to bring even harsher monetary penalties if the quality of the effluent did not improve. To comply with their corrective action plan, the Borough sought assistance to determine the most cost-effective way to manage their excess plant flows and to increase existing capacity and chose to contract with Severn Trent for operation, maintenance and management of the treatment plant.



Severn Trent utilized a systematic approach to correct treatment problems and quickly achieved compliance utilizing operational solutions. With improved compliance and an agreement by the Borough and its Authority to undertake collection system and plant improvements, DEP lifted its connection moratorium, thus allowing the Borough to effectively compete and allow new industrial customers to locate in Ebensburg.

Severn Trent implemented a number of significant improvements that reduced equipment costs, maintained capacity, and decreased energy costs. The maintenance schedule that was implemented reduced UV bulb replacement costs for the disinfection system. Plant hydraulic capacity was increased by utilizing larger decanters and new mixers. The sequencing batch reactor was changed to fine bubble aeration which decreased electrical consumption, resulting in lower energy costs. In addition, Severn Trent provided managerial and technical support throughout the facility's upgrade from 1.25 to 2 MGD.

Severn Trent replaced the existing belt filter press with a centrifuge for dewatering and added a septage receiving station. Severn Trent's experienced operation of the centrifuge has significantly lowered biosolids transportation and disposal costs and is a more efficient and cleaner process. Optimized centrifuge operations allow the Borough to generate extra revenue by providing contract sludge dewatering services for other facilities in the area.

All project efforts are undertaken with a focus on safety. In recognition of this, Severn Trent received the Regional and State 2008 Class 1 Facility Safety Award from the Central Pennsylvania Water Quality Association. The Ebensburg plant received the highest score among all other facilities in the 30-county central Pennsylvania region.

Severn Trent is a member of the Ebensburg Main Street Partnership. The partnership works to improve the economic vitality of Ebensburg's business community, encourage reinvestment within the commercial district and provide community events sponsored, organized and led by members of the community and local businesses.

Some employees at the plant are unionized and members of AFSCME.

Elkton, Maryland

Severn Trent is responsible for operation, maintenance and management of the Town of Elkton's water and wastewater systems that serve a population of approximately 15,000. Severn Trent has served the Elkton community since 1993.

In 2010, the wastewater treatment plant received the Maryland Rural Water Association System of the Year award. Severn Trent ranked at the top for its ability to "provide quality and consistency of treatment process and results, quality and consistency of wastewater service to customers, demonstrated innovation or creativity in addressing a system function, problem or operation; exceptional effort by system personnel under difficult circumstances and outstanding professionalism of system operations or management personnel." To





be nominated, each system had to demonstrate a new special project, program or upgrade instituted within the previous year.

The Mayor of Elkton, Joseph Fisona, stated, "We appreciate the exceptional service Severn Trent continues to provide our citizens."

Severn Trent has a long history of providing water and wastewater management, operation and maintenance for the Town of Elkton. The relationship with the Town has been viewed as a partnership from the outset, to not only provide day-to-day operations but to also apply expertise to assist the Town in managing its vital utilities. For example, Severn Trent assisted

the Town in procuring a Water and Sewer Master Plan and reviewed the engineer's work to ensure the final product met the terms of the contract so that the Town would have a complete workable plan.

Most recently, Severn Trent participated in the startup of a 3.2 MGD advanced ENR (enhanced nutrient removal) wastewater treatment plant that was brought online in 2008. The \$30 million treatment plant is part of a larger effort to reduce pollution to and restore Chesapeake Bay and is expected to result in an 80% reduction in nitrogen and a 70% decrease in phosphorus to the Big Elk River and ultimately Chesapeake Bay. As part of the ENR upgrade, the on-site process testing laboratory received new equipment. The new DO and pH meters as well as other new equipment allow for faster process testing of ammonia, nitrate, DO and total solids.

The treatment plant processes include influent pumping, grit/screenings capture and removal, Orbal BNR-activated sludge process, post-anoxic chamber for further removal of nitrogen compounds, clarification, filtration, UV disinfection, belt filter press sludge dewatering, and indirect thermal drying to stabilize sludge solids. The facility also has biofilters and a wet chemical scrubber for odor control.

Severn Trent is also responsible for two wells and a water treatment plant, three booster stations, 14 wastewater lift stations, and for administering the industrial pretreatment program that serves five regulated industries. The program was nominated by the USEPA for the 1995 Pretreatment Program Excellence award. Beyond the requisite annual visit to SIUs, Severn Trent works proactively to address issues before significant violations occur.

Severn Trent regularly provides tours of the wastewater treatment operations to the community. Tour groups include school groups, scouts, and the Maryland Department of Agriculture. The Maryland Center for Environmental Training (MCET) has chosen the Elkton facility for use in their site-specific training classes. Tour groups especially appreciate receiving a sample of Elkton Biogood, a fertilizer produced at the facility and permitted for distribution to the general public.

Severn Trent is particularly active in the broader Cecil County and Elkton community through sponsorship and support programs across the Arts, sports, commerce and various other community projects.



Lewes, Delaware

Severn Trent has operated the Howard H. Seymour Water Reclamation Facility in Lewes since 2002. The project includes the wastewater treatment plant and 32 lift stations serving a community of approximately 3,000 with an additional 10,000 seasonal residents. The Board of Public Works outsourced the operation to Severn Trent for the potential to save on operating costs and for the technical expertise and professional management services that it brings to the operation.

The plant was a newly upgraded 0.75 MGD secondary treatment facility at the start of Severn Trent's contract. It has since been upgraded in 2008 to a 1.5 MGD state-of-the-art facility incorporating membrane bioreactor technology (MBR), becoming the first facility to combine membrane bioreactor and biological nutrient removal technologies in Delaware. The upgrade was completed for approximately half the cost of the original concept, which called for spray irrigation of the effluent that would have cost millions. Severn Trent conducted a dye study and found that only 3% of effluent flow makes it back into the bay. With such small amount of the flow entering the bay and considering the high quality of the effluent from the upgraded treatment plant, the state allowed the plant to continue its original discharge, eliminating the need for costly spray irrigation. Nutrient credits are purchased to offset the 3% nutrient flow that enters the bay.



Severn Trent staff provided startup and transition to full operations for the plant's new Zenon membrane filtration system, UV disinfection system, pre-thickened aerobic digestion membrane thickener, nutrient removal processes, new screening and grit removal capabilities, and SCADA system. During construction, half of the plant was offline but still had to accept the usual flow and was able to maintain compliance in spite of the challenges.

As a result of Severn Trent's operation of the upgraded process, the BOD and TSS load to the Lewes-Rehoboth Canal has been reduced by about 2,500 pounds per month with effluent concentration levels of less than 3 mg/l total nitrogen and less than 0.5 mg/l total phosphorus. The nutrient load reduction in the canal totals 3,200 pounds per month. The plant is expandable to 2.2 MGD and a significant reduction in infiltration and inflow has resulted in considerable room for growth. The I&I project was led by another Severn Trent division that was contracted to smoke test the collection system.

In addition, on-site Severn Trent personnel continue to provide assistance to the Board's engineer and contractor by providing recommendations and reviewing and coordinating capital projects from inception to completion at no cost to the project.

In 2008, the Lewes wastewater treatment plant received the EPA PISCES (Performance & Innovation in the SRF Creating Environmental Success) award. Each Clean Water State Revolving Fund program was asked to nominate facilities that had demonstrated an "innovative approach to project implementation and creative use of partnerships" and one recipient was selected from each state.

The Severn Trent Project Manager was also named 2008 Operator of the Year by the Delaware House of Representatives. The Project Manager at this facility exemplifies Severn Trent's emphasis on community involvement as he also serves on the Lewes Volunteer Fire Department.

In July 2012 we received an award from DNREC recognizing 5 consecutive years without a discharge exceedance.



Lititz, Pennsylvania

Since Severn Trent assumed management of the Borough of Lititz's water and wastewater treatment facilities in 1988, the water treatment plant has met all Safe Drinking Water Act requirements and the wastewater plant has had an excellent record of regulatory compliance. This plant processes pharmaceutical and food product industrial wastes in addition to domestic flows.

In 2010, Severn Trent implemented significant upgrades to the wastewater plant to meet Chesapeake Bay Nutrient Reduction strategy requirements. The 3.85 MGD facility was converted to a five-stage biological nutrient removal (BNR) process. Filtration is now provided by tertiary disc filters. Severn Trent provided a substantial improvement in safety with the installation of UV disinfection that replaced the gas chlorination system. The existing belt filter press was replaced with a centrifuge for sludge dewatering and a biosolids drying system for Class A biosolids production. Throughout the transition and implementation to full operations of the upgrades, Severn Trent provided uninterrupted service.

We are also responsible for the Borough's 4 MGD water treatment plant that utilizes direct filtration, nitrate removal, fluoridation, and a sequestering agent. In 2008, we implemented upgrades to the booster pump station with the addition of five new pumps, ranging from 175 to 1,500 gpm, and an emergency generator. Recent modifications to the facility include the addition of nitrate removal through an ion-exchange process and the addition of a sequestering agent to reduce corrosion in the distribution system.

During the course of the contract, Severn Trent has modified operations to generate significant costs savings and improve operations. Severn Trent de-rated blowers (operating them at less than their rated maximum power) to extend the life of the motors and reduce energy consumption, a change that by itself generates a savings of \$1,000 per month.



Severn Trent installed an alarm system with an auto dialer that allowed reducing staffing from 24/7 to a single eight-hour shift – the single largest cost-saving measure provided to date. An upgrade of the raw sewage pumping station that included all-new controls and the installation of three new closed coupled 100-hp pumps that replaced two existing extended shaft pumps resulted in a 10% increase in permitted capacity.

The wastewater facility has received O&M Excellence Awards from the USEPA Region III and Eastern Pennsylvania Water Pollution Control Operators Association (EPWPCOA) and was also national award finalist. The operations have received multiple safety awards from the EPWPCOA and Pennsylvania Water Environment Association plus a Lab Excellence Award from the EPWPCOA.

Severn Trent participates in a number of local community outreach events including the Lititz Run stream cleanup day, water and wastewater school tours, and other programs. Severn Trent staff members are part of the Lititz Run Watershed Alliance (a group of local citizens, businesses, farmers, conservation organizations, and local, state and federal government representatives) and regularly volunteer at area events. In 2010, more than a ton of trash was collected by over 100 volunteers during the stream cleanup. The watershed has been recognized as a "Showcase Watershed" by EPA, one of 12 in the nation with this designation.



North East, Maryland

Severn Trent has been responsible for operating and maintaining the Town of North East's water system since 1991.

North East has the first surface water direct filtration facility approved for water supply in the state of Maryland. Severn Trent was involved in coordinating an \$8 million capital improvement plan for the Town that was funded by grants and low interest loans.

More recently, the direct filtration facility was upgraded to include lamella settling. This facility is designed with little

room for error since water is taken directly from the raw water source, filtered, and delivered to the distribution system. Severn Trent utilizes a number of chemical additions at this facility including alum, soda ash, polymer, and caustic soda. It is extremely important that the delivery rates of each chemical used be precise and balanced since there is only one treatment stage.

The water system consists of two Class 4 surface treatment plants (one direct filtration, the other conventional filtration) totaling 1 MGD, four elevated and three underground storage tanks, the distribution system, and four booster stations.

Penn Township, Pennsylvania

Located west of Philadelphia in Lancaster County, Penn Township resides in a region best known for its large Amish population and farm-laden landscapes. Despite the idyllic existence, the area has also experienced challenging times. In 2007, for example, the Township's wastewater treatment plant was consistently exceeding discharge limits of several contaminants including ammonia-nitrogen, total suspended solids, total phosphorous, and carbonaceous biochemical oxygen demand.

In 2008, the Township board began looking for an alternative means of managing its water and wastewater systems and investigated the viability of entering into a public-private partnership through contract operations. The Township was aware of several local successful public-private partnerships including Severn Trent operations in four municipalities within 50 miles of the Penn Township plant (Lititz, Bernville, Boyertown and Downingtown). After receiving bids from two vendors, the Township awarded a contract to Severn Trent for operation, maintenance, and management of the water and wastewater systems.

The wastewater system serves approximately 4,200 customers and includes a 0.65 MGD sequencing batch reactor (SBR) plant utilizing ultraviolet disinfection, aerobic digestion, and dewatering that was upgraded with dissolved oxygen control for biological nutrient removal in 2005. The wastewater system also includes seven wastewater pump stations and the collection system. The water system serves 2,200 households and consists of a well with a 225 gpm submersible well pump utilizing sodium hypochlorite disinfection and polyphosphate to sequester manganese, the distribution system, and an elevated storage tank. A new water treatment facility is currently being designed that will feature microfiltration and nitrate removal, and the Township is moving forward with plans to complete an interconnection with a neighboring water system that will require a booster station. Severn Trent also reads and maintains system water meters and provides maintenance for system valves.

Severn Trent immediately evaluated the treatment process and is now implementing a plan to improve operations and ensure permit compliance. Most of Penn Township's systems violations before the start of Severn Trent's contract were related to solids in the wastewater effluent. Severn Trent maintains a



lower mixed liquor suspended solids concentration, has developed substantial process monitoring procedures, and is tracking and evaluating data in order to consistently maintain compliance.

Another of Severn Trent's most pressing challenges was to stabilize the disinfection residual in the water system. Before STES' contract, minimal chlorine residual was maintained at the entry point. Severn Trent put a chlorine analyzer online that will signal an alarm if the chlorine residual drops below an established set point. Severn Trent also connected the chlorine analyzer to a relay that will shut down the well pump if the residual drops below the set point, thus preventing water that has not been properly disinfected from entering the water system.

Since the start of the partnership, the wastewater plant has experienced no discharge permit excursions nor have there been any controllable water quality excursions. The Township has experienced other benefits of its public-private partnership, including improved communications between plants' operators and the Township. Severn Trent also has repaired or replaced a number of water meters that had been malfunctioning and had become a drain on the Township's water revenue.

David Kratzer, Penn Township Manager, pointed to other benefits of the Township's public-private partnership. *"First and most significantly, Severn Trent has brought a level of technical proficiency to the operation and maintenance of our facilities. They have taken the technology we have and utilized it most efficiently and effectively. Their existing relationships with regulatory authorities and reputation for professionalism were key to re-attaining our plant's operational compliance."*

"Lastly, I've been impressed with Severn Trent personnel's community involvement. In Warwick Township, whose wastewater system also was operated by Severn Trent, the plant manager was very active in the local watershed alliance. Here in Penn Township, the company's staff is always willing to go above and beyond, whether it's giving plant tours or getting involved in community events. Our partnership has been extremely positive in a variety of ways."

F.2 Section II – Customer Service

II. *Customer Service: Prospective Proposers must demonstrate their commitment to achieving the highest standards of customer service and satisfaction. Specifically, the Prospective Proposer must highlight its experience and qualifications providing excellent customer service to the public using its water and sewer services. Additionally, as a prerequisite, the Prospective Proposer will be expected to provide a plan to execute a seamless transition to concessionaire operations while maintaining the highest standards of customer service.*



Customer Service

The Proposer and Severn Trent realize that one of the most important aspects of successful utility operations is strong communications and customer relations. Severn Trent provides a full range of utility services including meter reading, customer service, and utility billing, plus management services to municipalities, special districts, community associations and other governmental agencies. Severn Trent has extensive utility billing experience and is currently responsible for providing billing services for clients across the country.

Client	Number of Accounts	Client Reference	Contract Start
Citrus County, FL	24,000	Bernadine Flood, Customer Service Manager 3600 W. Sovereign Path, Lecanto, FL 34461 352-527-7650	2004
City of Dunedin, FL	15,758	Chuck Ankney, Purchasing Manager 750 Milwaukee Ave., Dunedin, FL 34698 727-298-3028	2007
Okaloosa County, FL	27,728	Lori Paice, Utility Billing Coordinator 1804 Lewis Turner Blvd., Fort Walton Beach, FL 32547 850-651-7145	1998
Prichard, AL	11,157	Russell Heidelberg, Vice Chairman 125 E. Clark Ave., Prichard, AL 36610 251-510-0644	2007

In addition to these referenced clients, STES operates and manages over 200 Municipal Utility Districts (MUD) in the state of Texas. Each MUD we service, we provide customer service, meter reading and utility billing services. Collectively, we provide this service to over 250,000 households in the Houston area alone and, for many of these districts, have been providing this service since the late 1980's.

During regular business hours, customers are able to speak with a local customer service representative who is familiar with the community. Customer service employees would receive special training on the handling of customer complaints and requests. They would be able to accurately and quickly answer questions and address customer concerns in a satisfactory manner. Any customer service issue or concern would be resolved quickly and professionally. Additionally, once a customer's issues were heard, proper procedures would be followed until the customer's problem had been resolved.

Subject to the structure of the concession, Severn Trent's customer service staff would be responsible for:

- handling the daily volume of work orders;
- directing field customer service staff;
- setting up new accounts;
- collecting all necessary fees and deposits;
- collecting customer payments and making sure that the payments are posted accurately to the customers' accounts;



- answering customer questions such as customers' current balance, how the balance was calculated, the amount of a delinquent account, and how to correct delinquent account situations; and
- responding to emergency situations and directing the appropriate timely response of field or other operational staff.

Severn Trent has specific processes to ensure the reconciliation of customer service representative's cash drawers. The customer service supervisors would be responsible for reconciling the daily cash collections and charged with generating monthly summaries of sales and collections.

In addition, field staff, meter readers, and technicians would be responsible for processing work orders for initiation and termination of service and for disconnecting suspicious or illegal connections to the water system.

The Proposer and Severn Trent would work actively with the City and its Advisors to determine a precise and detailed plan for the transition of operations without disruption to services and which would appropriately cover all personnel matters.

Transition Experience

Severn Trent's employee relations philosophy is simple: it is committed to providing the optimal climate for maximum career development and achievement of goals for all employees. Each employee is treated as an individual and is encouraged to set and work toward goals including excellence, superiority, environmental compliance, and customer service. All employees are encouraged to develop a sense of teamwork and to become individuals working together to attain a common goal.

Severn Trent has developed a flawless reputation for the effective transition of employees from the public sector to the private sector workplace. In addition to successfully transitioning more than 1,200 public sector employees in numerous projects across the country, Severn Trent has transitioned over 600 additional employees into the Severn Trent organization as a result of corporate mergers and acquisitions.

Perhaps one of the best examples of Severn Trent's success in moving employees from public to private operations is its experience in Pasadena, Texas. Although this project required staff reductions as a result of the City's desire to save money, Severn Trent worked with the City's current employees to make a beneficial transition for each employee during the first year of operations. In total, 14 municipal employees transitioned to the Severn Trent project staff, including the current Project Manager, and seven others transferred to other positions in our organization. The City assisted in this process by hiring qualified employees to fill vacancies in other City departments. Employees who were not selected to remain in the wastewater operation or who did not wish to work under private contract operations had an option to remain with the City if they so desired.

The project represents a model for excellent employee transitioning, and Johnny Isbell, Mayor of Pasadena at that time, noted in a letter to Severn Trent, *"I am very pleased with Severn Trent's efforts to be a worker-friendly employer and a good corporate citizen. As is typical of privatization efforts, our plans were initially met with skepticism from some public employees. You countered this by working with us to ensure that no public employees lost their employment as a result of the privatization. At the same time, Severn Trent has made every possible effort to involve itself in the community as a sponsor of and participant in various events."* Mr. Isbell went on to commend Severn Trent on its ability to save Pasadena \$1 million per year and eliminate its problem with environmental violations.



F.3 Section III – Safety and Security

- III. *Safety and Security: Prospective Proposers must demonstrate their ability to address and resolve safety and security issues. Specifically, the Prospective Proposer should have:*
- a. *knowledge of water and sewer and public safety and security techniques and methodologies.*
 - b. *experience in emergency response support.*

Safety

The Proposer and Severn Trent are serious about the responsibility to provide a safe and healthy environment for employees and for all who come into contact with its operations. Wherever Severn Trent operates, it seeks to minimize the risks arising from its operations. It has established three key health and safety principles for all employees.

- If a job cannot be done safely, don't do it.
- Always look out for safety hazards.
- Never ignore a safety hazard; fix it or report it.

The backbone of Severn Trent's health and safety policy is a safety management system that is implemented on every level of the company. At the highest level, a set of protocols that are mapped to the OHSAS 18001 standard are used to determine internal health and safety requirements. These are supported by a set of detailed standards that cover all key risk areas relating to its businesses, against which business units are regularly audited. Severn Trent uses established tools to monitor its performance and benchmark the results against other companies.

Severn Trent's operations have received numerous awards for safety-related programs. The success of its safety program is best illustrated by the continued decrease in lost work day cases and the continued reduction in workers' compensation costs. Further, its EMR (experience modification rating) has declined from 1.4 in 2001 to 0.78 in 2011-12.

As part of the transition, Severn Trent would develop a safety management plan based upon factors including the project scope, facility design, existing equipment, and the process control program. It would evaluate facilities for OSHA compliance and meet with employees to discuss the transition and get their input on needs and concerns. The plan would include an inventory of personal protective equipment (PPE) that would be required and provided and would address specific requirements for inspection and maintenance of safety equipment such as air monitoring meters, safety harnesses, lifting equipment and breathing apparatus. This plan would be regularly reviewed and updated to reflect changes to operating conditions and equipment and revisions to the OSHA safe work standards.

Severn Trent would implement its standard safety programs such as chemical "right-to-know," hazardous spill responder, lock out/tag out, and blood-borne pathogens. Employees would be evaluated to confirm an understanding of how to perform activities safely, and any needed training would be conducted. Employees would be provided with personal safety equipment and trained on its use and limitations. All employees would be fit tested and medically certified to use respirators and self-contained breathing units.



Ensuring a healthy and safe work environment for its employees is emphasized throughout the Severn Trent organization and, in fact, is a vital part of its corporate culture. Severn Trent utilizes a multi-level approach to developing, implementing and updating the health and safety program, which is under the direction of a Vice President who reports directly to the President of Severn Trent Services. Its health and safety policy details the responsibilities of all levels of employees within the organization.

On a project level, a site safety coordinator would be appointed and trained. Working with the Regional Health and Safety Manager and Manager of Compliance, this person would be responsible for the coordination of training, safety issues and accident investigations.

Every employee is responsible for preventing incidents and injuries. Severn Trent welcomes employee involvement in all aspects of health and safety, from policy formulation through monitoring and training. Employees are encouraged to voice their safety concerns and to discuss any unsafe conditions that may have developed. The program is working toward an ultimate goal of a truly interdependent culture in which employees look beyond their personal circumstance and take an active role to positively impact the safety of those around them.

As part of the orientation process, all employees would be required to read and understand the corporate Health & Safety Management Manual and the Site Health and Safety Handbook, copies of which would be maintained on site. Employees would also receive personal copies of the Safety Rules Handbook, a condensed reference guide that is written from the employee's perspective to ensure understanding and maximize compliance.

Severn Trent recognizes that successful performance depends on its employees; therefore, it diligently ensures that each employee receives extensive on-the-job safety training, including procedural training that is in compliance with OSHA regulations. The safety coordinator participates in monthly train-the-trainer programs and holds monthly safety meetings. Of particular concern is training of personnel in techniques for proper handling of chemicals, chemical spill cleanup/hazard response, and confined space entry procedures. Practice drills are conducted to ensure proficiency when faced with various safety situations.

Severn Trent is well aware that risk can be greatly reduced by adopting standard approaches in the workplace via codified procedures. These cover a wide range of routine and non-routine operations within the system and have been developed by experts in each particular field. The generic procedures are then incorporated into local procedures by operational managers who provide a standardized, low risk approach to dealing with the on-site tasks that are under their control. Job safety analyses (JSAs) are utilized to identify hazards associated with a task and document measures to minimize or eliminate the risk. Standard operating procedures (SOPs) detail the specific steps for a particular activity, documenting the hazards and abatement measures associated with each step that were identified by the JSAs. Developing and utilizing this system allows solutions to problems to be thought out in advance, rather than under the pressure of an emergency – a proactive, rather than reactive, approach.

Systems would be introduced at the City's facilities that monitor the effectiveness of health and safety applications. This typically includes records such as near misses, number of accidents, type of accidents and employee days lost through injury. These statistics feed into the training needs and employee assessment area.

In addition to its ongoing health and safety monitoring, Severn Trent has adopted a practice of regular formal safety inspections to ensure that the importance of safety awareness is emphasized to employees. The Project Manager would perform monthly inspections while the Manager of Compliance and/or Regional Manager would conduct annual environmental and safety audits.



Severn Trent believes that the overwhelming majority of accidents can be prevented with the use of tools such as safety training, written procedures, and quality accident investigations. When an accident does occur, an investigation is conducted to determine the root cause so that similar occurrences can be prevented in the future. Upon review of an investigation, recommendations are made to help prevent further accidents or injuries. The findings are distributed throughout the company so similar experiences can be prevented at other sites.

Severn Trent is constantly keeping up-to-date with new safety legislation and developing appropriate training initiatives. Its knowledge base is continuously examined to ensure that each of its operations has the advantages of knowledge and experience gained both within the United States and throughout its worldwide operating companies.

Security

In all Severn Trent projects, security is paramount in relation to public and employee safety. The security plan for the City's system would include:

- maintaining all current security measures;
- undertaking a full security review, informing the City immediately when deficiencies in the existing arrangements are identified; following discussion, appropriate action would be taken to rectify the problems – for example, Severn Trent would identify potential danger points in the system where vandal action could prove dangerous to the community, and extra security measures would be provided;
- establishing an interface with area law enforcement agencies; and
- establishing visual alarm systems for outlying pumping stations to ensure rapid response by Severn Trent.

The terrorist attack of September 11, 2001 and the biological attack that followed have emphasized the potential danger of intentional contamination or destruction to water and wastewater systems. Severn Trent has always considered security to be of the utmost importance in protecting against both intentional and unintentional contamination of the water and wastewater systems it operates. Prior to the September 11 attacks, Severn Trent had monitored the progress of the National Infrastructure Protection Committee and Critical Infrastructure Protection Advisory Group and had registered with the American Water Works Association to receive alerts directed against water systems. Recently, Severn Trent reemphasized to its customers the need to continue and reinforce, if necessary, required cross connection and backflow prevention programs. New procedures were also introduced, such as a banding program to detect security breaches and chlorine residual monitoring to detect some types of contamination that may occur.

Severn Trent has developed a facility security and system integrity procedure in response to the increased need for greater security for water systems. If unauthorized entry into a sensitive area of a facility can be detected, it may be possible to prevent or mitigate the effects of any contamination that may have been introduced into the water supply.

This procedure uses easily breakable plastic bands to indicate if a gate, door, roof hatch or chemical tank has been opened. A log-in sheet is provided for vendors, contractors, subcontractors and others. The operator must record if the bands are intact or broken upon arrival. If the bands are broken, the operator must determine if there is a reasonable explanation and document these events. If there is no reasonable explanation, the operator must investigate for signs of contamination. Signs of



contamination could include spills of unknown powders or liquids, unusual odor or taste to the water or unexpected pH, chlorine, phosphate, arsenic or cyanide levels.

Regardless of whether the bands are intact upon arrival, the operator must record the measured values for routine tests performed to determine if the levels are normal or unexpected and document his/her findings. Variances in test results that cannot be quickly explained by the operator are immediately referred to a supervisor, who investigates the circumstances and initiates emergency response activities, including notification of City officials and Severn Trent executives, if necessary.

Emergency Preparedness

Severn Trent believes that the best approach to addressing any emergency situation – be it mechanical, treated water quality or natural disasters – is through prudent planning and training of all project personnel.

Severn Trent performs a detailed evaluation of the facilities and services under its control and develops a site-specific comprehensive emergency response plan. The plan contains helpful general information about various emergency situations that may be encountered, plus specific procedures designed to help employees prepare for and deal with emergencies that affect operations such as:

- chemical leaks/spills;
- personnel emergencies;
- explosion/fire;
- major equipment failures such as pipe, valve and pump failure;
- process failure;
- power failure;
- loss of access to the facility site;
- extreme weather conditions including high wind, flooding, and extreme cold; and
- sabotage and breaches of security.

Severn Trent would coordinate the evaluation and subsequent plan development with the City and other departments such as police, fire and public works and with other emergency management agencies. A draft emergency response would be submitted to the City for its review and comment. Those comments would be reviewed and incorporated into the final plan that would be resubmitted to the City for final approval. A sample emergency response plan is provided in Appendix D for the City's review.

Even the best of planning cannot prevent all emergencies from occurring. Operations are monitored during non-staffed periods and on-call personnel notified in case of a malfunction. If mechanical equipment fails, Severn Trent determines whether emergency repairs or replacements are needed to maintain the treatment process. Depending on the type of emergency and expertise needed, some or all project personnel are contacted and immediately respond to address the issue at hand. Severn Trent utilizes existing relationships with mechanical repair vendors to augment its in-house capabilities to correct mechanical failures. Additionally, Severn Trent resources can be marshaled from other projects in the area – or from its staff of 1,400 employees nationwide – plus necessary subcontractors as required to effectively respond to emergency situations.

Some examples of Severn Trent's experience in emergency response include the following.



- Downingtown, Pennsylvania – When Hurricane Floyd ravaged the area in 1999, seven of the nine buildings at the wastewater treatment plant sustained major flooding. Despite sandbagging efforts, the facility had to be temporarily abandoned at the height of the storm to prevent serious personnel safety hazards. The Severn Trent team rapidly mobilized and began flood recovery efforts as soon as the floodwaters receded. Despite sustaining more than \$300,000 in flood damages, partial treatment was restored within 36 hours; full compliance with discharge parameters was achieved within 48 hours and full operation within 96 hours of the flood incident.
- Danville, Virginia – In 2009, heavy rains from Tropical Storm Ida caused the Dan River to flood and damaged manholes allowed excessive flows into the wastewater treatment plant (more than 38 MGD daily average to a facility designed for 24 MGD maximum flows). The flooding and increased flow caused the underground pipe galley to flood when it was unable to drain back to the influent wet well, which had reached high level. Severn Trent staff operated all six influent pumps to force the excessive flow through the plant to help lower the influent wet well that, in turn, helped lower the water in the pipe galley. Portable pumps were installed in the pipe galley to assist with removal of more than two feet of water flooding mechanical equipment and motor control centers. With staff working around the clock, Severn Trent was also able to maintain the 11 stations and avoid spill events. Vacuum trucks provided additional pumping at four stations to maintain the wet well.

F.4 Section IV – Capital Improvements

IV. Capital Improvements. Prospective Proposers must demonstrate their ability to efficiently undertake required capital improvements to the Concession Assets during the term of the Concession Agreement. Prospective Proposers must demonstrate expertise in relevant water and sewer engineering standards, specifications, policies, practices, and processes.

Severn Trent has significant experience undertaking capital improvement programs for the systems it manages. As part of its standard practice, Severn Trent would proactively seek to identify improvements that could benefit the City in terms of compliance, cost effectiveness, and efficiency. Severn Trent has an asset management focus to continually determine the condition and criticality of equipment. All of this information then serves as the foundation for capital improvement plan recommendations.

STES has the ability to act in the role of either support contractor or general contractor to: oversee the engineering required for system placement; develop system specifications and installation; develop, train and implement standard operating procedures; and provide system start-up and shake-out. The projects presented in Appendix B of this submittal highlight the depth and breadth of experience in assuring client partners that they receive the highest quality capital improvements through Severn Trent's exacting engineering standards, specifications, policies, practices and processes. When such an initiative is undertaken for its clients, Severn Trent provides the highest qualified staff to manage and implement these projects.

STES has an exceptionally successful record in reducing operating costs at wastewater treatment plants while improving the quality of treatment and the protection of the capital investment. Several factors contributing to these successes have included better utilization of operations personnel,



increasing operator training and certification, and innovations in process management such as process control and sludge disposal.

STES has been instrumental in the design, installation, programming and maintenance of SCADA systems that monitor lift station and treatment plant performance. Electricity is often the largest single category of expense in wastewater treatment, especially for plants utilizing aeration processes. Severn Trent has often been able to decrease this cost by routinely assessing plant capacities, dissolved oxygen levels, hydraulic flows, etc.

Aggressive inspection, repair, and maintenance of collection systems by Severn Trent has often resulted in immense savings in capital costs by making it possible to delay planned expansion of wastewater treatment plants for up to 10 years.

Two examples of cases in which Severn Trent capital funded improvements on behalf of its clients are below.

- Mustang, Oklahoma – Within the first six months under contract, Severn Trent financed and project managed a \$750,000 program for the construction and installation of a belt filter press to dewater solids generated at the facility. Prior to this, there were few options concerning the disposal of sludge. The installation of the press and building gave the City of Mustang greater flexibility, and utilization of Severn Trent capital freed up funds for other considerations.
- Alamogordo, New Mexico – As part of a team effort to resolve a sludge issue at the city's wastewater treatment facility, Severn Trent financed and project-managed a \$657,000 program for the design and construction of a belt filter press system enclosed in an all-weather building. This project was completed during the first six months of Severn Trent's contract and continues to provide the City of Alamogordo with a more reliable approach to residuals management.

G. Financial Capability

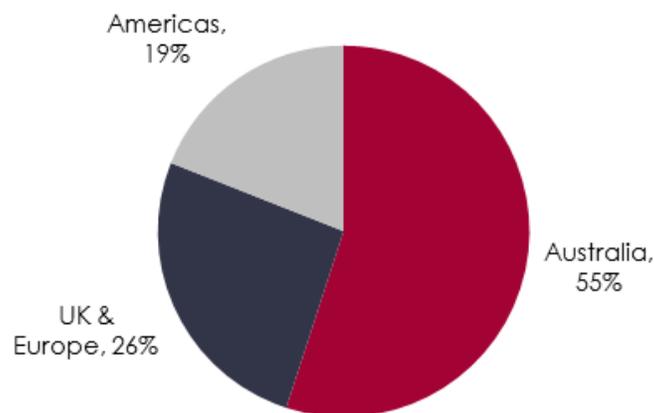
G.1 Section I – Financial Capacity

I. Financial Capacity to Make Upfront Payment, Maintain the Concession Assets. Prospective Proposers must demonstrate their financial capacity to pay the upfront consideration and to maintain the Concession Assets for the term of the Concession. To demonstrate sufficient financial capacity, the primary equity providers and operators must provide copies of audited financial statements for the past three years, together with any other relevant financial information. If audited financial statements cannot be provided, team members should provide enough financial information to demonstrate that they have the financial resources to successfully execute a project of this nature and scope.

Access Capital Advisers serves as investment manager for several underlying investors through long-term, evergreen, investment management agreements. The underlying investors are passive, and Access is the only party with which counterparties interface. The underlying investors are predominantly Australian pension funds. Through these arrangements, Access has deployed A\$3.9 billion into infrastructure assets globally and currently has available capital of roughly A\$1 billion to invest in infrastructure assets. Concession assets in existing water and wastewater assets are considered in the 'sweet spot' of the infrastructure asset class for this available capital.

Current funds under management total A\$3.2 billion, which ranks Access as the 11th largest infrastructure manager of pension fund capital globally¹. A geographic breakdown of the firm's infrastructure assets under management is shown in Figure 5.

Figure 5: Access Infrastructure Direct Investment by Geography



¹ Towers Watson, *Global Alternatives Survey*, 2012 p 87.



Access' clients who would provide the equity funding for the transaction include one of the largest state pension funds in Australia, of \$36.0 billion, and the largest pension fund representing the agricultural and seafood sector, with assets of \$1.2 billion. Access would be able to provide audited financial statements of the underlying investors during the RFP phase of the process. These would show that the underlying investors have multibillion dollar balance sheets.

G.2 Section II – Ability to Raise Financing

- II. *Ability to Raise Financing. Prospective Proposers must provide specific evidence demonstrating their ability to raise financing for a project of this nature and scope. Specific factors that will be assessed include:*
- a. *capability of issuing debt and raising equity in the current capital market.*
 - b. *the number and size of past relevant transactions.*
 - c. *specific experiences on past relevant transactions.*

Access has been a long-time investor in concession and other infrastructure assets. Access completed its first direct investment in infrastructure in 1997 (an Australian toll road concession) and has steadily expanded its global reach with direct investment in Europe (since 2004) and the U.S. (since 2006). Over this period, Access has deployed A\$3.9 billion into infrastructure assets globally which includes completing direct investments in 26 major global infrastructure investees. These positions range from 100% equity ownership positions to majority control positions to significant minority positions. A subset of these investments is listed above in Section E.7.

Access is actively engaged in the capital markets through its investees for sourcing debt to support transactions and to refinance existing debt packages. Access looks to apply financial leverage with its investee companies on an optimal basis and generally prefers not to adopt the most highly levered structure available. Recent examples where Access' investees have raised debt financing are outlined in Table 7, including several U.S. capital raises.

Table 7: Recent Financing Activity of Access' Investees

Asset	Description
Duquesne Light	Over 2010 and 2011 Duquesne refinanced over \$1.2 billion in maturing debt, with pricing and covenants in line with an investment grade issuer. This included \$250 million in senior notes issued in the 144A market, a 30-year first mortgage bond of \$200 million with an all-in rate of 4.76%, a \$650 million bank deal, and a number of smaller tax free bond issuances.
Southern Water	In 2010 Southern Water priced £250 million of high yield bonds, a £200 million term debt facility, and a £25 million revolving debt facility. Together, the bond and bank issuances were sufficient to refinance expiring holding company facilities as well as manage the crystallization of swap liabilities.
Moto	In March 2011 Moto refinanced its senior and junior debt facilities. Moto issued a new £400 million senior loan facility, a £170 million structurally subordinated high yield bond and £30 million and £20 million capex and working capital facilities. Access chaired the Refinance Committee.
Peninsula Link PPP	In 2010, Access assisted in the project financing for this development PPP. A seven-year bullet debt facility of A\$765 million was put in place.
Flinders Port	A full refinance was completed for Flinders Ports in June 2011. A\$360 million was refinanced in three separate tranches.
Brisbane Airport	Brisbane Airport raised senior debt facilities in nine tranches. In March 2011, this included A\$600 million bonds, US\$400 million of fixed rate bond issues in the US private placement market with 10-, 12- and 15-year maturity tranches, A\$200 million of 15-year fixed rate bonds and A\$500 million in bank debt facilities. During May 2012 a total of US\$185 million and A\$30 million in fixed rate bonds were issued in the U.S. private placement and domestic markets respectively. The U.S. private placement bond issue comprised three tranches with maturities of 10, 12 and 15 years.
Adelaide Airport	Adelaide Airport raised a total of A\$384 million in senior debt facilities. During April 2010 and December 2010, a total of A\$264 million in maturing bonds were refinanced through a debt swap process with the buyback and exchange for a replacement 5.5-year domestic bond issue at a margin of 255 bps over BBSW. During December 2010, a total of A\$120 million in three-year bank debt facilities were negotiated through its two relationship banks ANZ and Westpac. Bank debt facilities were subsequently drawn down to fund expansion works at the airport.
Perth Airport	Perth Airport raised a total of A\$2.3 billion in senior debt facilities in 11 tranches. During October 2009, a total of A\$740 million in bank debt facilities with three- and five-year maturities were negotiated with a group of eight lenders. During November 2011, a total of A\$1.23 billion in bank debt facilities were negotiated with a group of nine lenders. Debt facilities include A\$915 million in revolving syndicated debt facilities with three-, five- and seven-year maturities, a A\$15 million working capital facility, and a A\$300 million backstop facility for a future capital market issue. During May 2012, a total of US\$270 million and A\$30 million were raised in the U.S. private placement and domestic bond markets, respectively, to refinance existing debt facilities and fund capital expenditure. The U.S. private placement market issue comprised three tranches with maturities between 10 and 15 years and were issued at margins between 270 bps and 290 bps. The domestic market issue had a 10-year maturity.
Sydney Airport	Sydney Airport raised a total of A\$2.8 billion in senior debt facilities in seven tranches. During July 2010 a total of A\$175 million in five-year bonds were issued into the domestic market at a margin of 265 bps. During October 2010 a total of US\$500 million in 10-year bonds were issued into the U.S. 144A bond market at a fixed rate of 5.125%, and A\$1 billion in bank debt facilities were negotiated with terms of three to seven years and margins of 200 to 250 bps. During May 2011 a total of A\$100 million in seven-year bonds were issued into the domestic market at a margin of 210 bps over swap and A\$300 million in five- and six-year bank debt facilities. During June 2011 a total of C\$225 million in seven-year fixed rate bonds were issued in the maple bond market at margins of 190 bps. During July 2011 an additional A\$452 million in five- and six-year bank debt facilities were negotiated.
Great Energy Alliance Corporation (coal-fired power plant)	In November 2010 GEAC refinanced a A\$455 million Bullet A debt tranche (around 15% of outstanding debt) with a new AR Facility. The AR Facility had an upfront cost of 300bps, with an ongoing margin of 450bps. The facility matures on 12 November 2015.



Access manages capital on behalf of underlying investors that have significant financial capacity and strong growth in their capital bases. In Australia a mandated minimum of 9% of all wages must be deposited into superannuation accounts, resulting in one of the fastest growing pension systems in the world. This provides Access with significant capacity to invest additional equity in its investee and concession companies through its existing base of capital under management.

Access would seek to engage the services of a top-tier debt advisor to help devise an optimal capital structure for the Concessionaire, defease any existing debt (as required), and raise new debt financing in support of the transaction. Access' current assessment is that debt financiers will be attracted to financing a properly structured Concession underpinned by the Concession Assets. This would be consistent with its experiences arranging financing for its other concession assets.

In addition to the debt advisor that would be engaged by the Proposer, EIP as a Special Transaction Advisor also has significant experience raising debt and equity capital, including for concession and infrastructure portfolio companies. For example, Dana Sands worked in the municipal utilities group at Morgan Stanley from 2000-05. At Morgan Stanley, she conducted water and wastewater financings for Hamilton, Ohio, Findlay, Ohio, and Los Angeles Water and Power. In addition, she led the team that issued more than \$700 million in water and wastewater tax-exempt bonds. Robert Lawsky was involved in the capital-raising of the Macquarie Infrastructure Partners funds as well as the financing of its portfolio investments. Larry Chertoff participated in the equity and debt financing for several water and wastewater companies and public-private partnerships including South Staffordshire, Santa Paula Water, Source Gas in Ontario, Canada, and American Roads in Alabama.



Appendix A – Technical Services Group and Other Key Operator Support Personnel

Technical Support

In developing its corporate organization and structure, Severn Trent recognized that, from time to time, its operations require additional technical and engineering expertise to address specific issues and challenges presented during the contract term. Therefore, Severn Trent formed an internal Technical Services Group – made up of environmental engineers and process control, regulatory, and QA/QC experts – to assist field personnel by providing specialized input for specific issues confronted at the plant level. The support, guidance and oversight of the Technical Services Group are part of Severn Trent's standard services, offering its customers specialized expertise at no additional cost.

As an operations-focused company, Severn Trent's primary concerns are smooth, efficient and compliant operations. It is not an adjunct part of an engineering company that just happens to provide operations and maintenance as part of an overall engineering and design package; Severn Trent operates facilities for its clients. Since its financial interests do not rely on providing engineering services, its Technical Services Group is able to be an objective resource for its customers who are faced with costly capital upgrades. In numerous cases, its operators and technical staff have developed operations-based alternatives to capital upgrades – saving its customers millions of dollars.

The formation of the Technical Services Group represents an innovation to the traditional contract operations approach. This group provides expertise not normally found at the project level, fosters sharing of experience among projects, and provides customers with the benefit of those experiences with similar facilities around the country. Somewhat unique among contract operators, the assistance of the Technical Services Group is not charged to the project, an approach which was taken to promote the use of this resource by the Project Manager and staff.

Severn Trent's on-site staff would draw upon the capabilities, experience, and depth of resources afforded by one of the largest water companies in the world, including the following Technical Services Group personnel.

Scott Jones has managed large wastewater and utility operations in both the public and private sectors and has extensive experience in process operations of large treatment plants. He has directly supervised the startup of major Severn Trent projects, implemented energy savings process modifications, trained operators and engineers in process control, and developed computer programs to assist Technical Services and Operations managers in process analysis, cost estimating, and site energy management planning. He has extensive experience in cost estimating and experience with industrial waste treatment.

Marie Davis has more than 25 years of environmental and operational experience. Responsible for providing technical assistance in water and wastewater treatment facilities, she brings particular expertise to clients in the areas of operations, maintenance, lab operations, data management and pretreatment. Ms. Davis assesses current practices via site visits and has conducted a variety of audits focusing on process control and bench marking. She has extensive operational experience in a variety of facilities and has served in a variety of leadership roles in water, wastewater and utility departments. She holds bachelors and masters degrees in biology and municipal and industrial wastewater certifications and a water certification in Indiana.

Jim Beckstrom, P.E., assists with technical and mechanical assessments of facility components. He has 39 years of environmental and mechanical engineering experience that includes mechanical design



of municipal and industrial wastewater treatment plants and solids-handling facilities and providing technical assistance in water and wastewater treatment facilities (including the preparation of feasibility studies, designs and specifications). He has performed process optimization, cost reduction, technical assistance and troubleshooting of treatment processes and auxiliary systems at wastewater facilities. His background also includes on-line plant engineering for water and wastewater treatment facilities and associated distribution and collection systems that are under contract with Severn Trent. His retrofit design of the sludge dewatering processes at Baltimore's 180 MGD Back River wastewater treatment facility resulted in a National Award by the Consulting Engineers Council.

Kelvin Peters assists water and wastewater projects with process control. He provides technical support for existing clients and develops programs for effective operations for potential clients. He has more than 33 years of water and wastewater experience and considerable experience in the operation of large water and wastewater treatment plants.

Alyson Willans provides operations assistance for surface and ground water treatment, water distribution systems, Safe Drinking Water Act Regulations, and customer service support. She also provides engineering and process support to the business development process for bidding of water, wastewater, and public works projects in order to produce the lowest possible prices for the operation and maintenance of projects, taking into account enhancements, modifications, the RFP, and regulatory requirements. She has more than 25 years of experience in directing and managing all aspects of water supply systems. Prior to joining Severn Trent, she held various management positions within a firm responsible for the City of Indianapolis' water, serving a population of more than 1.1 million people and encompassing four water treatment plants ranging from 16 to 96 MGD and seven groundwater treatment plants ranging from 2 to 24 MGD.

Stephanie Cerling, P.E., has 12 years of water, wastewater, and waste management experience with an emphasis on environmental compliance, remediation, brownfield redevelopment, and engineering evaluations. She provides providing operations assistance for wastewater treatment, environmental compliance (including Clean Water Act regulations, waste management, and pollution prevention), internal auditing, and customer service support. She holds a BS in environmental engineering and is a registered professional engineer.

Clint Houseworth has nearly 15 years of experience in utility, public works and municipal services management. His background includes operation of various wastewater processes including activated sludge extended aeration, conventional treatment, sequencing batch reactors (SBRs), and facultative lagoon systems as well as potable water treatment facilities and collection and distribution systems. His public works experience includes managing street maintenance and construction, storm sewer maintenance and construction, sidewalk improvements, signage, snow and ice removal, public tree maintenance, and use of public rights-of-way. He is a licensed water and wastewater operator and holds a BS in environmental studies and applications.

Adam Rogensues, EIT, provides technical support for existing clients and develops programs for effective operations for potential clients. His activities include performing process optimization, developing and implementing process control management plans, conducting Site Energy Management Plan audits, and providing technical troubleshooting to a wide variety of wastewater treatment systems, including plug flow reactors, two-stage nitrification, extended aeration, and continuous stirred tank reactor (CSTR)-activated sludge treatment processes. He holds a BS in civil engineering and an MS in environmental engineering and has a background that also includes laboratory experience, theoretical membrane research and development, scholarly journal article authorship, and experience in a wide variety of technical design projects.



Joe Kramer has more than 37 years of maintenance experience and is responsible for advising and resolving maintenance-related issues at water and wastewater facilities currently operated by Severn Trent. He also implements preventive maintenance efforts at each of the facilities under the company's control. He holds a degree in electrical engineering technology.

Bill Lane has more than 30 years of experience in water and wastewater treatment, operations, and administration, as well as in environmental laboratory management and operations. A computer application expert, he has specialized experience in the development and implementation of computerized information management systems and other computerized management tools for use by Severn Trent staff.

Pat Myers has more than 25 years of water and wastewater experience and a background of project and area management, as well as starting up and transitioning key Severn Trent projects, including a multi-million-dollar, multi-site project in Florida. He has also played a key role in the support of projects by using his experience in the development and implementation of management systems.

Richard Clayton is responsible for resolving compliance and process issues at Severn Trent projects. He has 30 years of water and wastewater experience and a strong background in collection system rehabilitation. As a former Area Manager, he has been responsible for managing multiple projects including overseeing facility operations and maintenance, workforce scheduling, contract administration, client interface, reporting, and budgeting. He has a BS in agriculture and holds multiple New York water and wastewater certifications.

Appendix B – STES Operating Case Studies

Bristol, Tennessee/Virginia

Severn Trent began serving the Cities of Bristol, Tennessee, and Bristol, Virginia, in 2007, successfully unseating an incumbent that had operated the regional wastewater plant since 1984. While not purely driven by finances, the Cities chose to take advantage of Severn Trent's innovative operating approach. Since then, the Cities have saved nearly 20% annually while maintaining compliant, efficient operations.



Severn Trent is responsible for the Cities' 15 MGD activated sludge wastewater treatment plant. The facility produces 1,800 dry tons of biosolids annually that is land applied. Belt filter presses dewater the produced biosolids that are then lime stabilized and land applied. Severn Trent also operates and maintains 32 pump stations, administering and managing the industrial pretreatment program in both cities.

The wastewater plant includes a 14.3-dry-tons-per-day in-vessel composting facility to stabilize biosolids along with yard waste. Historically, this facility composted a minimal amount of biosolids. Severn Trent recommended placing the facility in a standby mode, and the Cities concurred. This resulted in significant annual savings for electrical consumption and maintenance. Severn Trent's streamlined approach to the computerized maintenance management simplified the process and replaced the much more cumbersome system that had been used.

Severn Trent recently assisted with the startup of an upgraded pump station and added a new pump station into the system. It also participated in the decommissioning of an undersized pump station. The community around the decommissioned station had grown significantly, and the station lacked the capacity to meet the community's needs.

In late 2007, it was determined that an industrial contributor was discharging quantities of dissolved lead to the facility that resulted in the biosolids being unfit for land application and nearly became hazardous waste. Severn Trent staff worked with the Cities and the industry to pinpoint the source and reduce the lead in the discharge. As part of this process, the industry assumed responsibility for landfill disposal of the contaminated biosolids. Severn Trent realized a sizeable reduction in cost due to this action and, while not contractually required, chose to return the savings to its client.

In 2010, the permit was changed to include testing for antimony which is provided by a certified contract laboratory. The Severn Trent Laboratory Manager and Industrial Pretreatment Program Manager recently attended a two-day pretreatment seminar hosted by the Tennessee Department of Environment & Conservation.

Other steps taken by Severn Trent to improve operations include implementation of documented detailed septage disposal procedures to facilitate investigation in the event of a plant upset. Severn Trent modified the mulch disposal program to utilize a single source, thus reducing liability and increasing security by limiting the number of private citizens having access to the facility.

Mindful of community concerns regarding odor issues, Severn Trent recently switched to a new, more effective odor control system. The new chemical-based system mitigates odors associated with the



stored, alkaline-stabilized biosolids and significantly reduced odor issues associated with biosolids storage.

As part of its value-added service, Severn Trent also administers the grease trap program for the City, issuing permits and providing inspections. Additionally, it works one-on-one with permitted businesses to proactively address compliance issues by explaining the ordinances to new businesses owners and checking the manifests for all permitted businesses.

In 2010, its client asked Severn Trent to participate in a Regional Class A Biosolids Feasibility Study. The study examined the potential for a joint regional facility and will aid in developing a long-term vision for handling wastewater treatment residuals and producing a Class A residuals product.



In the Bristol, Tennessee, and Bristol, Virginia, communities, Severn Trent's community service activities include tours for students in the National College science classes and demonstrations of the importance of safety during the water testing process. Severn Trent annually helps sponsor the Beaver Creek Cleanup; more than 150 cleanup volunteers collected 8,000 pounds of trash in 2009. The Severn Trent Project Manager, Matt Dake, serves on the Board of the Boone Watershed Partnership, a nonprofit organization that works with local users, regional, state, and federal entities, educators, and others to identify and address Boone Watershed water resource issues. This watershed covers an area of 686 square miles lying in Sullivan, Washington, and Carter Counties of Tennessee and Washington County of Virginia.

The Kentucky/Tennessee Water Environment Association awarded the Severn Trent team an Operational Excellence Award in 2007. This award recognizes wastewater treatment plants that have no more than one effluent NPDES excursion in a calendar year.

Reference Information:

William Sorah
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Bristol, TN 37621
423-989-5565

Cinco Ranch MUDs

Severn Trent provides full utility management services for Cinco Ranch through contracts with 16 different municipal utility districts since their creation. Severn Trent Cinco Ranch contracts date back to 1985. Contracts currently encompass more than 13,000 accounts and a population of nearly 40,000 in this master-planned Fort Bend County community, located in the West Houston area.

Severn Trent operates and maintains 3.3 MGD and 0.91 MGD activated sludge wastewater treatment plants and 10 wells with a combined flow of 22 MGD on behalf of the Master District, which then provides access to these facilities to the member districts. Cinco Ranch contracts also include responsibility for 18 pump stations, more than 100 miles of collection and distribution systems, meter reading, billing, collections, and customer service.



Severn Trent is responsible for installing all residential and commercial water taps and for inspecting house lateral lines and sewer taps into the system's sanitary sewer lines. Its responsibilities also include annual backflow prevention device inspections and hydrant testing.

Reference Information:

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Danville, Virginia

The City of Danville found itself at a crossroads in 2008. The loss of a major textile manufacturer had significantly reduced the volume processed at the City's wastewater treatment plant and the accompanying revenue. However, the decreased volume had not significantly reduced the operating costs. While the City had examined several options for reducing operating cost, all of the ideas presented required significant capital investment. The facility had been under the same contract for 10 years that was based on conditions before the loss of the manufacturing customer.

The City issued an RFP looking for an operating plan and cost based on current conditions with the overall objective of reducing operation and maintenance costs. Severn Trent responded with several options that concentrated on optimizing the use of existing facilities while reducing operating costs. In the end and after extensive review, the City decided a public-private partnership with Severn Trent would ensure reliable operations and maintenance with a focus on using the existing facilities effectively and efficiently. In addition to the wastewater treatment plant, Severn Trent is responsible for 11 pump stations and administration of the City's industrial pretreatment program.



The treatment plant was designed as a 24 MGD pure oxygen activated sludge facility. With the loss of manufacturing, the volume to treat was reduced to 6 MGD – significantly less than the designed capacity. Severn Trent's innovative proposal and transition led to its Technical Services Group's involvement with the

City's technical committee tasked with determining the direction for matching the treatment process to current needs. The City also asked Severn Trent's Technical Services to attend meetings with the engineering firm that was evaluating the Phase 1 facility improvements (rehabilitation and/or replacement of the dissolved air flotation units and aeration basins).

Severn Trent was able to retain existing staff and build upon their invaluable understanding of the facility. The personnel were transitioned to Severn Trent and their input into operational changes has always been encouraged and welcomed. As a result, the staff takes pride in the facility and is vested in its success. Three employees have now been with the facility for over 30 years and have provided



invaluable continuity of experience. Equally important, the client has commented on the improved appearance of the plant and the employees' satisfaction with the change to Severn Trent.

Early in its contract, Severn Trent performed an asset management review and developed a plan that provided the City detailed information upon which to base its capital improvement program and identify the facility improvements that would most benefit the City and citizens of Danville. Severn Trent's proactive approach to maintenance was also implemented. Equipment that was out of service – and in many cases had been for years – has been repaired or replaced. In addition to restoring mechanical functionality, the repairs and replacements have benefited the staff that had been struggling with failed equipment under the previous contractor.

Severn Trent implemented increased sampling of different areas of the plant that provides on-site staff and Technical Services with vital information upon which process decisions can be based. It has been

able to improve process control to achieve TKN limits, at times requiring the use of only one of the two aeration basins. In addition, analytical equipment was brought in at no cost to the City to further improve management of the treatment process. New dissolved oxygen probes were installed at the end of the aeration basins to allow operators to monitor both aeration basin discharges and ensure proper feed rates of liquid oxygen to the aeration basins.



Because of the backlog of sludge left by the previous contractor, the City allocated \$330,000 in Severn Trent's contract for removal and disposal of this sludge. Upon examination, it was realized that there was a significant amount of decant that could be removed prior to land

application. A portable pump was brought in to decant the basin, and the removal was completed for \$189,000. This resulted in a net savings to the City of \$141,000 in the first 1½ years of operation.

Severn Trent was able to utilize tankage from Danville's Southside wastewater treatment plant, which had been out of service for more than 30 years, to improve the treatment process. One tank receives industrial loads high in ammonia nitrogen and decant from the sludge storage basins. The volume is then aerated to reduce the strength of ammonia nitrogen before it enters the waste stream, a step to meet seasonal TKN permit requirements. Another tank receives industrial laminating waste high in ethylene glycol that is allowed to settle and the decant is then slowly discharged into the waste stream at a rate (40 gpm) that does not affect plant operations.

Influent pH was lower than is conducive for nitrification and meeting a seasonal pH requirement (6.0 to 9.0). Upon investigation, it was determined that a chemical manufacturer had been pretreating waste to reduce pH to permitted levels (5.9 to 6.3) prior to discharge into the publicly owned treatment works. The manufacturer has attempted to accommodate Severn Trent's request to discharge the waste without pH adjustment, which improves influent pH and also increases alkalinity.

Sludge is stored and thickened prior to removal via land application. When odor complaints were received from neighbors of the facility, including the Goodyear Golf Club (Goodyear being Danville's largest employer), Severn Trent worked with the City to begin applying lime to reduce and remove odors. No complaints have been received since this change. In addition, Severn Trent is in regular contact with Goodyear to confirm there are no issues in the future. Recently, Severn Trent worked with the City of Danville to facilitate a permit application that would allow for the construction and operation of the land application and residuals solids program for the facility. The approved permit



significantly reduces the cost of solids disposal and generates a savings of more than \$10,000 per year for the City.

Improvements have been made in the area of safety to benefit the employees, the City and surrounding community. In addition to modifying procedures related to changing chlorine and sulfur dioxide ton containers, Severn Trent provided staff with personal protective equipment such as steel toed shoes and safety glasses and purchased critical tools such as gas monitors, chlorine gas leak detectors, and SCBAs.

Laboratory facilities have improved over the previous year with the addition of a new portable spectrophotometer that speedily analyzes nutrient parameters to facilitate fast wastewater operational changes. Severn Trent also completed its application and requisite Quality Assurance Manual for NELAP accreditation.

Severn Trent's Industrial Pretreatment Coordinator works closely with the City to ensure compliance with Danville's industrial pretreatment program. SIUs are monitored to ensure proper analytical methods are utilized and industrial user compliance is satisfactory. Severn Trent staff members work proactively with SIUs by maintaining regular contact and, when necessary, issue notices of violation, warning letters, and emails for local, state, and federal pretreatment violations. Septage haulers are regulated via permits through the Industrial Pretreatment Coordinator. Severn Trent also collects and utilizes data to calculate new local limits and to update the Sewer Use Ordinance



In 2009, heavy rainfall from Tropical Storm Ida affected plant operations and pump stations for five days. Damage to several manholes along the river bank caused by flooding of the Dan River allowed excessive flow into the treatment plant. While the plant is designed for maximum flow at 24 MGD, flows reached more than 38 MGD for a daily average.

Severn Trent was able to maintain treatment in spite of the challenging circumstances. The flooding and increased flow caused the underground pipe galley to flood when it was unable to drain back to the influent wet well, which had reached high level. Severn Trent

operated all six influent pumps to force the excessive flow through the plant to help lower the influent wet well that, in turn, helped lower the water in the pipe galley. Portable pumps were installed in the pipe galley to assist with removal of more than two feet of water that was flooding the mechanical equipment and motor control centers. With staff working around the clock, Severn Trent was also able to maintain the 11 lift stations and avoid spill events. Vacuum trucks provided additional pumping at four stations to maintain wet well levels.

A major motor control center was damaged in the flooding, and initial repair estimates ran between \$30,000 and \$50,000. Severn Trent worked with the City to provide detailed specifications for the replacement and used its extensive network of resources to locate equipment providers. Ultimately, the control center was replaced for less than \$19,000, resulting in substantial savings for the City.

Far more than being simply a contractor, Severn Trent partners with the City when facing these challenges, in the effort to provide vital services to the residents of Danville and bring its experience with similar challenges across the country to provide the best operational solutions possible to the City. Under Severn Trent's leadership, the Danville treatment plant has produced the best effluent quality



ever seen at the facility. With TKN seasonal effluent limits set at 20 mg/L, the operating staff has consistently maintained TKN levels below 5 mg/L through rigorous process control procedures.

Reference Information:

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1040 Monument St.
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Kingwood, Texas

Severn Trent's relationship with the Kingwood area of Houston began in 1974 when five utility districts selected Severn Trent as the company that could assist them in correcting their operational problems. It has grown from that time as facilities and systems were added up until the area was annexed by the City of Houston in 1996.

When the City annexed Kingwood, Severn Trent stayed on (without a contract until one could be negotiated) and assisted the City by continuing its services to the customers and helping City staff



transition parts of the scope over to municipal operations. This included a smooth and efficient transition of meter reading, billing, collection, and customer service. Additionally, Severn Trent met with the City to brief staff on all aspects of operation and administration including a major upgrade of the treatment facilities for which groundbreaking had just taken place. Because it was involved in this multi-phased project from the beginning, Severn Trent was able to bring the City up to speed quickly and ensure a successful completion.

Severn Trent is currently responsible for providing water and wastewater services to approximately 81,000 residents. The wastewater portion of the contract includes five activated sludge wastewater treatment plants, 287 miles of collection system, and 42 lift stations. The water system includes 23 wells; 12 water treatment plants utilizing chlorination, fluoridation and polyphosphate injection; 22 ground and seven elevated storage tanks; 315 miles of distribution system; and three booster stations.

Severn Trent was instrumental in the design, installation, programming and maintenance of a SCADA system that monitors and controls the water plants, wells, and larger lift stations and monitors the wastewater treatment plants and smaller lift stations. While operating concerns, especially during droughts, were the driving force behind the development of the system, significant savings were also realized in power, chemical and staff expenses.

Severn Trent's Technical Services Group worked with engineers and analyzed the proposed expansion of the Kingwood Central wastewater facility. Severn Trent's recommended changes reduced the cost of construction significantly. The resulting modifications to the tank levels and improved oxygen transfer from the fine bubble diffusers eliminated additional construction of extra tanks and led to a 30% decrease in electricity usage as a result. Significant savings were also created in power, chemical and staff expenses. The operational savings funded many projects that had been planned for future City



bond issues including fully funding \$1,000,000 for a seven-inch thick concrete access road to the facility.

When two of the three sand filters at the wastewater plant were not operating properly, the City contacted the manufacturer, who recommended a complete tear-out and construction of the underdrains for the sand filters (that would cost in the neighborhood of \$600,000). Severn Trent investigated the filters and determined that repairs needed to be made to an improperly seated backwash pump and the welds to the boots on the wash water side of the filters. The resulting repair cost of \$9,773 was a fraction of the cost of the manufacturer's recommended solution and saved the City of Houston more than \$590,000.

Severn Trent's operation of one of the wastewater treatment plants was exceptionally innovative. Originally constructed with a capacity of 0.378 MGD, the plant only received about 0.005 MGD of flow. A plan was devised to reduce costs and avoid effluent violations by hauling raw sewage from the treatment plant lift station to the Kingwood plant until the flow increased to the point that this was no longer economical. A strategy was then developed that took many of the basins out of service until flows increased to match capacity. When a design deficiency in the chlorination chamber made it impossible to regulate chlorine residuals within allowable limits, Severn Trent corrected the problem by installing siphon tubes during the period when flow was only a fraction of capacity. The installation of soft-start contactors and timers for the blowers trimmed electrical costs by approximately \$6,000 a month.

Activated carbon filters are in place for odor control at many of the lift stations. In the case of Lift Station #16, the odor control has been appreciated by Kingwood High School and those attending events at the high school stadium and other sports facilities in the immediate vicinity. Severn Trent's improvements in odor control, landscaping, mowing, and housekeeping have helped to foster residents' sense of trust and security in the water and wastewater systems.

Severn Trent's approach to biosolids management and disposal has evolved as the needs of its client have changed. Earlier in its contract, Severn Trent was instrumental in assisting with the development and streamlining of the first Bioset system at the Kingwood wastewater plant. The Bioset chemical stabilization method of sludge processing produced Class A biosolids, which was then sold to sod farms. Severn Trent was influential in confirming the feasibility of the Bioset's design and maintenance requirements to ensure effective long-term operations.



After 10 years of utilizing the Bioset system, the City requested more cost-effective means in which to dispose of biosolids. In 2010, Severn Trent was asked to research and identify the most economical, reliable, environmentally stable biosolids management

approach for the Kingwood community that still allowed for true beneficial reuse. After conducting extensive research, it was concluded that aerobic digestion, belt press dewatering, and land application would best meet the City's stated requirements. Modifications were implemented, and Severn Trent began employing these processes in a matter of months.

Beyond the basic implementation of industry best practices, the Severn Trent team in Houston also prides itself on developing innovative solutions to the many issues they face on a regular basis using new, yet proven, technologies. A fine example of this effort was the local team's work with a Houston company to develop a program called BirdNest. This program allows data to be input in real time



through the use of cellular telephones and the real time data to be viewed live via the web. This program also performs necessary data calculations. Through this program, the team sets up accounts for City personnel to retrieve any data that has been historically entered via a customizable reporting system. Since the City can view this data via the web in a report format, the City is better informed on a daily basis of what is happening within the systems.

At the water treatment plants, Severn Trent has been able to optimize the use and associated cost of chemicals such as chlorine, fluoride, and polyphosphates through the support of our strong project and technical support teams. Severn Trent has also been able to consistently produce and deliver safe and high quality water to residents of the service area.



Another key component of the scope of work is the management of the distribution and collection system. Severn Trent's local team provides the highest level of management for the very critical and visible systems of pipes, valves and pumps. Severn Trent strives to mitigate water loss and service disruption by ensuring all water main breaks are fixed on the same day they are reported. This can be very challenging during drought conditions when the systems are stressed.

A perfect example of the level of service that Severn Trent brings to the City of Houston can be seen in how it performs during emergencies and natural disasters. This became crucial during Hurricane Ike when knowledge of the system enabled Severn Trent to keep the water

system functioning throughout the storm and subsequent power outages. Severn Trent staff utilized its vast experience with the Kingwood area system to ensure adequate stand-by generators and fuel were on hand before the storm hit. The team utilized its previous disaster experience to innovatively manage elevated storage tanks prior to the storm so this water was available for customers once the storm passed and before power for normal operations was restored. In fact, the Houston Mayor commented in a television news broadcast that Kingwood was the only City of Houston system that was not affected by a system-wide boil water notice. Because of diligent work by the Severn Trent management and operations staff, the Kingwood water system has never suffered a system-wide loss of pressure or had to issue a boil water notice during any circumstance including drought, tornadoes, hurricanes, and capacity shortfalls.

Severn Trent has been an integral part of the Kingwood community for many years. One way it has striven to give back to this community is by reaching out to the younger generation of the Kingwood area. Severn Trent believes educating the youth of today will be a positive influence on our future environment. The company has worked with the local community college for more than 10 years by hosting the environmental class on a semi-annual field trip that brings class members out into the field to educate them on the environmental aspects of treating wastewater for a community such as Kingwood.

Severn Trent has also sponsored learning activities and plant tours for elementary through high school students throughout the history of this project. Most recently, the company chartered a bus and hosted a full day field trip for nearly 100 fourth grade students and their teachers. The program focused on water conservation and reuse and included tours of the Kingwood water and wastewater systems and a boat tour of the Houston ship channel. Throughout the day, students heard a number of presentations on the importance of water to their future environment.



Severn Trent has long recognized the impact water and wastewater operations and land stewardship have on the quality of life of the surrounding community. The effluent of the Kingwood Central wastewater treatment plant is consistently clear and of such high quality that fisherman often congregate at the receiving stream, and a family of river otters has taken up residence near the effluent discharge. Office and operational waste are reused and recycled, and effluent water is reused for sludge processing, plant cleaning and golf course irrigation.

Office areas have been landscaped to present a pleasing appearance. In addition, a diverse assemblage of birds that have rarely been observed in Kingwood (including Wilson's Warbler and American Pipit) are now seen regularly at the facility. In all, 77 different species of birds have been recorded in two years at the plant, including a Bald Eagle and Osprey.

Reference Information:

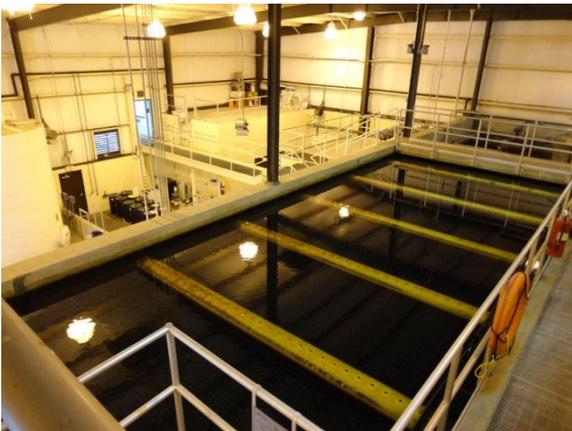
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La Vergne, Tennessee

When faced with compliance problems due to chemical overdosing at its water treatment plant, not to mention taste and odor complaints from the community, the City of La Vergne turned to contract operations and Severn Trent to improve operations and ensure high quality water for its 27,000 residents.

All City treatment plant staff transitioned to Severn Trent at the start of the contract with no layoffs. One operator has increased his certification from Grade 2 to Grade 3, and the same certification increase is pending for another employee. Severn Trent brought the facility up to OSHA standards, putting needed health and safety equipment and supplies in place and implementing the Severn Trent training program.

Significant maintenance needs were identified at the start of the contract, and Severn Trent worked diligently to return the City's equipment to optimum condition. A filter profile was performed that showed filters were low on media; in some cases, as much as two feet of media was missing. The filters were upgraded, and the proper media level restored, which has reduced the amount of backwashing and associated water usage. Severn Trent staff drained, cleaned, and inspected the plant's clarifiers,



which significantly increased the efficiency of the initial particle removal process. While maintenance expenditures during the first year of operations were significant, maintenance requirements were normalized through implementation of Severn Trent's predictive and preventive maintenance programs.

Severn Trent implemented process modifications to improve water quality and restore compliance. It was determined that increased permanganate addition at the raw water pumping station would effectively address taste and odor problems and reduce the need for powdered activated carbon. The effectiveness of this approach has virtually eliminated taste and odor



complaints that had numbered approximately 20 per month. Eliminating chlorine addition at the raw water pumping station, in conjunction with the increased permanganate dosages, reduced the total trihalomethanes in the distribution system to below the maximum contaminant level (80 ppb) for each sampling site. Granular activated carbon in the filters and powdered activated carbon provide an additional level of organics removal (disinfection byproducts precursors and taste and odor compounds).

It was determined that other chemicals had been overused. Severn Trent cut the alum dosage in half without negatively impacting water quality and, because the City pays directly for all chemicals, any

savings in this area go directly to the City's bottom line. In addition, turbidity has been reduced by 50% because of reduced chemical usage and the filter upgrades.

Rehabilitation of a reverse osmosis system used to recover backwash water for re-use is in progress, and a coupon study to confirm the effectiveness of the Severn Trent corrosion control program is currently underway.

In 2009, the Centers for Disease Control and Prevention and U.S. Department of Health and Human Services recognized Severn Trent's operations in La Vergne for the consistent and professional adjustment of the water fluoride content to the optimum level for oral health for 12 consistent months. Consistent, high-quality water fluoridation practice, as demonstrated by this water system, is a safe and effective method to prevent tooth decay improving the oral health of community residents of all ages.

The facility is a 9.8 MGD surface water treatment plant utilizing coagulation with alum, flocculation, sedimentation, multimedia filtration, on-site sodium hypochlorite generation for disinfection, potassium permanganate addition for organics (taste and odor and TOC) removal, fluoridation, and polyphosphate injection for corrosion control. Severn Trent also maintains the state certified drinking water laboratory for microbiological analyses.

Reference Information:

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City Recorder/Assistant City Manager
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La Vergne, TN 37086
615-695-6295

Newburgh, New York

In 2003, Severn Trent began operating the City of Newburgh's activated sludge wastewater treatment plant. The recently upgraded plant has a capacity of 13.5 MGD. The contract also includes managing the City's industrial pretreatment program and combined sewer overflows (CSO) monitoring program.

Since its contract began, Severn Trent has consistently met permit requirements. In addition, it has:

- increased the level of maintenance;



- improved the CSO monitoring program;
- significantly reduced odors;
- improved compliance with the City's industrial pretreatment program;
- reduced monthly chemical use and associated costs; and
- reduced monthly electrical use by 20%.

Severn Trent implemented a number of measures that proved to be very effective in reducing odors at the treatment plant and along the City's upscale waterfront business community, which is located just 500 feet from

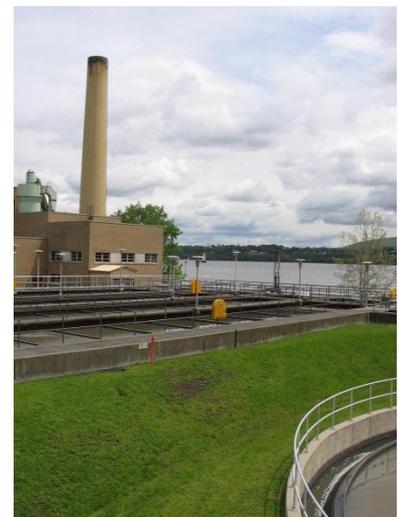
the facility. Since assuming operations of the plant from the previous operator, Severn Trent has been recognized and lauded by City officials and the local businesses for mitigating what had been long-standing odor issues.

Odors were reduced through improved operational controls, and a series of odor abatement units strategically located throughout the plant to treat the odors at their source. New sludge conditioning agents were also tested, and their use was implemented to reduce odors with the added benefit of reducing overall annual chemical costs. In addition, Severn Trent has reached out to the impacted community at public meetings and through one-on-one meetings with the commercial establishments on the riverfront that had been most impacted by odors.

At the City's request, Severn Trent provided detailed locations of manhole covers and outfalls that discharge into the combined system to assist with the City's program to develop a geographic information system (GIS) digital map that was funded by a grant from the New York State Archives and Records Administration. The GIS map of the existing wastewater infrastructure is used not only for daily operations but is also used as a reference for the planning phases of a future City initiative to separate the sanitary sewer from the storm sewer.

In 2009, the wastewater facility was upgraded with the installation of 828 fine bubble tube diffusers and four 3,800 SCFM centrifugal blowers. Manufacturing for this project was provided in part by the Mid-Hudson Workshop for the Disabled of Poughkeepsie. Severn Trent oversaw the construction, commissioning and startup testing and collected data to make improvements to the operational controls system. The team worked with the general contractor and subcontractors to optimize the aeration system operational efficiency. In addition, a Site Energy Management Plan was developed at no cost to the project, which assists with improvements in energy efficiency and is a part of the City's overall energy management plan.

The treatment plant currently has preliminary treatment consisting of bar racks followed by comminutors and grit settling tanks. From the preliminary treatment, the wastewater flows into four primary settling tanks to remove solids and floatables. The secondary treatment system consists of six aeration tanks with fine bubble diffusers and three circular final settling tanks. While the secondary treatment system is currently running in plug flow mode, it can also be run as contact stabilization or step aeration. Seasonal disinfection (May through October) is





achieved by chlorinating with sodium hypochlorite. The sludge processing facilities are comprised of a gravity sludge thickener; sludge storage tank and two belt filter presses. Sludge is processed and dewatered daily.

Employees at the plant are unionized and members of CSEA Local 704.

Reference Information:

Nick Valentine
Mayor
83 Broadway
Newburgh, NY 12550
845-569-7301

Pasadena, Texas

Under its contract with the City of Pasadena, which has been in effect since 1994, Severn Trent provides full contract operation and maintenance of the City's wastewater treatment facilities. The City currently provides wastewater services to approximately 150,000 residents, and Severn Trent treats approximately 5.73 billion gallons of wastewater per year.

When Severn Trent's contract began, the City had 10, 7 and 4 MGD tertiary wastewater plants. The 7 MGD pure oxygen facility was under EPA enforcement action, and flow had been restricted. Severn Trent process control specialists solved these problems and allowed the facility to handle flow in excess of the design flow. Since the City was sending a percentage of their flow to an adjacent industrial wastewater treatment facility and having to pay for treatment, Severn Trent was able to save the City \$1,395,000 over the five-year term of the initial agreement with this modification. The industrial treatment facility eventually came back to the City requesting a certain amount of the flows and negotiated a greatly reduced fee, resulting in additional continued savings to the City. Finally, the 10 and 4 MGD facilities were experiencing high power costs, so Severn Trent modified process operations and worked with the City to replace the leaking aeration lines with welded piping, again saving significant dollars.



More recently, the City completed construction of a 14 MGD wastewater facility that replaced the 7 and 4 MGD facilities. While the construction was originally anticipated to be complete in 2002, contractor issues delayed completion of the facility. Severn Trent continued to operate the existing plants even though they were experiencing equipment problems and flow and loading issues.

At the City's request, Severn Trent reviewed the plans and specifications for the new wastewater facility, providing input on process design and reviewing and advising on operating issues. Severn Trent's suggestions ultimately helped the City save in the cost of construction and operations and maintenance. In the end, the plant was constructed at a cost of \$1.20 per gallon including full solids handling that meets 10-15-2 (BOD-TSS-NH₃) effluent criteria. (Compare this to other wastewater treatment plant construction costs in the same time period that were as high as \$3.80 per gallon.) Further, operation and maintenance costs will be even lower than the plants that were replaced for the 30-year life of the facility. Severn Trent



participated in the startup of the new facility that proceeded without problems and has produced a quality effluent from day one.

The belt press process of dewatering sludge has been in place for 30 years in Pasadena. Sludge from thickener tanks is pumped to the belt filter presses for dewatering. Biosolids are then disposed of in a landfill. When age and efficiency concerns created the need for upgraded belt presses, Severn Trent lent its expertise to the City by advising on the efficiency of various biosolids management methods. This led to the procurement of five two-meter belt presses. As a result of this upgrade,

electricity and potable water usage have declined significantly.

Severn Trent saved the City \$4,277,000 in the first five-year term, and savings continue to be approximately \$1,000,000 per year based on the original 1993-94 budget with escalation for inflation.

Since 1994, Severn Trent has been a major sponsor of the Pasadena Livestock Show & Rodeo and the Pasadena Strawberry Festival. The former supports community education programs while the latter supports area libraries and a scholarship program. In addition, Severn Trent is a member of the Pasadena Chamber of Commerce. Severn Trent's community activities include providing book covers to area schools and tours of the new Vince Bayou wastewater treatment plant for area scouts and students.

Reference Information:

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Director of Financial Planning
1211 E. Southmore
Pasadena, TX 77502
713-475-7254

Plaquemines Parish, Louisiana

Severn Trent has provided reliable, cost effective water and wastewater operations in Plaquemines Parish since 1998. Far more than being simply a contractor, Severn Trent partners with the Parish as they face challenges in the effort to provide these vital services to their residents.

In 2007, following a serious contamination event caused by an outside source, Parish officials approached Severn Trent and asked for guidance to develop an early warning system to protect the water supply. They now have a total organic carbon (TOC) detector at every finished water location linked to an alarm system that notifies directly 911 as well as Severn Trent on-site operational staff. There is also an alarm at every raw water intake that notifies Severn Trent staff. Severn Trent's corporate experts advised and assisted with the development and implementation of the revised water security plan.





The main lab provides all permitted wastewater laboratory testing. It is NELAC- and LELAC-accredited, and the only work that is sent out is that for which it is not certified to provide. The lab is equipped far above the average lab in that there are two gas chromatographs and a mass spectrophotometer. In addition, each water and wastewater treatment plant has an on-site lab for process testing.

Severn Trent and the Parish have experienced first-hand the devastation of hurricanes and the spirit that brings people together to rebuild after the storm when the Plaquemines Parish project – with 65 employees – was hit directly by Hurricane Katrina and any progress made after that storm was undone by Hurricane Rita. As it should be, Severn Trent's first concern was for its staff, and initial efforts focused on locating all of its employees in the region. Supply caravans from the Houston office took much needed supplies to Louisiana, and Human Resources representatives met with employees and addressed payroll issues to ensure Louisiana staff received paychecks without interruption. Severn Trent also helped reunite employee families that had been separated.

More than 50 Plaquemines Parish employees lost their homes – and Severn Trent staff throughout the region and across the country stepped up to make a difference. They collected clothing and supplies while staff from Texas and Mississippi made multiple trips into the affected area with supplies.



Employees also raised more than \$16,000 for victims of Katrina and the company provided a matching donation. On a personal level, one Houston staff member took advantage of the space afforded by two additional houses on his property and hosted 18 people from four Plaquemines Parish families for three months. Another located housing for a displaced employee and his family and helped get them settled – providing transportation, locating assistance, registering for schools, etc. On a corporate level, Severn Trent responded to a plea from Common Ground Collective, a neighborhood volunteer relief organization in New Orleans, and donated disinfection equipment and chemicals to treat 60,000 gpd.

In addition to helping its employees deal with and recover from the effects of the hurricanes, Severn Trent worked to provide water and wastewater services to residents of the affected areas. Members of its Plaquemines Parish staff took refuge at the Belle Chase water treatment plant, which has an emergency generator and was able to maintain water pressure except for a brief period during Hurricane Katrina. Additional generators were brought in to provide power for one of the wastewater plants and lift stations within that system, restoring service and compliant operations at that facility. These efforts had to be repeated after the Dalcour and Port Sulphur facilities were flooded during Hurricane Rita. The Plaquemines Parish staff was augmented by Technical Services and other regional staff who spent weeks living in tents and helping out operations in the recovery process.

Approximately 1.9 billion gallons of wastewater are treated each year at the Parish's nine different wastewater treatment facilities. Wastewater effluent is discharged to the Mississippi River. Severn Trent produces Class A biosolids and is currently pursuing a new permit to allow the production of Class A biosolids continuously throughout the year, which is estimated to save more than \$185,000 annually. Severn Trent uses process control and standard operating procedures to minimize odor issues. As part of this process, Severn Trent carefully reviews each site and determines what appropriate procedures are needed. As part of the added value brought to the project, Severn Trent proactively address fats, oils, and grease issues at lift stations by working one-on-one with business owners in affected areas.



Approximately 3.1 billion gallons of water are treated each year at the Parish's five water treatment facilities that are located along and draw from the Mississippi River. Two facilities have alternate fresh water reservoirs to be utilized in the case salt water from the Gulf of Mexico intrudes into the Mississippi. During salt water intrusion, these plants may experience chloride levels ranging from the norm of 35 ppm to as high as 700 ppm. Once chloride levels in the source reach 200 ppm, Severn Trent begins diluting with water from the reservoir to maintain approximately 180 ppm of chloride entering the facilities.

When circumstances require the use of the fresh water reservoirs, Severn Trent must address operational challenges. While the turbidity of the settled water entering the filter is much lower than during normal operations, the filter effluent turbidities are higher, which create shorter run times on the filters and require increased backwashing. Filter run times are approximately 100 hours during normal operations while they are reduced to as low as 30 hours on each filter when dilution is required. Severn Trent's plans to utilize the fresh water reservoirs throughout the year – whether salt water intrusion is present or not – will ensure water quality within the reservoirs. In addition, these plants can be bypassed and the areas served by an upstream plant if circumstances require.

New EPA regulations set forth in 2003 enforced lower limits on THM, HAA, turbidity, chlorine dioxide, chlorites, and TOC removal. In response to this regulatory change, Severn Trent began using chlorine dioxide as primary disinfectant, utilizing a system that uses sulfuric acid and peroxide to generate chlorine dioxide. In addition, it completely rehabilitated a total of 28 filters at the five treatment plants in response to new regulations that required that instrumentation be in place to monitor and record turbidity at each filter vessel.

In 2009, Severn Trent implemented a new computerized maintenance management system. Its experienced staff managed a seamless transition to this program for maintenance tracking and scheduling for drinking water and wastewater operations. The software improves productivity and efficiency of maintenance with intuitive screens and easy-to-access information at a reduced cost from the previous program. In addition, training for this program was provided in-house by Severn Trent staff.

Severn Trent is responsible for nine wastewater and five water facilities, 160 lift stations, five booster stations, 360 miles of water lines, 157 miles of collection lines, seven water towers, and three reservoirs and provides customer service and collections. In 2010, its project scope expanded to include the Plaquemines Parish Government Complex, formerly known as the State School, which includes a water tower and package water treatment plant that Severn Trent now operates and maintains.

Severn Trent's community outreach projects include assisting the Parish with establishing electrical and sewer service for a community center to serve residents of the Diamond Park temporary housing community. The site was the temporary community center for events sponsored by YMCA, Save the Children, Take Off (a basketball program), Emergency Communities and other organizations involved in the Diamond community.



Reference Information:

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West Travis County Public Utility Agency

Severn Trent assumed responsibility in 2012 for providing water and wastewater services. The West Travis County Public Utility Agency (PUA) serves western Travis and northern Hays Counties. Services are provided to approximately 5,200 retail water customers, 1,200 retail wastewater customers, and 15 wholesale water customers.



Severn Trent operates and maintains 6.75 MGD activated sludge wastewater treatment plant and a 20 MGD surface water treatment plant. Its contract also includes responsibility for the collection system, meter reading, billing, collections, and customer service.

Reference Information:

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Bee Cave, TX 78738
512-763-1170

Gilbert, Arizona

Severn Trent has managed, maintained and operated the Town of Gilbert's Neely wastewater treatment facility (including an on-site certified lab) since 1986. The 11 MGD tertiary treatment facility reuses 100% of the plant effluent within the Town.

During its lengthy tenure, Severn Trent has assisted the Town with numerous capital projects and expansions and implemented many cost saving measures including:

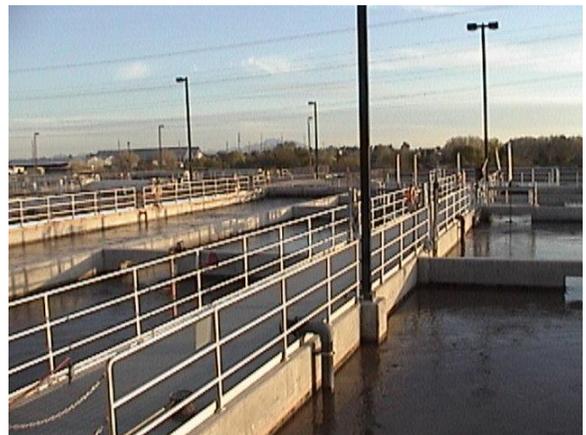
- designing and overseeing the construction of the on-demand water system;
- designing and constructing the denitrification system;
- designing the facility's expansion to 8.5 MGD; and
- providing vital plan review and comment during the plant's expansion to 11 MGD.

Severn Trent performed a detailed evaluation of the wastewater process operations, the results of which allowed the staff to implement several cost saving measures, enhance the efficiency of operations, and extend the life of existing equipment. For example, nine of 15 rotors could be taken off line during low loading periods; compliance is maintained while energy consumption and wear and tear on the equipment is reduced. The data was also used to demonstrate to the Town's design engineers that surface aeration alone did not meet the oxygen requirements during peak load periods and on the weekends. As a result, supplemental diffused air was installed in the new ditches during an upgrade and the old ditches were fitted with supplemental air.



After the facility evaluation, Severn Trent developed the smart aeration system that measures the oxygen uptake rate and provides its operations staff with a graphical representation of the level of treatment in each of the oxidation ditches. By knowing the level of treatment in the ditches, the operator can determine appropriate adjustments to the aeration system in terms of turning rotors and/or supplemental air on or off. In turn, this allows more efficient aeration power consumption and indicates periods of high loading so Severn Trent staff can ensure adequate aeration. Severn Trent is currently researching modifications to allow the system to automatically control the aeration rotors and supplemental air blowers.

When Severn Trent recognized that the performance of the influent pumps was deteriorating – and relying upon their performance until their planned replacement two years later placed Gilbert in an unacceptable position with legal exposure – the situation was brought to the Town's attention and several options provided to reduce liability. The Town followed Severn Trent's recommendation to purchase one of the new centrifugal pumps, which was planned for an upcoming expansion, and install it in the wet well with the associated piping. Severn Trent implemented the plan, which prevented sewer backups during peak flows and served as a welcomed backup when one of the pumps eventually failed. The pump was then used as a bypass pump during work on the oxidation ditches.



When the decreased reliability of effluent filters threatened compliance, Severn Trent researched solutions for their replacement. The performance of the filters was such that new support structures had to be built in-house to keep the filters on-line. Unfortunately, the manufacturer could provide no satisfactory explanation for the failure, and their recommended solution was unacceptable. Severn Trent located and worked with a new supplier to implement a sound solution to the problem. The Project Manager, who is also a registered Arizona professional engineer, designed the size and location of the new inlet openings and reviewed the supplier's plans for the retrofit at no additional cost to the Town. Severn Trent also provided construction management of the project as a value-added service. The result was a more reliable, efficient process at a lower design and construction cost made possible by Severn Trent's involvement.



Another example of cost savings through its in-house services is Severn Trent staff's fabrication of new rotors for the oxidation ditches. Two of the original 12 rotors failed due to cracking in the hubs. Complete replacement of the rotors was quoted at \$18,000 and normally would have been placed against the Town's repair and replacement budget. Instead, Severn Trent staff was able to fabricate and install two new rotors for about two-thirds of the replacement price as part of the Severn Trent base fee, leaving repair and replacement funds for other critical projects. Other savings result from participation in the power load shedding program sponsored by Arizona Public Service (APS). As a result of this program, Severn Trent receives an annual refund (this year, a check for \$6,800 that will be shared with the Town of Gilbert).

Severn Trent maintains a state-certified on-site laboratory to perform routine effluent compliance and process control analyses. With these capabilities at the treatment plant, Severn Trent staff receives necessary data in a timely manner to further ensure regulatory compliance. The extensive Severn Trent

QA/QC program meets Arizona Department of Health Services requirements. Severn Trent's high quality laboratory operation is monitored extensively through annual state audits that consistently provide positive feedback to Severn Trent.

Solar Power Project Projected to Save Town of Gilbert \$2,000,000 Over 20 Years

In the spirit of true partnership, Severn Trent worked with the Town of Gilbert as they evaluated and eventually implemented a solar power project that estimates indicate will save the Town \$2,000,000 over 20 years. The system was formally commissioned in November 2011 and the feature of a National League of Cities mobile workshop.

Constructed over five of the Neely facility's 11 groundwater recharge basins, the 2-megawatt system is comprised of approximately 8,000 solar panels and five inverters to convert the solar energy into electricity. Installation of the system will not disrupt water recharge efforts in the basins.

The solar power system will generate over 4,000,000 kilowatt hours (kWh) of electricity annually, helping to offset approximately 40% of the treatment plant's power needs. The Town anticipates the system offsetting more than 86,000,000 pounds of carbon dioxide over its useful life.



The Gilbert project and Severn Trent personnel have been recognized by the Arizona Water & Pollution Control Association (now known as the Arizona Water Association). Most recently, the facility was selected as Plant of the Year in the Large Wastewater Treatment Plant category for 2008. The facility previously received the Wastewater Treatment Award of Merit, our Project Manager was Supervisor of the Year and the Chief Operator was Operator of the Year. Severn Trent also received Awards of Merit for 2008 and 2010 and an Award of Honor in 2009 recognizing its outstanding safety performance.

In the community, Severn Trent is a member of the Chamber of Commerce. In 2010, it was a major benefactor for an innovative digester facility that will treat dog waste and convert it into energy to power a street light. This unit will be installed at one of the major parks in the community.

Reference Information:

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