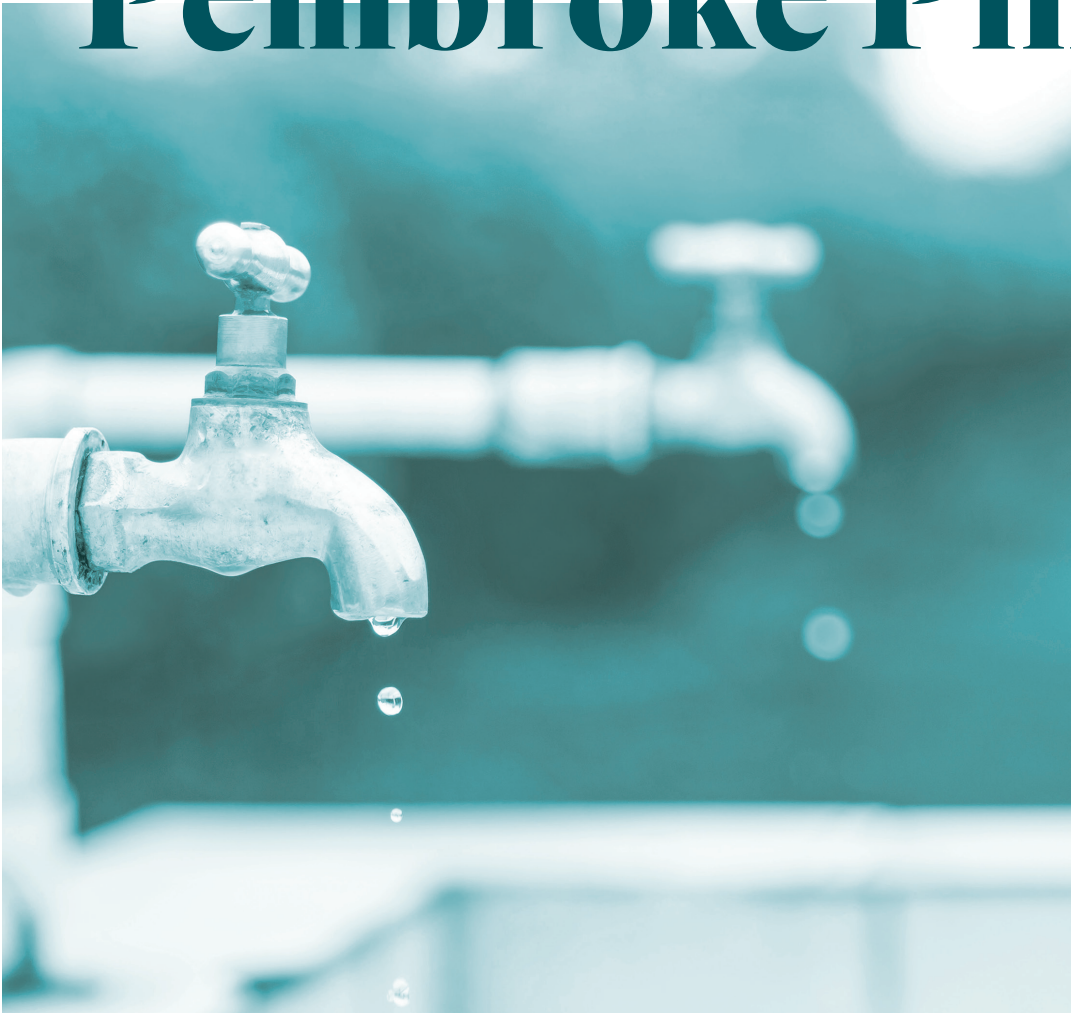


City of Pembroke Pines



July 24, 2019

Aner Gonzalez
Assistant City Manager
601 City Center Way
Pembroke Pines, FL 33025

Subject: Utility Functions Cost Analysis

Dear Mr. Gonzalez:

On June 19, 2019, the City Commission (Commission) for the City of Pembroke Pines (City) directed the City Manager to hire an independent contractor to conduct a cost analysis of the existing Utility Function Sourcing Contract. Raftelis Financial Consultants, Inc. (Raftelis) has prepared this letter proposal to aid the City regarding its investigation of the feasibility and costs associated the City taking over the operations, maintenance, and management of the water and wastewater utility system (utility system), which is currently operated under contract with Operations Management International, Inc. (OMI), a division of Jacobs Engineering Group, Inc. We understand that the City does not have formal plans to take over operations of the utility system at this time but wants to be fully informed of the costs and issues that may be associated with such an operational change.

The Raftelis team is highly qualified to assist the City with this analysis, having performed similar assessments of contract operations, utility privatization and ownership/governance options across the county. This includes extensive work in Florida in the previously mentioned areas, as well as in the areas of rates, cost of service, and finances with the Raftelis team and its newly-merged partner lead by Robert Ori, Public Resources Management Group, Inc. (PRMG). The Raftelis/PRMG team has the nation's largest and most respected water and wastewater utility management, operations, and financial consulting practice. Our clients number in the hundreds and collectively provide water services to over 25% of the U.S. population. These clients include many of the biggest and best-known utilities for major cities, as well as hundreds of smaller organizations across the country. This unparalleled industry exposure allows us to provide highly defensible solutions. We are confident that we are in an excellent position to support the City on this important project.

Our proposed Project Manager, Seth Garrison, brings more than 25 years of national and international experience in utility operations and management assessment. He is a former utility general manager and an elected board member of a regional utility that provides services to more than 200,000 customers. Seth is supported by Robert Ori, Rocky Craley and Catherine Carter, who each have extensive Florida and national experience assessing utility finances and operations.

Our approach is designed to provide the City with the information it needs to balance the short- and long-term financial and service level ramifications of operating the utility system as a City function. Specifically, we will seek to understand the following:

- The true cost of the contract operator, including both direct (e.g. water treatment plant operator salaries) and indirect costs (e.g. time spent on contract management), and of the municipal operations model.
- Contract service levels benchmarked against national peers. This analysis will help determine if the City is receiving good value from the services being contracted out.
- The proposed organizational model options, with staffing and necessary support systems to perform the services in-house with municipal employees. This model would account for municipal wage scales, benefits, and other applicable conditions, which would then be projected out ten years to show the long-term cost comparisons.
- A comparison on indirect and direct benefits of under a contract operator and a municipal model, given that there may be some significant indirect benefits to having either operating model. For example, under a municipal model staff could be shared across functions, which can't effectively happen with separate contracts.
- Scenarios and assumptions under which a contract operations model and a municipal model would be preferable. Note that a simple hard cost comparison alone will not provide the thorough analysis that the Commission desires, without scenario analysis and explanation. We anticipate 3-5 different scenarios might be considered.

Our proposed scope of services to accomplish the above is listed below.

Task 1 – Review Available Information and Conduct Kick-off Workshop

Raftelis will review the current operating contracts, performance metrics, and any other available data pertaining to the operation of the utility system. This may include discussions with City Management staff on existing and preferred service levels, and OMI on their observations and review of documentation including relevant reports and findings associated with operations issues and challenges. We will also conduct on-site reviews of the facilities within the dominion of the OMI contract and interview staff to gain an understanding

of operations and maintenance (O&M) practices, challenges, and other relevant information. These onsite visits are essentially to fully understand operational dynamics.

Note that we are assuming that we will have full access to OMI personnel and that they will provide usable information on items such as staff salaries, benefits and actual costs for this analysis. We anticipate that the City will contact OMI prior to our work starting and communicate applicable information about the project to get their cooperation.

Task 2 - Prepare High-level Utility System Operation Analysis

This analysis will include a description of the organizational structure that would be needed under a municipal model to support operations of the utility system; a conceptual staffing plan; and a conceptual utility system O&M budget, and the results of the local and national peer cost benchmarking effort.

Task 3 – Develop Economic Feasibility Model

Raftelis will develop a financial model that will be used to assess the economic feasibility of the City taking over operation of the utility system. The O&M budgets developed in the previous task will serve as the primary inputs into the model along with the costs under the current operating contract. We will also factor in costs for limited initial capital purchases that may need to be made, such as vehicles and equipment (and other one-time project expenditures that should be included and amortized over the analytical period of the evaluation) necessary to operate the functional components of the system. The model will calculate the present value of the lifecycle costs of the operation, maintenance, and repair of the utility system. The intended period of analysis will be 5 or 10 years, depending on assumptions and availability of data. This comparison will serve as the primary point of comparison with respect to the economic feasibility of the City taking over operation of the Facilities.

Note that we are assuming that all utility system operations activities would be considered for transition to municipal operations. The analysis is not intended to apply to a piecemeal approach where some operational functions would stay under contract operations, such as water field operations and maintenance, but other functions would migrate to municipal operations. Such an approach would impact the cost model. These scenarios could be studied as amendments to the proposed scope of work.

Task 4 – Feasibility Validation

We will conduct a two-hour planning (web session) with City Management staff to discuss findings and the operational elements that would need to be managed, planned, and addressed should the City take back operations from OMI.

Task 5 – Technical Memo and Presentation to the Commission

As a culmination of all previous tasks, Raftelis will develop a technical memo to document the advantages and disadvantages of the City resuming operation of the Utility System, as well as scenarios and assumptions under which each model is preferable. This will include discussion of the direct and indirect costs and benefits and will lay out other transition considerations that may arise, such as the availability of labor resources. Raftelis will then present its findings to the Commission in a technical work session.

Note that the analysis described in this scope of services goes well beyond a simple cost comparison like those that have been done in the past and found to be inadequate. Our experience as former utility managers, elected/appointed municipal officials, and financial and utility management experts suggest that the Commission wants to understand not just the costs, but why or why wouldn't the transition to municipal operations be appropriate. This includes not only understanding costs, but the context of those costs as well as the pros and cons of the various options. Our analysis will definitively answer the questions being asked by the Commission as they have done across many other jurisdictions.

We look forward to providing assistance to the City on this very important engagement. We propose to complete this effort within 60 days of notice to proceed, and our proposed level of effort is shown in Appendix A. Should you have any questions or comments regarding this letter, feel free to contact me at sgarrison@raftelis.com or 207.303.0318 your earliest convenience. Please also feel free to reach out to Robert Ori who leads our team in Florida at rori@raftelis.com or 407.628.2600.

Sincerely,



Seth Garrison
Senior Manager, Raftelis

Level of Effort

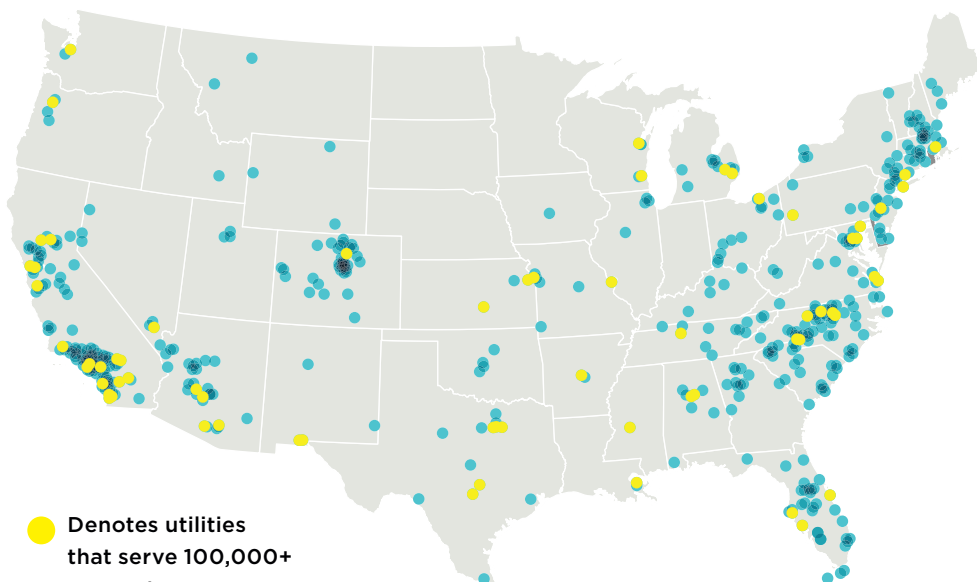
| Tasks | Web Meetings | Number of Meetings | Hours | | | | | | Total Fees & Expenses |
|---------------------------------------|--------------|--------------------|---------|---------|----------|---------|---------|----------|---------------------------------|
| | | | SG | RO | CC | RC | SC | Total | |
| 1. Data Review and Kick-off | 0 | 1 | 16 | 0 | 16 | 2 | 4 | 38 | \$10,833 |
| 2. System Operation Analysis and Plan | 1 | 0 | 4 | 1 | 8 | 2 | 6 | 21 | \$4,945 |
| 3. Economic Feasibility Model | 0 | 0 | 2 | 2 | 4 | 8 | 10 | 26 | \$6,010 |
| 4. Feasibility Validation | 1 | 0 | 4 | 1 | 8 | 6 | 4 | 23 | \$5,715 |
| 5. Technical Memo and Presentation | 0 | 1 | 8 | 1 | 10 | 2 | 3 | 24 | \$7,273 |
| Total Estimated Meetings / Hours | 2 | 2 | 34 | 5 | 46 | 20 | 27 | 132 | |
| Hourly Billing Rate | | | \$265 | \$295 | \$240 | \$265 | \$155 | | |
| Total Professional Fees | | | \$9,010 | \$1,475 | \$11,040 | \$5,300 | \$4,185 | \$31,010 | |
| | | | | | | | | | Total Labor \$31,010 |
| | | | | | | | | | Total Expenses \$3,766 |
| | | | | | | | | | Total Labor & Expenses \$34,776 |

SG - Seth Garrison
RO - Robert Ori
CC - Catherine Carter
RC - Rocky Craley
SC - Staff Consultants

Experience & Qualifications

RAFTELIS HAS THE MOST EXPERIENCED UTILITY FINANCIAL AND MANAGEMENT CONSULTING PRACTICE IN THE NATION.

Our staff have assisted more than 1,000 utilities across the U.S., including some of the largest and most complex agencies in the nation. In the past year alone, Raftelis worked on more than 600 financial/organizational/technology consulting projects for over 400 water, wastewater, and/or stormwater utilities in 40 states, the District of Columbia, and Canada.



Raftelis has provided financial/organizational/technology assistance to utilities serving more than

25%

of the U.S. population.

This map and the matrices on the following pages show some of the utility clients that we have assisted.

Leading the industry

Raftelis staff shape industry standards for water and wastewater utility finance and management through our active leadership in AWWA, WEF, and EPA. Raftelis' staff includes:

AWWA

- Asset Management Committee - 1 member
- Benchmarking Committee - 1 member
- Finance, Accounting, and Management Controls Committee - 2 members
- Management and Leadership Division - Vice Chair
- Public Affairs Council - Chair
- Rates and Charges Committee - Chair and 7 members
- Strategic Management Practices Committee - Chair
- Technical and Education Council - 1 Trustee

WEF

- Finance and Administration Subcommittee - Chair
- Technical Practices Committee - 1 member
- Utility Management Committee - 4 members
- WEFTEC Conference Planning Committee - 1 member

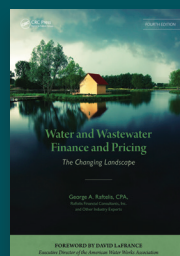
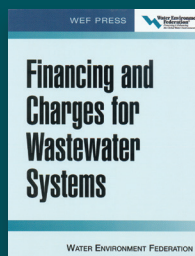
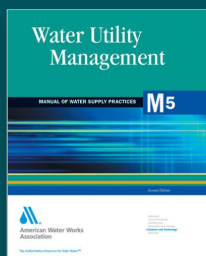
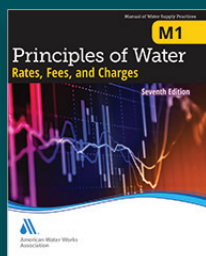
EPA

- Environment Financial Advisory Board - 1 member

We wrote the book

Raftelis staff have co-authored many of the industry's leading guidebooks regarding water and wastewater financial and management issues, including:

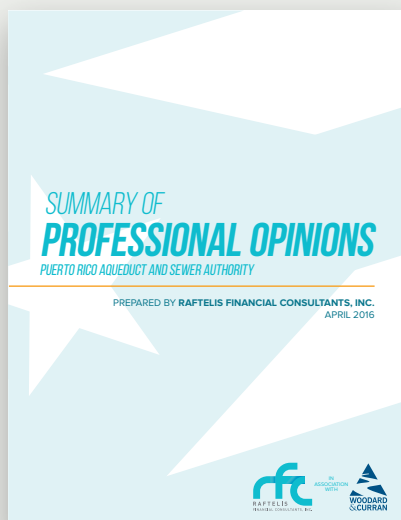
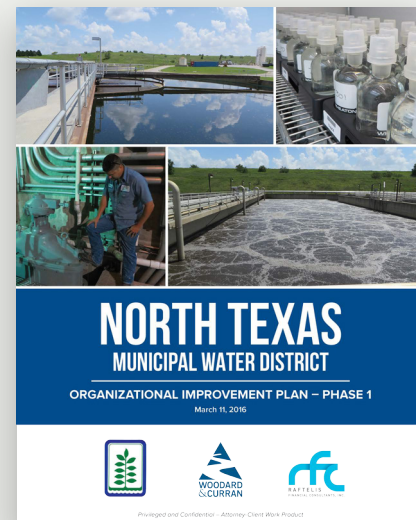
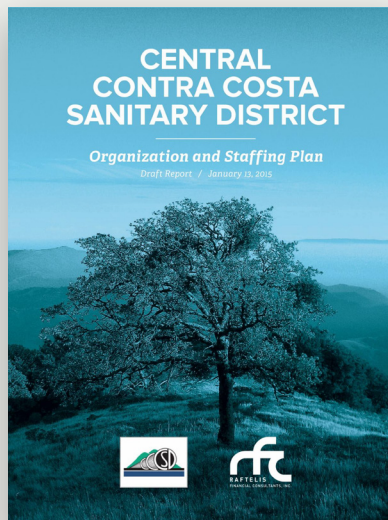
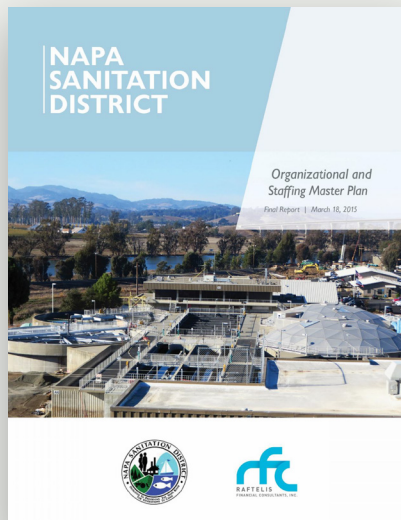
- Affordability of Wastewater Service (WEF)
- Financing and Charges for Wastewater Systems, Manual of Practice 27 (WEF)
- Manual M1, Principles of Water Rates, Fees and Charges (AWWA)
- Manual M5, Water Utility Management (AWWA)
- The Effective Water Professional (WEF)
- Water and Wastewater Finance and Pricing: The Changing Landscape
- Water and Wastewater Rate Survey (conducted and published collaboratively with AWWA and Raftelis)
- Water Rates, Fees, and the Legal Environment (AWWA)



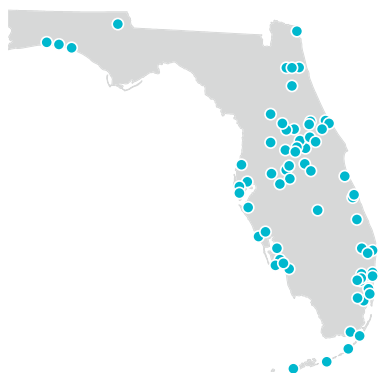
Sample Deliverables

DESIGNED AND DEVELOPED BY RAFTELIS

Full copies of these deliverables can be provided upon request.



Raftelis' staff have extensive experience serving Florida public sector agencies. The map below and the matrix to the right show some of the Florida public sector entities/utilities that Raftelis staff have served.

[illegible]

This matrix shows a brief sample of some of the utilities throughout the U.S. and Canada that Raftelis staff have assisted and the services performed for these utilities.

[illegible]

| Client | Finance | | | | | | | | Organization | | | | | | Technology | | | |
|--|--|--|-----------------------|----------------------------------|-------------------------------|---------------------------|-----------------------------|--|--------------------------|---|--|----------------------------|--|--------------------|--|------------------------------|---|--------------------|
| | Affordability Analysis & Program Development | Capital Improvements Planning/Prioritization | Debt Issuance Support | Economic & Financial Evaluations | Financial Planning & Modeling | Financial Risk Management | Rate, Charge, & Fee Studies | Stormwater Utility Development & Support | Business Risk Management | Organizational, Governance, & Operations Optimization | Performance Measurement & Benchmarking | Program Planning & Support | Stakeholder Engagement & Communication | Strategic Planning | Billing, permitting, & Customer Information Audits | Business Process Development | Data Management, Analytics, & Visualization | Software Solutions |
| MO Metropolitan St. Louis Sewer District | | ● | ● | | ● | ● | ● | ● | | ● | | | | | | | | |
| MS Jackson, City of | ● | ● | | | ● | ● | ● | | | ● | | | | | | | ● | |
| NC Asheville, City of | | ● | ● | | ● | ● | ● | | | ● | | | ● | | | | | |
| NC Charlotte Water | ● | ● | | | ● | ● | ● | | | | | | | | | | | |
| NC Durham, City of | | ● | ● | | ● | ● | ● | | | | | | | | | | | |
| NC Fayetteville, City of | | ● | ● | | ● | ● | ● | ● | | | | | | | | | | |
| NC Raleigh, City of | | ● | ● | | ● | ● | ● | ● | | ● | | ● | | | | | | |
| NH Concord, City of | | ● | | | ● | ● | ● | | | | | | | | | | | |
| NJ Brick Township Municipal Utilities Authority | | | | | ● | ● | ● | | | | | | | | | | | |
| NJ Jersey City Municipal Utilities Authority | | ● | | | ● | ● | ● | | | | | | | | | | | |
| NV Henderson, City of | | ● | | | ● | ● | ● | | | | | | | | | | | |
| NY Erie County Water Authority | | | | | ● | ● | ● | | | | | | | | | | | |
| NY New York City Water Board | | ● | | | ● | ● | ● | | | | | | | | | | ● | |
| OH Akron, City of | | ● | | | ● | ● | ● | | | | | | ● | | | | | |
| OH Franklin County | | ● | | | ● | ● | ● | | | ● | | | | | | | | |
| OH Montgomery County Environmental Services | | ● | | | ● | ● | ● | | ● | ● | ● | | | ● | | ● | ● | ● |
| OH Northeast Ohio Regional Sewer District | ● | ● | | | ● | ● | ● | ● | ● | | ● | | | | | | ● | ● |
| OK Chickasha, City of | | | | | | | ● | ● | ● | ● | ● | | ● | | | ● | ● | |
| OK Stillwater Utilities Authority | | | | | ● | ● | ● | | | | | | | | | | ● | |
| OR Portland Bureau of Water, City of | | ● | ● | | ● | ● | ● | | | | | | | | | | ● | |
| PA Capital Region Water | ● | ● | ● | | ● | ● | ● | ● | | | | | ● | ● | | | | |
| PA Philadelphia Water Department | ● | ● | ● | | ● | ● | ● | | ● | ● | ● | ● | ● | | | ● | ● | ● |
| PA Pittsburgh Water and Sewer Authority | ● | ● | ● | ● | ● | ● | ● | | ● | ● | ● | | ● | ● | | ● | ● | ● |
| RI Newport, City of | | ● | ● | | ● | ● | ● | | | | | | | | | | | |
| RI Providence Water Supply Board | | ● | | | ● | ● | ● | | ● | ● | ● | | | | | | | |
| SC Greenville Water | | | | | ● | ● | ● | | | ● | | | | | | | | |
| SC Mount Pleasant Waterworks | | ● | | | ● | ● | ● | | | | | | | ● | | | | |
| TN Johnson City, City of | ● | ● | ● | | ● | ● | ● | | | | | | | | | | | |
| TN Metro Water Services of Nashville and Davidson County | | ● | ● | | ● | ● | ● | ● | ● | | ● | | ● | ● | | | | |
| TX Austin, City of | | ● | ● | | ● | ● | ● | | ● | | ● | | | | | | | |
| TX Dallas, City of | | ● | | | ● | ● | ● | ● | | | | | ● | | | ● | ● | |
| TX El Paso Water Utilities | | ● | ● | | ● | ● | ● | | | | | | ● | | | | ● | ● |
| TX North Texas Municipal Water District | | ● | | ● | | | | | ● | ● | ● | | ● | ● | | ● | | ● |
| TX Round Rock, City of | | | | | | | ● | | | | | | | | | | | |
| TX San Antonio Water System | ● | ● | | | ● | ● | ● | | | | | | ● | | | | | |
| UT Salt Lake City | | | | | ● | ● | ● | | | | | | ● | | | | | |
| VA Newport News Department of Public Utilities, City of | | ● | ● | | ● | ● | ● | | | | | | | ● | | | ● | |
| VA Richmond Department of Public Utilities | ● | ● | | | ● | ● | ● | ● | | | | | ● | | | | ● | |
| VA Suffolk, City of | | ● | ● | | ● | ● | ● | | | | | | | | | | | |
| VT Burlington, City of | | ● | ● | | ● | ● | | | | | | | | | | | | |
| WA Tacoma, City of | | | | ● | | | ● | | | | | | | ● | | | ● | |
| WI Milwaukee Metropolitan Sewerage District | | ● | | | ● | ● | ● | | | | | | | | | | | |
| WI Milwaukee Water Works | | ● | | | ● | ● | ● | | | | | | | | | | | |
| WV Charleston Sanitary Board | | | | | | | ● | | | | | | | | | | | |
| Can Calgary, City of | | ● | | | ● | ● | | | | ● | | | | | | | ● | |
| PR Puerto Rico Aqueduct and Sewer Authority | | ● | ● | | ● | ● | | | ● | ● | ● | | ● | | | | | |



SPECIALTIES

- Utility management
- Operational efficiency and effectiveness
- Performance management (measurement, benchmarking, etc.)
- Staffing assessments
- Asset management
- Capital planning and budgeting
- Organizational capacity building

PROFESSIONAL HISTORY

- Raftelis: Senior Manager (2016-present)
- Portland Water District: Board of Trustees - Administration and Finance Committee Chair (2014-present)
- Scarborough Sanitary District: Board of Trustees Member (2013-2016)
- Woodard & Curran, Inc.: Vice President – Utility Management Practice Leader (2012-2016)
- CDM Smith, Inc.: Senior Management Consultant (2004-2012)
- Bath Water District: General Manager/Superintendent (1995-2004)
- State of Maine – Drinking Water Program: Surface Water Treatment Coordinator (1993-1995)

EDUCATION

- Master of Public Policy and Management – University of Maine (2010)
 - > Masters Certificate in Performance Management – University of Maine (2009)
 - > Masters Certificate in Non-Profit (Public Sector) Management – University of Maine (2008)
- Bachelor of Science in Engineering (Minor Economics) – Rensselaer Polytechnic Institute (1993)

PROFESSIONAL MEMBERSHIPS

- American Water Works Association – Chair of Strategic Management Practices Committee and Member of the Benchmarking Committee
- Water Environment Federation – Utility Management Committee
- New England Water Environment Association – Utility Management Committee
- New England Water Works Association
- Maine Water Utilities Association – Past Board of Directors Member

REGISTRATIONS & CERTIFICATIONS

- Certified Lean Six Sigma Master Black Belt
- BAM-I (CTAM) Certification in Infrastructure Asset Management (Indiana University)
- Class IV Water System Operator (lapsed)
- Conflict Resolution Program – Harvard Business School

Seth Garrison

Senior Manager

Mr. Garrison has 25 years of executive-level experience leading, consulting with, and regulating utilities of all sizes, both public and private. He combines over 14 years of hands-on experience as the former General Manager of a regional utility and as a board member of two water and wastewater utilities, with an additional 15 years of consulting experience advising several of the largest and best-known utilities in the U.S., the U.S. Agency for International Development (USAID), and several foreign governments on utility management, organizational development, operations and maintenance practices, and strategy. Mr. Garrison has extensive knowledge of performance management techniques (Lean Six Sigma, conflict resolution, negotiation strategy, etc.), advanced O&M practices (RCM, Predictive Maintenance, CMMS, etc.), and change management frameworks (from Kotter, Lewin, Garvin, etc.).

Mr. Garrison has a history of seeking challenging assignments where he can apply his extensive utility experience and multi-disciplinary education in management, economics, and engineering to complex problems. At the young age of 24, he became the General Manager of a failing New England utility that was teetering on the edge of financial insolvency. With the help of several new staff, he turned the organization around and into an award-winning organization. At the time he was hired, Mr. Garrison was the youngest utility director of a utility serving over 10,000 people in the U.S. He has worked internationally, helping the governments of Afghanistan, Jordan, Guam, Mozambique, and the U.S. implement utility management practices at the national level, while simultaneously assisting various development agencies with the implementation of more than \$500 million in infrastructure and programmatic spending. In addition, he has assisted well-known utility organizations in the U.S. like Pittsburgh Water and Sewer Authority, Metro Water Services (Nashville), Boston Water and Sewer Commission, New York City DEP, Denver Water, Philadelphia Water, North Texas Municipal Water District, and PRASA (Puerto Rico) solve complex management and infrastructure strategic challenges.

Mr. Garrison is the Chair of the AWWA's Strategic Management Practices Committee, which is working to re-write the AWWA's M5 Utility Management Manual – the industry guide for utility management practices. He is also working on AWWA's Benchmarking Performance Indicators for Water and Wastewater as a member of the Benchmarking Committee.

RELEVANT PROJECT EXPERIENCE

Management and Performance Improvement Experience

Polk County Utilities Department (FL)

Mr. Garrison served as Project Manager on an organizational and operations assessment of Polk County Utilities Department (PCUD) Water and Wastewater Utilities Division. He worked with JSK Consulting to assess Polk County's water and wastewater Operations & Maintenance Division's organizational structure, maintenance practices, staffing and cost structures to determine where there are areas for efficiency improvement, cost savings and organizational enhancement. Where applicable, Operations & Maintenance Division information was benchmarked against operations and performance data from similar utilities. The assessment recommended implementable ways to save money, improve services and maximize resources.

Pittsburgh Water and Sewer Authority (PA)

Threatened with privatization and challenged by Lead and Copper Rule exceedances and high-profile infrastructure failures, Pittsburgh Water and Sewer Authority (PWSA) was labeled a "failing utility" by many. Thanks to strong leadership and the help of Mr. Garrison and the team from Raftelis, things have turned around. Raftelis provided assistance with both the financial and the organizational aspects of PWSA. Raftelis was instrumental in helping PWSA enact a series of rate adjustments totaling 51% over 3 years to provide the necessary revenue to hire additional staff and begin fixing a decades-long backlog of infrastructure needs. Mr. Garrison, who worked side-by-side with PWSA leadership, helped address major organizational challenges. Mr. Garrison and the Raftelis team provided an aggressive Compliance and Organizational Plan that convinced business leaders and community officials that PWSA had a framework for success. They then helped PWSA implement elements of the plan including creation of a new PWSA Performance Improvement office, aligned PWSA practice with Pennsylvania Public Utility Commission requirements, and fixed a series of onerous legacy rules about hiring, resource sharing and metering that limited performance. PWSA is now on a path to success and is rapidly gaining the confidence of its customers.

North Texas Municipal Water District (TX)

NTMWD is one of the largest regional water, wastewater and solid waste utilities in the US. The District serves a rapidly growing population of approximately 2 million people in 90 communities in 10 counties in the North Dallas metro region. With over 700 employees and 15 separate treatment facilities spread over an area the size of Delaware, there are multiple organizational challenges. These challenges are aggravated by chronic water resource limitations and explosive population growth; the region is expected to double in size by 2050. Mr. Garrison and the team from Raftelis performed a series of detailed assessments of the District's organization and staffing, as well as key practices, and recommended performance improvements. The effort included benchmarking characteristics against best appropriate practices and metrics from world-class utilities and

peers using industry-accepted metrics. The recommendations were instrumental in justifying the hiring of over 50 staff and realizing performance improvements in the areas of maintenance, asset management and training.

Puerto Rico Aqueduct and Sewer Authority (Puerto Rico)

PRASA has made considerable progress becoming more efficient in the last 10 years; reducing its workforces from over 7,000 to now roughly 5,000 employees, eliminating over a dozen treatment facilities, and increasing productivity by over 10 percent. Despite these positive changes, PRASA still deals with a relatively poor service population, high energy costs, and restrictive Commonwealth rules and regulations. Mr. Garrison and the Raftelis team performed an assessment of PRASA's organization, operations and finances to find additional opportunities for efficiency. The project is also providing an independent assessment of the organization for perspective buyers of PRASA bonds and commercial debt.

Metro Water and Wastewater Services of Nashville (TN)

Mr. Garrison has helped Metro Water and Wastewater Services of Nashville (MWS) with several organization-wide projects over the last 10 years. He has worked with MWS during their strategic planning process to identify organizational culture characteristics using the OCAI tool that could be leveraged to increase performance. This led to a series of implementation activities in the MWS Strategic Plan. He also helped them optimize their operations, design, capital planning and asset renewal practices to increase efficiency and reduce costs for their 4,500-mile distribution system. Using a risk-based assessment approach, supported by hydraulic modeling, field data collection and GIS analysis, he developed operations, testing and planning standards for MWS infrastructure based on newly-established Levels of Service goals. These Levels of Service goals ensure that infrastructure is not over or under designed and that operations and maintenance activities are executed at the lowest possible costs to ensure services are reliably provided.

Orange County Utilities (FL)

Mr. Garrison and a team from ATKINS (formerly PBS&J) performed a comprehensive multi-year assessment and facilities evaluation for the Water Division, which serves the greater Orlando, Florida metropolitan area. The project established and evaluated key performance indicators (KPIs) to improve the efficiency of the utility. The program resulted in a plan for addressing performance gaps. The WCMOM program received considerable national recognition including full length articles in the January 2010 AWWA Journal and the June 2010 New England Water Works Association Journal.

Lowell Regional Water Utility (MA)

Mr. Garrison led a team that evaluated operations and maintenance (O&M) practices, planning practices, and staff resource allocations to develop efficiency enhancement recommendations. Using business process mapping techniques and a combination of qualitative and quantitative performance improvement methods, some derived from Lean Six Sigma, the effort identified ways to cut costs through

staff and process changes, while increasing productivity and increasing value to customers. The study is predicted to save 5-10% on staffing expenses per year if recommendations are fully implemented; equating to over \$1.25 million of savings over 10 years.

City of Concord (NH)

Concord has had many staffing challenges in their DPW, including dealing with an aging workforce, staff terminations, and outdated staff skills. Mr. Garrison helped Concord get a handle on resolving these issues by providing a high-level assessment of select business units and operations. The study produced showed how they could realign the existing workforce, provide training, and enhance skills to save money and increase productivity. Concord has implemented several of the recommendations, including realigning staff within the water services area.

City of Waterbury (CT)

The City of Waterbury maintains a large municipal workforce to provide an array of public works and utility services. Divided into several business units, these entities have central oversight at the mayoral level but are largely independent in their operations and finance activities. Mr. Garrison provided a detailed assessment of the staffing levels, practices, and organization that included benchmarking against other similar municipal government units. The study provided opportunities for greater collaboration between departments and made recommendations to enhance service delivery. Waterbury has successfully implemented several of the recommendations, including changing employee classifications for new hires resulting in better utilization of labor resources.

City of Haverhill (MA)

Seeking to identify opportunities to improve efficiency and reduce operational costs, and confronted with a challenge from a contract operations firm promising millions in cost savings, Haverhill contacted Mr. Garrison and his team to evaluate chemical use, power utilization, residuals handling and disposal, utility staffing, and capital planning. The team compared metrics and the operation, maintenance, and management of the Division against “best-in-class” public water and wastewater utilities and contract-operated facilities. The evaluation identified actions that will save over \$1 million dollars in operating costs per year.

Town of Tisbury (MA)

Mr. Garrison led a team of consultants that conducted a comprehensive audit of town government services looking for areas of inefficiency, overlap of services and enhanced service potential.

Asset Management and Strategic Planning Experience

City of Westminster (CO)

Westminster is a thriving suburb of Denver with a well-balanced mix of commercial and residential properties and a growing population, who like many other western U.S. communities, struggles with limited water resources and projected infrastructure costs.

Raftelis assisted Westminster by developing detailed utility financial and cost of service projections, allowing the City to justify a series of rate adjustments and capture adequate revenue to address system needs. A critical part of the engagement was validating and helping Westminster adjust utility capital renewal and growth projections. This involved carefully examining lifecycle cost projections and renewal intervals. With hundreds of millions of dollars at stake, Raftelis was able to help Westminster find the optimal mix to minimize rate adjustments, while maintaining levels of services and managing lifecycle costs.

Cobb County-Marietta Water Authority (GA)

Mr. Garrison lead a team that assessed the full spectrum of asset management activities at CCMWA, the second largest water supplier in Georgia, serving 800,000 people through 13 wholesale contracts. With nearly \$500 million in assets including dams; reservoirs; over 200 miles of transmission mains; and two treatment plants with a combined capacity of 180 million gallons per day, developing an efficient and cost-effective asset management strategy is imperative. The project included an assessment of financial, operation and maintenance activities, capital planning and the methods for cataloging and tracking information through their computerized maintenance management system (CMMS). Using a series of quantitative and qualitative review steps, the team identified opportunities for improvement. Using multiple assessment methods in a coordinated manner revealed not only which practices were strong and weak, but also illuminated potential reasons for the scoring. Recommendations are targeted to save the organization tens of millions over the then next 5 years.

Anchorage Water and Wastewater Utility (AK)

In partnership with CDM Smith, Mr. Garrison performed a comprehensive assessment of all the assets at two major AWWU facilities, the Ships Creek Water Treatment Facility and Asplund Wastewater Treatment Facility, to determine asset renewal (rehabilitation and replacement) priorities and implementation strategies for advanced risk-based Asset Management practices. These elements were incorporated into an overall facilities master plan. The project identified maintenance strategies, data collection methods, new approaches, and capital prioritization techniques to ensure plant sustainability at the lowest lifecycle cost. Implementing risk-based Asset Management practices was especially important for AWWU given the additional challenges of a harsh climate, the relative remoteness of the facilities, and the seismic hazards in the region.

Polk County Utilities Department (FL)

Mr. Garrison served as Project Manager on an organizational and operations assessment of Polk County Utilities Department (PCUD) Water and Wastewater Utilities Division. He worked with JSK Consulting to assess Polk County’s water and wastewater Operations & Maintenance Division’s organizational structure, maintenance practices, staffing and cost structures to determine where there are areas for efficiency improvement, cost savings and organizational enhancement. Where applicable, Operations & Maintenance Division information was benchmarked against operations and performance data from similar utilities. The assess-

ment recommended implementable ways to save money, improve services and maximize resources.

City of Portland (ME)

Mr. Garrison helped Portland increase efficiency and minimize the lifecycle cost of sanitary sewer, stormwater and combined sewer systems through a comprehensive organizational assessment, Capital Improvement Plan (CIP), and process enhancement program. The effort applied performance improvement, Capacity, Management, Operations and Maintenance (CMOM) principals as well as advanced Asset Management and Effective Utility Management (EUM) technics that were developed in larger municipalities like Boston and Philadelphia to minimizing operations, maintenance and capital renewal costs. The nearly \$1 million consulting effort will generate both short and long-term CIP, operations and organizational plans, as well as improve the value of their GIS and computerized maintenance management system (CMMS) - City-Works systems. Mr. Garrison also worked with a team of City and sub-consultant staff from Amec to develop a new stormwater fee and wastewater rate that will more equitably allocate stormwater and combined sewer costs. The new fee rectifies the issues associated with high volume wastewater users that contribute little to the stormwater system, paying for the bulk for the stormwater and combined sewer improvements. Cost are reallocated to those users that contribute the most stormwater.

Louisville Water Company (KY)

Mr. Garrison was responsible for directing the operations and management, as well as the Asset Management and organizational review tasks of the Facilities Plan project. This included reviewing existing LWC business practices, suggesting changes that would increase organizational efficiency (productivity), and recommending innovative programs to address strategic plans. Mr. Garrison developed a comprehensive Asset Management strategy to bridge several of LWS's existing activities including O&M activities, business case justifications, capital planning and annual budget development. The total value of services provided was more than \$2 million.

Boston Water and Sewer Commission (MA)

Mr. Garrison directed the Asset Management, O&M and technology planning components of a multi-year water distribution system master planning and capital improvement study for BWSC's 1,200-mile pipe network. He was responsible for assessing the condition and predicting the life expectancy of pipes through an extensive, multi-year field sampling program and by modeling the effects of various degradation factors (age, material, performance characteristics, flow conditions, etc.) on pipe condition, longevity and performance. Using cutting-edge Asset Management methods, and performance indicators, his team developed a 20-year Capital Improvement Plan that is saving over \$6 million per year in capital costs. He also developed recommendations for improved operations management systems (CASSWORKS CMMS, GIS and CIS) to assist with O&M, AM, and capital planning. A paper on the capital planning approach employed titled *The Art of Advanced Capital Planning to Control Risk* appeared in the December 2011 NEWWA Journal. It was awarded best paper by NEWWA for 2011.

Northeast Ohio Regional Sewer District (OH)

Mr. Garrison managed a team that developed a comprehensive set of asset management and capital prioritization practices for NEORS's wastewater treatment and collections systems, valued at several billion dollars. The multi-year program impacted every aspect of asset use, management, maintenance and renewal. Components include a new capital prioritization process based on risk; enhanced maintenance practices using RCM, PM and other techniques; a revised asset registry; comprehensive training activities and organizational development activities; and improved condition assessment and criticality measures.

Philadelphia Water Department (PA)

Mr. Garrison led a team that redesigned PWD's existing buried infrastructure rehabilitation and replacement (renewal) prioritization system for their 4,000-mile pipe network. The revised system utilizes statistical modeling techniques to determine which factors are correlated with pipe degradation and by how much, thus eliminating many of the assumptions associated with renewal and condition assessment programs. These factors will be used to develop service life curves for long-term macro models which will guide capital planning and budgeting. Factors that are correlated with pipe degradation will be combined with consequence of failure information available in various GIS layers to develop a robust micro model for prioritizing individual pipe segments for annual capital renewal.

Denver Water (CO)

Mr. Garrison developed a new water transmission and distribution pipe Capital Improvement Plan (CIP) prioritization process for Denver's 5,000-mile pipe network that uses Asset Management techniques and advanced modeling (CARE-W derived suite of software and MWH CapPlan). The prioritization of improvements was based on "risk" criteria using a Triple-Bottom-Line framework that considers social, environmental and economic criteria. The new CIP prioritization process determines renewal and replacement schedules for several billion dollars of Denver Water pipeline assets.

New York City Department of Environmental Protection (NY)

Mr. Garrison coordinated a team of engineering, management and technology integration experts to create an agency-wide asset registry based on a 6-level hierarchy for NYC DEP's extensive systems of treatment, storage and 7,000 miles of pipe assets. The asset registry supports risk-based prioritization and scheduling of renewal priorities of major NYC DEP water and wastewater assets. The completed database provides a tool for measuring the aggregate risk of failure for major system assets that have a total value of nearly \$100 billion.

Town of Wolfeboro (NH)

Wolfeboro is an idyllic New Hampshire town on the shores of Lake Winnepesaukee with a large seasonal population. The climate and rural nature of the area create many challenges for taking care of town assets like roads, utilities, and public buildings. Faced with tight budgets and high service expectations from seasonal visitors, Mr. Garrison helped them institute better organizational practices to manage their assets, and lead a multi-year effort to enhance the

use of GIS, streamline work processes, and lower the lifecycle cost of assets. The effort has included benchmarking, asset condition assessments, modeling, and business process design.

Connecticut Water Company (ME)

Mr. Garrison lead a team from Woodard & Curran and Tata & Howard for The Connecticut Water Company, the new owner of the Biddeford & Saco Water System, to review all aspects of source, treatment, transmission and distribution. The review produced a comprehensive master plan with extensive recommendations about treatment and distribution system upgrades, prioritized to consider rate impacts, community priorities, condition, and criticality factors. The project leveraged many of the tools and techniques piloted at larger systems to produce a high defensible roadmap for incremental system improvement. The plan goes far beyond the traditional list of capital projects contained in most master plans. It suggests operations and planning processes to proactively address a range of challenges.

Sanford Water District (ME)

Using cutting edge prioritization and capital planning processes, Mr. Garrison lead a team that developed a highly defensible approach to dealing with water main replacements, and regular well rehabilitation and maintenance. The project heavily leveraged “risk-based” asset management approaches and the latest modeling techniques. While this process sounds complex and expensive, in actually it is not. Sanford Water District will be able to update the plan and use all the outputs independently going forward with minimal additional investment in technology.

City of South Portland (ME)

Assisted the City of South Portland with development of their Asset Management program, using element of EPA’s framework and incorporating the latest thinking on lifecycle asset practices. Starting with the wastewater treatment plant assets, a model is being developed for planning renewal activities and for estimating asset management activities. The next steps will include development of better maintenance tracking and business case analysis methods, and the inclusion of wastewater collection and pump system assets.

Newnan Utilities (GA)

Mr. Garrison helped Newnan Utilities develop a comprehensive Asset Management plan complete with mission, vision, performance measures, and program elements for their organization. The mid-sized utility provides water, wastewater and power distribution serves to over 20,000 customers in suburban Atlanta.

Lawrence Water and Wastewater Department (MA)

Lawrence is tackling deficiencies in their water and wastewater operations and management structure head on with an aggressive multi-year management effort lead by Mr. Garrison and a group of technical, planning and financial experts. The ongoing project is developing performance benchmarks, new process workflows, more efficient practices and streamlined approaches to lingering problems like deteriorating infrastructure, staff productivity, billing accuracy

and a range of other topics. Changes in metering and billing practices have already generated over \$500,000 per year in additional revenue without raising rates.

Water Research Foundation (CO)

Mr. Garrison was Project Manager for a major international research effort for the Water Research Foundation to address the people, organizational and cultural problems commonly cited as obstacles to adopting Asset Management (AM) practices at utilities. In addition to a comprehensive research document the project generated a “toolkit” to help utility managers change the culture and organization of their organizations to make them more receptive to major new initiatives like AM. Mr. Garrison and the research team tested the tools with the help of 30 major utilities. Participating utilities included providers for the cities of Las Vegas, Anchorage, Seattle, Boston (MWRA), San Jose, Colorado Springs, Chicago, as well as utilities in Australia and New Zealand.

International Work

US EPA Task 4 Contract to Guam Waterworks Authority (GWA), Guam

Mr. Garrison led a major initiative to transform the way GWA manages its operations, maintenance and capital planning functions. The project, paid for through a \$2 million EPA grant, reorganized how asset information is collected, stored and managed. This includes the business process to support asset management activities, software systems and operations and maintenance practices.

US Agency for International Development (USAID), Amman, Jordan

Mr. Garrison was the leader of a team of international and Jordanian consultants that assessed the operations and maintenance (O&M), organizational and managerial capacity of three large cities in Jordan, Jerash, Tafilah and Ma’an, that serve a total of 500,000 people. The project involved reviewing staffing levels, training opportunities, and organizational structures as well as cultural and operations factors impacting sustainable performance. The result was a series of culturally-appropriate interventions to improve existing performance and enhance utility effectiveness.

US Agency for International Development (USAID), Kabul, Afghanistan

Mr. Garrison was Program Deputy Director and Institutional Advisor for the \$43 million Afghanistan Urban Water Supply and Sanitation Program (AUWSP) under USAID, the development arm of the US State Department; the comprehensive water sector initiative involved major construction, national level policy development and capacity building initiatives throughout Afghanistan. He managed an international staff of over 100 expatriates, local and third country national personnel of various educational backgrounds and disciplines that spoke 12 different native languages. He provided institutional capacity development services to the Afghanistan Ministry of Urban Development and Housing (MUDH), including the provision of policy documents, advised MUDH on policy matters

and provided a range of related advisory services. He was a senior advisor to the Minister of MUDH and the President of the Central Agency of Water Supply and Sanitation (CAWSS). Mr. Garrison was co-author of the Urban Water Supply and Sewage Sector Policy for Afghanistan and contributing editor to the Afghanistan National Policy on Urban Environmental Sanitation; these national-level policies guide the operation, administration and organization of water and wastewater regulatory agencies and utilities within Afghanistan. Finally, Mr. Garrison was the leader of a multi-national feasibility study team that assessed the physical and organizational conditions at seven provincial capitals for future infrastructure development. The population of these cities ranged from 10,000 to over 500,000.

US Millennium Challenge Corp. (MCC), Maputo, Mozambique

Mr. Garrison assessed the feasibility of major water infrastructure programs for MCC, a division of the US State Department, in the context of a \$500 million development aid package to the Government of Mozambique. He acted as the utility management and operations consultant for the project team. His project duties included analysis of the financial, managerial and operations capacity of large utilities in northern Mozambique to determine a sustainable level of infrastructure, the degree of technological sophistication that was manageable and the level of development that was appropriate for the economic conditions.

Expert Witness & Litigation Support

City of Hastings, et ano. v. Associated Electric & Gas Insurance Services, Inc. d/b/a AEGIS, et al. (Hastings, Nebraska) - Steptoe & Johnson, LLP

Mr. Garrison provided a range of expert witness services for Steptoe & Johnson, LLP, who represented a group of insurance companies named in a lawsuit alleging contamination of ground water resources in and around the vicinity of Hastings, Nebraska. Expert witness services provided include: assessment of costs and capital investments that were allegedly associated with a municipal water system; development of a GIS database showing municipal water system capital investments over a period of several decades by type; inventorying municipal water system capital assets installed during the period of suspected contamination; and categorization of regulatory impacts of Safe Drinking Water Act regulations on a municipal water system.

Hazard Mitigation and Resiliency Planning

Ogunquit Sewer District, Ogunquit, Maine

Mr. Garrison and a multi-disciplinary team of planners, coastal modelers, and wastewater specialists evaluated various adaptation strategies for the Ogunquit Sewer District, which operates several wastewater facilities in a highly sensitive coastal zone. Numerous pump stations and their wastewater plant are subject to flooding, storm surge and sea level rise risks. The team considered a range of strategies including hard infrastructure solutions to beach nour-

ishments and other “soft” infrastructure strategies. The solutions were considered in the context of existing asset aging and Asset Management practice.

Rhode Island Department of Environmental Management (RIDEM)

Mr. Garrison served as a Technical Advisor to support the project team on the evaluation of implications of climate change on all 19 wastewater treatment and collection systems as well as associated infrastructure throughout the state. The project includes working closely with the wastewater facility operators to understand and assess climate change related risks to treatment facilities, pump stations and combined sewer overflows. A risk analysis matrix for each WWTF will accompany the assessment and help prioritize those components subject to the greatest overall risk, including regulatory, age-related and growth/expansion risks. Individual facility profiles with educational outreach materials and fact sheets will be developed to promote awareness among community residents and public officials and to facilitate future discussions.

Harvard University, Cambridge (MA)

Mr. Garrison served as the Technical Advisor to assist Harvard University with protecting its Blackstone Steam Plan from severe weather damage. The project includes developing a plan to protect the Plant from wind and water damage associated with severe weather, while meeting the historic preservation requirements. Identifying areas of risk, understanding their likelihood of occurrence, identifying protective measures, and assigning planning-level costs to implement the highest priority mitigation actions are the will be the main outcomes of the project. The University will use this information in the capital planning process beginning in November 2015.

Town of Provincetown (MA)

Mr. Garrison served as the Project Manager and worked closely with the Provincetown Department of Public Works to complete a preliminary wastewater infrastructure vulnerability assessment focused on the impacts of natural hazards. Work included identifying the most vulnerable components of the wastewater system and suggesting potential mitigation measures and preparing a Coastal Zone Management application for funding a larger assessment.

Professional Experience

Portland Water District & Scarborough Sanitary District: Board of Trustees (2013 – Present)

Mr. Garrison is a member of the Board of Trustees of the Portland Water District (PWD) and the Scarborough Sanitary District (SSD). He directs the activities and policies of PWD, which serves a population of over 225,000 people in 13 southern Maine communities with water, wastewater, and environmental services, and SSD, which provides wastewater services to the Town of Scarborough with a population of approximately 20,000.

Woodard & Curran, Inc.: Vice President – Utility Management Practice Leader (2012 – 2016)

Leader of the firm's efforts to help utilities and municipal entities improve performance through more effective management, operations practices, and asset management; encompasses capital planning and a range of management consulting services.

CDM Smith: Senior Management Consultant (2004 – 2011)

Senior management consultant with primary practice areas in utility management, operations & maintenance, performance assessment; and Asset Management, both domestically and internationally. Mr. Garrison lead the firm's Utility Management Discipline, which had approximately 35 members and was the eastern US group leader for CDM's Financial and Asset Management Practice.

Bath Water District, Bath, Maine: General Manager (Superintendent) (1995-2004)

Mr. Garrison was the senior executive accountable for a multi-million-dollar budget and \$25 million worth of water system assets, including a water treatment plant, multiple water storage facilities, an office building and a water distribution system. He was responsible for water supply to a residential and commercial population of over 20,000, including an industrial base that consisted of a nuclear power station, a fish-canning factory, Bath Iron Works (BIW) Naval Shipyard and several other large commercial users. Seth improved utility efficiency by reducing unaccounted for water from 48 percent to less than 10 percent and by trimming operations expenditures by 30 percent through operations and personnel optimization; improvements were realized over 5 years. He oversaw administration activities for all construction by BWD; projects completed included \$3 million dollar upgrade to chemical storage/feed systems at the water treatment plant, instrumentation (SCADA), disinfection systems, waste treatment and distribution storage. He enhanced public relations by creating a PR video, customer newsletters, and several public awareness activities targeted at key groups. The effort was awarded an EPA Consumer Awareness Award. He also won several grants and loans including: five Federal Community Development Block Grants, a Maine State Housing Authority grant, and multiple Maine Drinking Water Program State Revolving Loan Fund (SRF) grants. The total value was more than \$10 million; and several awards including a MMA Leaderships Award and acceptance into EPA's Regional Partners for Change Program.

Maine Drinking Water Program, Augusta, Maine: Surface Water Treatment Coordinator (1993-1995)

Mr. Garrison provided regulatory oversight for approximately 120 surface water systems ranging in size from .1 MGD to larger than 30 MGD and covering an array of technologies from slow sand and conventional filtration to ozone disinfection. He served as the state coordinator of the U.S. EPA Surface Water Treatment Rule, Information Collection Rule, Ground Water Disinfection Rule and Disinfectant/Disinfection Byproducts Rule.

HONORS & AWARDS

- New England Water Works Leadership Award
- US EPA Consumer Awareness Award
- Maine Water Utilities Association Leadership Award
- Maine Water Utility Association President's Award
- CDMU Contributor Award
- Quick Hit Award for the OCU Water CMOM
- Team Values in Action Award for the MCC Mozambique Due-Diligence Project
- Team Values in Action Award for the Afghanistan Urban Water & Sanitation Program

PUBLICATIONS AND PRESENTATIONS

- "Utilities Improve Performance Using Private Business Techniques" presented with Brian Pena, City of Lawrence Water and Sewer Commissioner, at the AWWA Annual Conference & Exhibition, June 2015 in Anaheim, CA, and at the NEWEA Annual Conference, January 28, 2015.
- "Asset Management for Sanitary Sewer Systems - Beyond CMOM and Asset Management" presented at the 2014 APWA Congress, August 17, 2014 in Toronto, Ontario.
- "Establishing Levels of Service for Your Utility" presented at the GAWP Conference, June 18, 2014.
- "Creating Change Starts with an Organizational Assessment: A Field-Tested Approach" presented at the 2014 NEWEA Annual Conference, February 27, 2014 in Boston, MA; and the AWWA ACE, June 11, 2014 in Boston, MA.
- "Effective Asset Management Can Save You Money" presented at the Connecticut Operator Forum, February 20, 2013 in Waterbury, CT and July 16, 2014 in Manchester, CT; the 2012 Maine Municipal Association Annual Managers Retreat, October 4, 2012 in Augusta, ME; the Maine Town & County Manager's Association Annual Conference in Bangor, Maine; the Maine Wastewater Control Association Annual Meeting, April 26, 2013 in South Portland; and the NHPWA Annual Meeting, March 28, 2014.
- "Paying for CSO Mitigation and Aging Infrastructure: Are Stormwater Fees the Answer?" presented at the AWWA/WEF UMC March 13, 2013 in Phoenix, AZ.
- "Cobb County-Marietta Water Authority (CCMWA) Building on Past Successes to Streamline Operations and Optimize Asset Management" presented at the AWWA ACE, June 10, 2013 in Denver, CO; and the 2013 NEWEA Annual Conference, February 29, 2013 in Boston, MA.
- "Are We Doing a Good Job? Assessing How Cobb County-Marietta Water Authority (CCMWA) Manages their Assets" presented at the NYWEA Annual Conference, February 5, 2013 in New York City, NY.
- "Get the Most Value Out of Distribution and Collection Systems by Combining Tools" presented at the 2012 GAWP Annual Conference, July 7, 2012 in Savannah, GA.
- "Benefits of an Organizational Approach to Asset Management Northeast Ohio Regional Sewer District" presented at the 2012

NEWEA Annual Conference, February 23, 2012 in Boston, MA.

- Garrison, S., Remias, A., Markey, J. “Using an Organizational Approach to Infrastructure Management Improvements at Northeast Ohio Regional Sewer District to Achieve Lasting Results.” WEF/AWWA Utility Management Conference. February 1, 2012 (presentation and paper).
- Carolan, J.R., and Garrison, S.W., J. “The Art of Advanced Capital Planning to Control Risk.” NEWWA Journal. December 2011. Vol. 125, 4.
- “Why Adopting Asset Management Is Really About Organizational Change: Management Tools for Transforming the Way You Do Business” presented at the 2011 AWWA Annual Conference & Exhibition, June 15, 2011 in Washington D.C.
- “We’ve Fixed the Big Problems, Now What?: Making Decisions about Water Main Renewal in a Mature Asset Environment” presented at the 2011 AWWA/WEF Utility Management Conference, February 9, 2011 in Denver, Colorado.
- “Integrating GIS, Hydraulic Modeling, Failure Forecasting and Planning Software to Build a Better R&R Mousetrap” presented at the AWWA/WEF Utility Management conference, February 22, 2010 in San Francisco, California; November 16, 2010 at the North Carolina AWWA/WEF Section Annual Conference in Winston/Salem North Carolina; and at the South Carolina SCEC March 14, 2011 in Myrtle Beach, South Carolina.
- Carolan, J.R., and Garrison, S.W., J. “The Art of Advanced Capital Planning to Control Risk.” NEWWA Journal. December 2011. Vol. 125, 4.
- “Why Adopting Asset Management Is Really About Organizational Change: Management Tools for Transforming the Way You Do Business.” 2011 AWWA Annual Conference & Exhibition, June 15, 2011 in Washington D.C.



Catherine Carter

Manager

SPECIALTIES

- Strategic planning
- Comparative industry analyses
- Organizational assessments

PROFESSIONAL HISTORY

- Raftelis: Manager (2019-present); Senior Consultant (2016-2018); Consultant (2013-2015); Associate Consultant (2011-2012)
- The Institute for Sustainable Development (2009-2011)

EDUCATION

- Master of Public Administration – University of North Carolina Charlotte (2017)
- Master of Environmental Management – Duke University (2011)
- Bachelor of Science in Business/ Economics, Biology, Environmental Studies – Randolph-Macon College (2009)

Ms. Carter has a background in public administration and environmental management, and possesses extensive research and analytical skills. Her expertise lies in the areas of strategic planning, conducting assessments of organizational effectiveness practices, compiling and analyzing data, and benchmarking. Ms. Carter has participated in numerous financial and management studies for water, wastewater, and stormwater utilities and other public sector organizations across the country. Ms. Carter is active in the water and wastewater utility industry, having presented at several conferences and co-authored two recent articles on long-term rate increases in *Journal AWWA*. Ms. Carter also co-authored a chapter entitled “Public Outreach and Gaining Stakeholder Commitment,” for the Fourth Edition of the industry guidebook, *Water and Wastewater Finance and Pricing: The Changing Landscape*. Prior to working at Raftelis, Ms. Carter was a senior fellow at the Institute for Sustainable Development.

RELEVANT PROJECT EXPERIENCE

Brownsville Public Utilities Board, TX

At the successful conclusion of its 2013-2018 strategic plan, the Brownsville Public Utility Board (BPUB) retained Raftelis to assist with the development of an updated five-year strategic plan. BPUD is a large publicly owned electric, water, and wastewater service provider to more than 180,000 customers in south Texas. Ms. Carter is serving as Lead Consultant for this project. This engagement is a multi-year, designed to engage both the employees and a large number of the BPUB’s key stakeholders and customers. Major activities include leadership interviews, online stakeholder surveys, employee focus groups, and Board workshops. Raftelis is also tasked with developing and delivering an online strategy management system that will allow the organization to continuously measure, monitor, and report organizational progress and performance as it implements its new strategic plan.

Des Moines Metropolitan Wastewater Reclamation Authority (IA)

Ms. Carter served as the Lead Consultant/Co-Facilitator for the Des Moines Metropolitan Wastewater Reclamation Authority’s (WRA) recently completed strategic plan. In this role, she facilitated employee focus groups; interviewed the organization’s leadership, members of the WRA Board, and other stakeholders to provide feedback for the Foundation and Strategy Workshops; developed materials and interim deliverables to support project milestones; and developed the content for the WRA’s final strategic planning document.

This strategic planning process incorporated significant collaboration between members of the WRA Board of Directors and the WRA’s leadership team, with comprehensive input from both employees and outside stakeholders. The plan serves as a blueprint for future decision-making, and lays out a structure to ensure that goals and objectives retain relevance over time. By laying out a course of action, the plan represents a disciplined process to make fundamental decisions that will shape the WRA’s future.

Milwaukee Metropolitan Sewerage District (WI)

Ms. Carter served as the Project Manager for the Milwaukee Metropolitan Sewerage District’s (MMSD) strategic plan, which is on track to be adopted by the end

of 2018. MMSD is required by charter to complete a new strategic plan every three years, and the several strategic plans prior to the 2019-2021 plan had been completed internally. As Project Manager, Ms. Carter facilitated employee focus group sessions; co-led workshops with MMSD's Project Steering Team to conduct an environmental scan of external trends impacting MMSD and its service area; helped refine MMSD's vision, mission, and values and goals; created the content for MMSD's final strategic plan; and assisted in delivering an implementation planning workshop to help institutionalize the strategic planning process at MMSD.

Louisville Water Company (KY)

Ms. Carter served as the Lead Consultant for Louisville Water Company's (Louisville Water) recently completed strategic plan. Raftelis was engaged by Louisville Water in 2018 to facilitate the leadership team's development of a five-year strategic plan. The most critical success factors for this engagement were Louisville Water's desire to incorporate previous strategic planning efforts, be consistent with industry trends, and use existing measurement and reporting frameworks as a means to deeply engage the organization and to move forward. As Lead Consultant, Ms. Carter interviewed stakeholders, facilitated employee focus groups, managed an employee survey, co-facilitated workshops with the Core Strategic Planning Team, and developed content for the final strategic planning document. Additionally, Ms. Carter assisted in developing materials to support an organizational communication plan focused on releasing the strategic plan internally, which included a brief video, posters, and an anniversary party for Louisville Water.

Greater Cincinnati Water Works (OH)

Raftelis was engaged by Greater Cincinnati Water Works (GCWW) in 2017 to build on a long history of organizational strategic planning and facilitate the creation of a new plan for 2018-2022. Ms. Carter served as the project manager for this effort. To ensure engagement with internal and external stakeholders, the Raftelis team interviewed GCWW leadership, facilitated employee focus groups with each division, released and analyzed an employee survey with more than 450 responses, and conducted external interviews with more than 30 stakeholders. The resulting strategic plan highlights a revised vision and mission, as well as the six goal areas that GCWW has chosen to focus on for the next five years. Each goal area has assigned metrics, strategies, and key action items, which were developed by cross-divisional, multi-level Goal Teams.

Pittsburgh Water and Sewer Authority (PA)

Threatened with privatization and challenged by Lead and Copper Rule exceedances and high-profile infrastructure failures, Pittsburgh Water and Sewer Authority (PWSA) was labeled a "failing utility" by many. Raftelis provided assistance with both the financial and the organizational aspects of PWSA. Ms. Carter assisted with the development of an aggressive Compliance and Organizational Plan that convinced business leaders and community officials that PWSA had a framework for success. She is also assisting PWSA with implementation of elements of the plan including the creation of a municipal and commercial metering program,

which will align PWSA practices with Pennsylvania Public Utility Commission requirements.

Onslow Water and Sewer Authority (NC)

Raftelis was engaged by the Onslow Water and Sewer Authority (ONWASA) in 2017 to facilitate the creation of a strategic plan, to help set organizational priorities for its long-range capital improvement planning and budgeting. Stakeholder participation was gained through a workshop with the Board of Directors, employee focus groups, an employee survey, and a survey of municipal managers and the organization's advisory committee. The resulting plan addressed the substantial growth in the region, as well as ONWASA's need to be mindful of limited resources, through five goal areas: Workforce Development, Customer Experience, Communication and Partnerships, Financial Stewardship, and Reliable and Sufficient Infrastructure. Ms. Carter served as the project manager for this engagement.

Mount Pleasant Waterworks (SC)

Serving a coastal area outside of Charleston, SC, in 2017 Mount Pleasant Waterworks (MPW) completed its five-year strategic plan. Having accomplished much of what the original plan, and the 2014 plan update, had laid out, MPW initiated a new strategic planning process to set the organization's direction through 2023. Ultimately, the 2018 strategic planning effort resulted in a more streamlined plan, focused around the four target areas identified in the 2012 plan, and in line with the community's priorities. Each target area has between three and seven specific strategies, designed to move the area forward and build on the progress made during the implementation of the previous plan. Ms. Carter served as lead consultant for MPW's 2012 strategic plan, and the project manager for the recent plan update.

Metropolitan Wastewater Reclamation District (CO)

Raftelis was engaged by the Metropolitan Wastewater Reclamation District to update its existing strategic plan. The District's goals were to clarify its goals and priorities, achieve commitment to those priorities by the Board of Directors, management, employees, and other stakeholders, and effectively allocate the organization's resources. Raftelis was able to design a process that met the District's goals with significant stakeholder input included. After the Board of Directors formally adopted the strategic plan, the District elected to extend Raftelis' engagement to include implementation planning and support activities. Ms. Carter currently serves as the lead consultant for the strategic planning and implementation activities.

Capital Region Water (PA)

Ms. Carter served as the project manager for the development of Capital Region Water's 2016-21 Strategic Plan. This process was specifically designed to ensure that significant stakeholder engagement was utilized, as Capital Region Water had assumed operation of the City of Harrisburg's water systems in late 2013 and had just completed a significant rebranding campaign. The Raftelis Team conducted four employee focus groups, hosted a meeting of the

Citizen's Advisory Board, and held interviews with outside stakeholders including environmental groups, regulatory groups, City representatives, and financial stakeholders.

Nashville Metro Water Services (TN)

Raftelis was engaged by Nashville Metro Water Services to conduct an organizational assessment based on the Effective Utility Management framework, and then to use the results to inform a new organizational strategic plan. Ms. Carter served as the lead consultant for this engagement, facilitating and coordinating Attribute and Priority Team meetings, analyzing employee survey results, and creating assessment and strategic planning deliverables. Upon completion of the strategic plan, Metro Water Services extended the engagement to include implementation assistance and an organizational culture assessment, both of which Ms. Carter is currently engaged with.

North Texas Municipal Water District (TX)

Ms. Carter has been engaged in numerous projects for the North Texas Municipal Water District, including the comprehensive assessment of the Wastewater, Water and Support Services Departments for this large Dallas-area utility serving a population of over 1 million customers. This comprehensive assessment and "deep dive" of the Operations and Maintenance of the Water and Wastewater Departments and the Support Services Divisions of Information Technology, Human Resources, Finance and the Governance structure of the District's 35-member Board representing 13 Member Cities. The project involved benchmarking to peer and industry performance measures as well as comparison to Effective Utility Management standards, and resulted in several recommendations, including creation of a Training Road Map, with which Ms. Carter is currently assisting.

Ms. Carter has also assisted the District by co-facilitating a two-day retreat for the District's Board of Directors, and was involved in the Member City negotiations to revise the wholesale water rate structure. While ultimately the Member Cities were unable to reach consensus on rate structure modifications, the process allowed all Member Cities to participate, offer possible solutions, and build awareness of conditions in the District's service area.

City of Lowell (NC)

The City of Lowell, NC (City) engaged Raftelis to facilitate a City Council strategic planning retreat in February, 2017. The Lowell City Council does not currently have staggered terms, so all Council members and the Mayor face potential turnover every two years. The goal of the retreat was to establish the foundational strategic planning elements (e.g. Vision, Values, Mission) for the City, as well as to identify and develop long-term priorities, goals, and strategies to guide future elected officials and City staff. Ms. Carter co-facilitated the retreat, which used a SOAR (Strengths, Opportunities, Aspirations, and Results) Analysis to frame the discussion.

Puerto Rico Aqueduct and Sewer Authority (PRASA)

Ms. Carter served as the project and deliverable coordinator for the development of a Professional Opinion Report regarding the financial and operational capabilities of the extremely complex and large water and wastewater authority serving the island of Puerto Rico. This project was commissioned by the World Bank to confirm the viability of PRASA to secure additional financing to continue its capital development program. The evaluation focused on PRASA's activities with regard to operations and maintenance, infrastructure, customer service, non-revenue water, and finance.

City of Baltimore (MD)

The City of Baltimore (City) Department of Public Works (Department) provides water and sanitation services to more than 1.8 million people in the greater Baltimore metropolitan area, and like many progressive organizations, sought to ensure that its operations were being managed and run efficiently. The City engaged Raftelis to conduct a comprehensive operational analysis of its Water and Solid Waste Bureaus, as well as the Department's administrative groups, with the ultimate goal of aligning the Department with industry standards and best practices, resulting in a higher level of service for customers and stakeholders. Ms. Carter served as the project coordinator for this effort. Her involvement included interviewing key stakeholders; facilitating information gathering and validation sessions with division managers; preparing presentations, reports, and other deliverables; and general project coordination. Subsequently, the City's Department of Public Works (DPW), of which the Bureau is a subset, has engaged Raftelis to facilitate a Department-wide strategic planning effort. Ms. Carter is serving in a similar capacity, helping to facilitate strategic planning workshops with senior DPW leadership; synthesizing information and feedback; preparing presentations, reports, and other deliverables; and provides general project coordination.

Central Arkansas Water (AR)

As part of its most recent rate update, Central Arkansas Water (CAW) engaged Raftelis to conduct an organizational assessment of its Water Quality and Operations Department. The Department had recently been created through the merger of two existing departments, and CAW was interested in recommendations regarding its organizational structure, functional responsibilities, and workforce needs. This engagement is on-going, with Ms. Carter's involvement including facilitation, coordination of site visits, and deliverable production.

Newport News (VA)

In 2015, Newport News Waterworks (Waterworks) engaged Raftelis to conduct a process to update Waterworks' existing strategic plan. This process was specifically designed to ensure that significant stakeholder engagement was utilized, and that the resulting plan was in alignment with both the tenants of the Effective Utility Management initiative, and the strategic goals at the City level. Ms. Carter was involved in all stages of this engagement, but was primarily focused on facilitating strategic planning workshops and creating deliverables for the utility.

DC Water (DC)

To best manage immense capital projects and significant organizational change while remaining responsive to customers and providing high quality service, DC Water engaged Raftelis to assist in the development and implementation of a Board-driven strategic plan. The plan, Blue Horizon 2020, is the result of a Board Retreat, Strategic Planning Committee Workshops, Executive Management Workshops, and ultimately Board Review. Ms. Carter was involved in all stages of this engagement, particularly those relating to implementation planning and execution.

Sanitation District No. 1 of Northern Kentucky (KY)

In 2013, Raftelis assisted the Sanitation District No. 1 of Northern Kentucky in creating a five-year strategic plan. Ms. Carter was integrally involved in compiling and analyzing internal and external stakeholder feedback, as gathered through interviews, focus groups, and an online survey. Ms. Carter also assisted in facilitating a two-day senior management team workshop, designed to elicit input on the organization's overall strategic direction through appreciative inquiry techniques. Once the overall strategic direction was determined, Ms. Carter worked with goal teams to articulate key metrics associated with each goal, and to prioritize the short-, medium-, and long-term strategies to be pursued.

City of Reidsville (NC)

Ms. Carter served as the lead consultant for an evaluation of the City's contract operator for the water and wastewater treatment facilities. The focus of the investigation was to determine the feasibility of the City to assume full operation of both facilities following a 20-year period of using contracted operations and maintenance services. The City Manager and Public Works Director wanted to conduct this evaluation in advance of construction of major wastewater plant upgrades. The work included a conditional and operability review of the two facilities, interviews with contact management and operations staff, review of the contract terms and performance indicators and an economic forecast/comparison of the cost of City-managed services to contractor-provided services.

US Navy

Ms. Carter served as the lead consultant on a wholesale cost of service review project for the US Navy. The Navy's installations in Norfolk, VA and Virginia Beach, VA are served by the City of Norfolk. The US Navy asked Raftelis to assist the Navy in reviewing the City's cost of service study. Ms. Carter developed a model that mimicked the calculations prepared by the City's rate consultant. This model was used to identify areas of concern in the cost allocations to the Navy. She assisted in drafting responses to the City's cost of service analysis, participated in meetings with the Navy, and participated in meetings with the City and its rate consultants.

County of Dare Water Department (NC)

Raftelis is currently engaged in conducting a 2012 update of the County of Dare Water Department's (Dare) water rates. Due to its geographic situation (the County spans several barrier islands), Dare actually operates three separate treatment and distribution systems, but is in the process of moving toward a uniform cus-

tomers rate. For this engagement, Ms. Carter has conducted billing data analysis, assisted with the determination of pricing objectives and rate structure conceptual design, and is working to update the rate model and prepare project deliverables.

City of Asheville (NC)

The North Carolina General Assembly introduced legislation in 2010 which proposed to require the City of Asheville to merge its water utility with the Metropolitan Sewer District of Buncombe County. This proposed legislation resulted in commissioning a legislative research study to evaluate the merits of such a legislatively forced consolidation. In 2012, the results of the legislative committee recommended the merger, further legislative action is pending. Ms. Carter served as the lead consultant for the governance impacts analysis.

City of Wilmington Water and Sewer Utility Enterprise Fund (DE)

This project involved a comprehensive assessment of the City of Wilmington's water, wastewater, and stormwater utilities organization. Primary project objectives included using the Effective Utility Management framework to determine organizational effectiveness in governance, finance, management, and operations. Ms. Carter assisted with stakeholder feedback sessions and creating the implementation plan for a series of organizational and policy improvements, designed to enhance the overall financial sustainability of the utilities.

Gloucester County (VA)

Raftelis was engaged by the Gloucester County Public Utilities Department (Department) to assess and evaluate the Department using the Effective Utility Management framework and to identify opportunities to strengthen the financial stability of the County's water and wastewater utilities. Ms. Carter researched industry best practices and benchmarks and provided support for the development of the utility assessment and recommendations.

Pima County (AZ)

Raftelis assisted the Pima County Regional Wastewater Reclamation Department with a review of its connection fee structure and assessment methodology. For this project, Ms. Carter conducted a benchmarking survey of 20 comparable utilities in the southwestern United States and assisted in the preparation of the final report and presentation.

OTHER RELEVANT PROJECT EXPERIENCE

- City of Baltimore Department of Public Works (MD) – Financial policies benchmarking and affordability assessment
- Town of Cary (NC) – Bond Feasibility Study
- County of Dare Water Department (NC) – Water Rate Update
- Gloucester County (VA) – Organizational Assessment
- Indian River County (FL) – AMR/AMI Benchmarking
- Mount Pleasant Waterworks (SC) – Strategic Planning Project and Financial Policy Benchmarking Project
- New Orleans Business Council (LA) – Review of best practices

in governance structures

- Pinellas County (FL) – Customer Service Assessment
- Pima County (AZ) – Connection Fee Structure and Assessment Methodology Review
- Sewanee Utility District (TN) – Rate Model Update
- WaterReuse Association – Strategic Planning
- City of Wilmington Water and Sewer Utility Enterprise Fund (DE) – Water, Wastewater, and Stormwater Utilities Assessment

PRESENTATIONS AND PUBLICATIONS

- “Access to Municipal Water Service: Do Community Demographics Matter?” October 2017. Southeastern Conference for Public Administration; Awarded Outstanding Masters Student Paper.
- “Survey Reveals Water and Wastewater Billing Stats And Concerns.” September 2017. Water Innovations, with Rocky Craley
- “The Effect of Conservation on Water Rate Structures.” April 2015 Journal AWWA, with Rocky Craley and Bill Stannard.
- “Entering the Twitterverse: An Analysis of Twitter Use at Large Utilities” WaterReuse Association Webinar. Presented with Colleen Curran and Noe Crockett of the Southern Nevada Water Authority.
- Water and Wastewater Finance and Pricing: The Changing Landscape, Fourth Edition. Co-authored Chapter 16 - “Public Outreach and Gaining Stakeholder Commitment”
- “Defining a Resilient Business Model for Water Utilities” 2014. WRF Project 4366.
- “Water and Wastewater Rates on the Rise” August 2013 Journal AWWA, with Rocky Craley.
- “Entering the Twitterverse: An Analysis of Twitter Use at Large Water Utilities” Presented at the Utility Management Conference in 2013.



Rocky Craley

Senior Manager

SPECIALTIES

- Utility cost of service studies
- Alternative rate structure studies
- Cost analysis and cost allocation
- Conservation pricing
- Long range financial planning and feasibility studies
- Surveys and benchmarking analyses
- Risk Analysis

PROFESSIONAL HISTORY

- Raftelis: Senior Manager (2019-present); Manager (2015-2018); Senior Consultant (2011-2014); Staff Consultant (2008-2011)

EDUCATION

- Master of Science - Carnegie Mellon University (2006)
- Bachelor of Arts - Princeton University (2004)

PROFESSIONAL MEMBERSHIPS

- American Water Works Association
- Water Environment Federation; WEF's Utility Management Committee
- AWWA/WEF Young Professionals Annual Summit: Chair (2017); Co-chair (2016)

CERTIFICATIONS

- Series 50 Municipal Advisor Representative

Mr. Craley has 12 years of experience with Raftelis, providing assistance on numerous water and wastewater rate and cost of service studies. Additionally, he has had the opportunity to work on a wide range of other projects involving public-private partnerships, rate differentials, risk analysis, and utility policy. Mr. Craley also manages Raftelis' many survey efforts, including the biennial national *Water and Wastewater Rate Survey*, which is co-produced with the American Water Works Association (AWWA), and the *INSIGHT Survey*, which is produced by the Association of Metropolitan Water Agencies (AMWA). He also authored a chapter, entitled "Development and Design of a Schedule of Rates and Charges", in the 2018 update to WEF's *Manual of Practice #27* and another chapter, entitled "Benchmarking Rates and Charges," for the Fourth Edition of the industry guidebook, *Water and Wastewater Finance and Pricing: The Changing Landscape*. Mr. Craley is an active member of AWWA and WEF, serving on WEF's Utility Management Committee, and frequently presenting at industry conferences.

RATE AND FINANCIAL PLANNING EXPERIENCE

Central Arkansas Water (AR)

Raftelis assisted Central Arkansas Water (CAW) with a number of projects since 2011. The primary studies included comprehensive cost of service and rate design studies in 2012 and 2015. Raftelis also completed a wholesale rate study for CAW in 2014. Additionally, Raftelis conducted a financial feasibility analysis as part of a larger feasibility analysis in 2015 for CAW related to incorporating the assets and service of a small neighboring utility into CAW's system. The analysis helped CAW executive staff and Board of Commissioners comfortable and confident in moving ahead with the regionalization effort, and it's been a relatively smooth transition since 2016. Mr. Craley served as project manager for these engagements. In 2016, Raftelis expanded their assistance to CAW by performing an operational efficiency assessment for the Water Quality Division, which was incorporated into the utility's strategic plan.

District of Columbia Water and Sewer Authority (DC)

Raftelis is currently working with the District of Columbia Water and Sewer Authority (DC Water) on a multi-year contract to provide cost of service, rate, and financial consulting services. Mr. Craley's responsibilities have included assisting with a survey of rate structures within the industry and miscellaneous fee analyses. Mr. Craley has also performed a fixed revenue analysis, evaluating the current and forecasted level of revenue recovered from fixed charges in an effort to determine the inherent level of revenue stability for DC Water. Most recently, Mr. Craley is assisting DC Water with update to their miscellaneous fees, including the development of two new fees.

Dallas Water Utilities (TX)

Raftelis was engaged by Dallas Water Utilities (DWU) in early 2017 to conduct a comprehensive water and wastewater cost of service rate study. DWU annually updates their cost of service model, originally developed in 2002. DWU engaged Raftelis for three primary objectives: 1) review the existing cost of service process and how it's changed from the original model, focusing on retail customers, 2) develop a new rate model for DWU's future use, and 3) design an alternative residential rate structure that improved conservation, maintained affordability, and balanced fixed cost recovery. Mr. Craley is serving as project manager for this project, is the primary point of contact for staff, and is overseeing all aspects of the project and the development of the new rate model. It is anticipated that

Dallas City Council and subcommittees will take action on study results in early 2018.

Austin Water (TX)

Austin Water (AW) provides water and wastewater service to a population of over one million in metropolitan Austin. AW is currently undertaking an extensive review of its water and wastewater utility cost of service models to ensure the maximum possible equity in customer class revenue requirement determination and to aid regulatory analysis of AW's wholesale rates by the Public Utility Commission of Texas. As part of this process, Mr. Craley has served in a project management role over the redesign of AW's water and wastewater cost of service models and presentations to stakeholder groups composed of AW retail and wholesale customers.

Pittsburgh Water and Sewer Authority (PA)

Pittsburgh Water and Sewer Authority (PWSA) serves the metropolitan area of Pittsburgh, Pennsylvania. PWSA engaged Raftelis in 2016 for a comprehensive cost of service and rate design for water and wastewater conveyance service. PWSA provides water service and wastewater conveyance service to their residential, commercial and industrial customers. PWSA tasked Raftelis to develop a comprehensive financial plan to determine the necessary annual rate adjustments to enable each service to be self-sustaining, to fund significant capital reinvestment, and to ensure overall ongoing financially sustainable operation of the utility. Mr. Craley played a lead role in the financial plan and rate model development. Raftelis was engaged again in 2017 to update the analysis and Raftelis' rate recommendations are the foundation for the adoption of a three-year rate forecast for 2018-2020. Raftelis developed a new comprehensive rate and financial planning model for this study and future use by PWSA.

City of Reading Sewer Department (PA)

Raftelis has been engaged by the Sewer Department of the City of Reading, PA (Department) on and off since 2013. Mr. Craley is the Project Manager for this series of studies. The Department is in the middle of a \$200 million upgrade and expansion to their wastewater treatment plant. Raftelis initially performed the first comprehensive cost of service and rate study that solely focused on sewer service, which resulted in the implementation of an alternative rate structure and adoption of a multi-year rate plan. Raftelis also performed a detailed affordability analysis to determine if the mandated capital investments is burdensome on customers. Since that initial study, Raftelis has provided ongoing assistance to the Department for a variety of financial matters, and is currently engaged in 2017 for an update to the cost of service study, including the annual rates and rate reconciliations for partners in the wastewater treatment plant, termed Contributing Municipalities.

City of Round Rock (TX)

Raftelis was engaged by the City of Round Rock, TX (City) to conduct a comprehensive cost of service study and rate design in 2014-2015 for water and wastewater service. Mr. Craley served as the project manager for Raftelis for this project. Raftelis developed a new comprehensive rate and financial planning model for the

City. Raftelis calculated cost of service for retail and wholesale customers and assisted the City in the approval and implementation of a three-year rate forecast for wholesale customers. Raftelis was engaged again in 2017 to update the cost of service study and for the development of alternative rate structures for the retail customer classes. The rates and rate structure changes were adopted and implemented on October 1, 2017.

Pima County Regional Wastewater Reclamation Department (AZ)

Mr. Craley was part of the four-firm consulting project team analyzing alternative project delivery models for a new wastewater treatment facility for Pima County Regional Wastewater Reclamation Department (County). During this project, Mr. Craley provided technical expertise. He extensively modeled the inherent and transferred risks of each alternative method, including design, construction, management, and operation and maintenance of the proposed facility. Mr. Craley also provided clear and concise reporting of risk analysis results for presentation.

In addition, Raftelis conducted a comprehensive cost of service study for the County in 2016 and 2017 to determine cost of service of customer classes. The County wanted to explore the impact of the commercial class and the respective strengths of high strength customers. Mr. Craley was the lead consultant, overseeing the development of a cost of service model and all analyses.

San Jacinto River Authority (TX)

Mr. Craley is working with the San Jacinto River Authority to complete a financial planning model and rate study for its Raw Water Enterprise. The 10-year financial planning model will allow the Authority to plan for future needs as it completes the development of its Comprehensive Plan. Mr. Craley is working as technical advisor, overseeing the development of the financial planning model and validating the functionality and results.

Town of Addison (TX)

Mr. Craley is working with the Town of Addison to develop a financial planning model and rate study. With the need for future capital investment, the Town needed a tool to determine what rate increases may be required in the next 10 years. As part of the study, Raftelis is reviewing the Town's current financial policies and making recommendations for possible changes. This will require significant input and interaction with Council. Mr. Craley is serving as project manager for this engagement.

City of San Angelo (TX)

Raftelis was engaged by the City of San Angelo, TX (City) to conduct a comprehensive cost of service and rate design for water and wastewater service. The City faces significant water supply and financial challenges. Raftelis, led by Project Manager Rocky Craley, developed a long-term financial plan and identified funding needs for a \$100 million alternative water supply project. In the financial plan, Raftelis determined the necessary annual rate adjustments for returning the utility financial sustainability and funding future capital investments. Additionally, the project team reviewed the

cost of alternative conservation measures to further encourage customers to embrace water conservation.

City of Pearland (TX)

The City of Pearland, Texas (City) is a high growth community south of Houston and has, in turn, invested and will invest a significant level of capital into the City's infrastructure for expansion and rehabilitation. The City had been using a rate model that was developed in 2008 and has engaged Raftelis to develop a new financial planning and rate model for the future use by the City that can accommodate comprehensive and complicated capital funding scenario analysis as the City looks to spend more than \$200 million in their current capital improvement plan. Mr. Craley served as project manager and was lead on the design of the new rate model.

City of Wimberley (TX)

The City of Wimberley, Texas (City) engaged Raftelis as a member of a Project Team to conduct a feasibility analysis for the design, construction, and implementation of a wastewater system for the City. Mr. Craley, project lead for Raftelis, developed various financial scenarios balancing sources and levels of financing of the different wastewater system options. Mr. Craley presented the financial scenarios to a stakeholder group as part of the community discernment process. The City approved the design and construction of the project and Mr. Craley will update the preliminary rate plan upon implementation of the wastewater system, tentatively the end of 2017.

El Paso Water Utilities (TX)

Raftelis was engaged by El Paso Water Utilities (Utilities) in El Paso, TX in 2013 to update the system development charges. Utilities assesses system development charges for water and wastewater service to new construction connecting to Utilities' system. Raftelis assisted the City in incorporating the City's updated land use assumptions, debt service and capacity into the analysis for updated system development charges.

City of El Paso (TX)

Mr. Craley served as Raftelis' Project Manager for an engagement with the City of El Paso (City). The City engaged Raftelis to evaluate the cost based allocation of payments between the City and the Public Service Board of El Paso Water Utilities. Raftelis also conducted an extensive benchmarking study of state and national peer utilities for a comprehensive review of best practices. The Raftelis project team, led by Mr. Craley, reviewed the existing payments and methodologies, gauged the City's levels of payments with peer utilities, and identified areas for potential modification or reevaluation.

City of Fort Worth Water Department (TX)

Mr. Craley served as Lead Consultant with an engagement with the City of Fort Worth's Water Department (Department). Specifically, Raftelis assisted the Department for a wholesale wastewater cost of service analysis and rate study. Mr. Craley led the review of the model and methodology and will participate in a series of workshops to ensure the Department is equitably charging wholesale

wastewater customers. Mr. Craley was also responsible to document the review in a detailed report of the study's findings.

Northeast Ohio Regional Sewer District (OH)

Mr. Craley served as Lead Consultant for a cost of service study for the Northeast Ohio Regional Sewer District (District). Raftelis conducted a rate structure analysis and recommended the District incorporate a base charge into their rate structure. Additionally, Raftelis worked with the District's financial advisor to forecast debt scenarios for the District's extensive capital improvement program. Mr. Craley's primary task was to develop the rate and financial planning model for the District.

Washington Suburban Sanitary Commission (MD)

Mr. Craley served as lead consultant on an engagement with Washington Suburban Sanitary Commission (WSSC) in Laurel, Maryland. WSSC engaged Raftelis to review their existing system development charge (SDC). Raftelis is calculating the SDC using industry accepted methodology. Additionally, Raftelis is evaluating alternatives and benchmarking peer utilities. Furthermore, Raftelis is determining the financial impacts both short and long term of each alternative. Mr. Craley has been involved in every aspect of the project, including the several workshop sessions with WSSC's Engineering Department.

The City and County of Honolulu Department of Environmental Services (HI)

The City and County of Honolulu Department of Environmental Services (ENV) engaged Raftelis to conduct a study of their sewer service charge. This study included an in-depth examination of ENV's pricing objectives as well as the advantages and disadvantages of ENV's rate structure and potential rate structure alternatives. Mr. Craley reviewed several similar utilities and compiled presentation materials of the results.

ENV engaged Raftelis approximately one year later to continue the analysis on the sewer service charge. Mr. Craley served as Lead Consultant to the ENV. Raftelis modeled the selected rate structure alternative, modifications to the non-monitored high strength surcharge program, and recommended a methodology for calculating an update to the facility charge. Finally, Raftelis designed a cutting edge affordability analysis to evaluate potential affordability programs.

OTHER RELEVANT PROJECT EXPERIENCE

- Confidential Client (AL) – Litigation Support and Research
- Town of Bethel (CT) – Rate and Financial Plan update
- Central Arkansas Water (AR) – Water Financial Planning and Rate Study
- District of Columbia Water and Sewer Authority (DC) – Cost of Service, Rate Study, and Financial Planning Study
- City of El Paso (TX) – Cost Allocation to Utilities and Benchmarking Industry Best Practices
- El Paso Water Utilities (TX) – Impact Fee Update
- City of Fort Worth (TX) – Wholesale Wastewater Cost of Ser-

vice and Rate Study

- City of Gainesville and Hall County (GA) – Rate Differential Study
- The City and County of Honolulu Department of Environmental Services (HI) – Sewer Service Charge Study
- James Island Public Service District (SC) – Rate and Cost of Service Study
- Jefferson County (AL) – Wastewater Cost of Service and Financial Planning Study
- City of Loveland (OH) – Resume Control of a Wastewater Treatment Facility and Infrastructure
- Mobile Area Water and Sewer System (AL) – Water and Sewer Rate and Financial Planning Study
- Nova Scotia Utility and Review Board, Halifax (NS, Canada) – Review of Return on Rate Base
- Phoenix Water Services Department (AZ) – Study Analyzing Impact of Pricing on Demand and Conservation Rate Structures
- Pima County Regional Wastewater Reclamation Department (AZ) – Study Analyzing Alternative Project Delivery Models for Wastewater Treatment Facility, Rate Study, and Financial Plan
- City of Reading (PA) – Sewer Rate Study and Affordability Assessment
- City of Round Rock (TX) – Utility Cost of Service and Rate Study for Water and Wastewater Retail and Wholesale Customers
- City of San Angelo (TX) – Water and Water Reclamation Rate Study
- San Antonio Water System (TX) – Cost of Service and Rate Study
- San Francisco Public Utilities Commission (CA) – Water and Wastewater Rate and Financial Planning Study
- Santa Clara Valley Water District (CA) – Litigation Support
- Spartanburg Water and Sanitary Sewer District (SC) – FY2008 Rate Update
- Town of Sullivan's Island Water and Sewer Department (SC) – Cost of Service Study
- United States Navy - Northwest Utility Privatization Procurement
- Washington Suburban Sanitary Commission (MD) – System Development Charge Study
- Water Infrastructure Finance Authority (AZ) – Water and Wastewater Residential Rate Survey
- City of Wimberley (TX) – Wastewater System Feasibility Study

SURVEYS

Water and Wastewater Rate Survey

Mr. Craley is Raftelis' Project Manager for the firm's Water and Wastewater Rate Survey. The biennial national survey is completed by Raftelis in conjunction with the American Water Works Association. Mr. Craley works closely with personnel at AWWA for an effective and efficient partnership. Mr. Craley manages the day-to-day aspects of the survey, including the support staff, and provides critical support in reviewing data and performing analyses for

each iteration. Mr. Craley has served as project manager for the survey since 2010, and will continue to manage the Water and Wastewater Rate Survey effort for future editions.

Association of Metropolitan Water Agencies - Utility Financial Information Survey

Mr. Craley served as Project Manager for Raftelis' work with the Association of Metropolitan Water Agencies (AMWA). AMWA's membership, which includes utilities that have a service population of at least 100,000, has expressed interest in understanding the rates and rate structures of its members and the drivers of rate increases. In 2014, AMWA engaged Raftelis for the fourth time to conduct the comprehensive Utility Financial Information Survey of its membership, as it had done since 2008. Mr. Craley managed the survey development, data collection, and processing of results. The results were compiled in database format and was provided to AMWA and participants. Mr. Craley also led a webinar demonstrating use of the database and provided sample analyses of key survey results.

INDUSTRY PRESENTATIONS

2017

- Update On The Industry: 2016 National Water And Wastewater Rate Survey Results, ACE, Philadelphia, PA, 2017.
- Rate Structures and Public Acceptance, Arkansas Water Works & Water Environment Association Conference, Hot Springs, AR, 2017

2016

- Righting the Ship: A new Water Supply and a Fund Balance, Texas Water, Fort Worth, TX, 2016.
- Financing the Future by Trending the Past, Utility Management Conference, San Diego, TX, 2016.
- The Pricing Paradox: Keeping Water Rates Affordable When Using Less, Sustainable Water Management Conference, Providence, RI, 2016.
- Predicting the Unpredictable: Challenges in Demand Forecasting, ACE, Chicago, IL, 2016.

2015

- Ask the Experts: The AWWA/Raftelis 2014 Water and Wastewater Rates Survey, AWWA, Webinar, 2015.

2014

- Public Outreach Begins with the Board, Texas Water, Dallas, TX, 2014.
- Public Outreach Begins with the Board, Utility Management Conference,
- Public Outreach Begins with the Board, ACE, 2014.

2013

- Fixed Costs Versus Fixed Revenue, Texas Water, Galveston, TX, 2013.
- Surveys and a Decade of Industry Trends in Texas, Texas Water, Galveston, TX, 2013.

- National Water And Wastewater Rate Survey: 2012 and a Decade of Trends, ACE, 2013.

2012

- Fixed Costs Versus Fixed Revenue, WEFTEC, 2012.

2011

- A Decade of Wastewater Industry Trends: 2000 – 2010 Rate Survey Results, WEFTEC 2011.



Rob Ori CPA

Executive Vice President

SPECIALTIES

- Cost of Service and Rate Studies
- Utility Acquisitions
- Bond Financing
- Wholesale Service
- Developer/Service Agreements and Policies
- Connection/Development Fees
- Business/Strategic Plans
- Asset Prioritization
- Expert Witness

EDUCATION

- Masters Business Administration, Accounting Rollins College, 1985
- B.S.B.A., Accounting, University of Central Florida, 1977

PROFESSIONAL REGISTRATION

- Certified Public Accountant - Florida, No. 15822

PROFESSIONAL MEMBERSHIPS

- Water Environment Federation
- American Water Works Association - Committees
 - Rates and Charges
 - Finance, Accounting & Management Controls
- Government Finance Officers Association
- Florida Government Finance Officers Association
- American and Florida Institute of Certified Public Accountants
- Florida Stormwater Association

ROLE

Will provide oversight for the project ensuring it is completed in a timely manner and meets both Raftelis and industry standards.

PROFILE

Mr. Ori will be transitioning from the the president of PRMG to an Executive Vice President of Raftelis in July. Mr. Ori has i) performed utility revenue sufficiency and cost of service studies for over 150 local governments; ii) prepared financial feasibility and disclosure reports for approximately 85 transactions totaling over \$6.9 billion in proceeds in the traditional bond market, state revolving loans and rural development loans; iii) prepared financial due diligence evaluations for over 35 utility transactions; iv) served as the public service commission staff in the evaluation of franchised utility rate cases and has submitted testimony as an expert witness in support of rates; and v) developed specialized rates such as low and high pressure reclaimed water rates, raw water rates, conservation rates, wholesale service and emergency service rates, development charges, and miscellaneous customer service rates. Mr. Ori has also been involved in the preparation of the capital improvement element for comprehensive land use plans, development and monitoring of municipal budgets, preparation of financial policies regarding liquidity and financial position, developed extension policies and agreements, assisted in development of service and capacity sales agreements and participated in contract negotiations, provided litigation support litigation services, and other related accounting, utility and public management advisory services.

Mr. Ori has been a frequently invited speaker addressing rate, accounting, and industry issues and has recently been involved in the American Water Works Association (AWWA) Rates and Charges Committee and the Finance, Accounting and Management Controls Committee. He is a contributing author to the newest addition of the AWWA Manual of Practice 29 (M29): *Fundamentals of Water Utility Capital Financing, Fourth Edition* and for the most recent published volume of the AWWA Manual of Practice 1 (M1): *Principles of Water Rates, Fees, and Charges, Seventh Edition* and Contributing Author for the Water Environment Federation's 2017 published special publication, *The Water Reuse Roadmap*.

RELEVANT PROJECT EXPERIENCE

Millennium Challenge Corporation (Ulaanbaatar, Mongolia)

Mr. Ori directed the development of a financial forecast and rate tariff evaluation and plan in support of the Mongolia Second Compact Development for the Millennium Challenge Corporation (MCC) as documented in the "Financial and Institutional Sustainability Study related to the Expansion of Bulk Water Supply in Ulaanbaatar, Mongolia" (the "MCC Report"). With respect to this project, Mr. Ori participated in on-site meetings with the Water Supply and Sewerage Authority of Ulaanbaatar (USAG - the water and wastewater utility purveyor), the Water Services Regulatory Commission (WSRC - the regulator for the establishment of rates), Housing and Public Utilities Company of Ulaanbaatar City (OSNAAUG - the primary wholesale customer), and other third parties to compile information and gain an understanding of the rate-making process and needs of the service area and developed a detailed financial model that included both a "utility-basis approach" (method generally employed by WSRC) and "cash needs approach" in the evaluation of revenue requirements and amounts to be recognized in the establishment of rates. The financial evaluation / model included: i) a customer and demand forecast, projections of operating expenses which also included incre-

mental expenses associated with the MCC investment; ii) a utility plant (fixed assets) evaluation to estimate asset replacement for cash flow analyses and depreciation expense for tariff development; iii) a capital funding evaluation to identify debt / pay-as-you-go / and capital contributions in the evaluation of financial position; iv) a management dashboard that details the estimated fiscal position of the utility (liquidity, tariff sufficiency, capital contribution margins, debt leverage relationships, and other financial targets; and v); a schedule of proposed rate tariffs considered necessary to fund the revenue requirements of the utility. Mr. Ori also assisted in the preparation of the MCC Report.

Martin County (FL)

Mr. Ori has served the water, wastewater, and solid waste departments of Martin County since 1994 and has performed a variety of utility services for the County. The initial services were associated with the performance of a rate evaluation to consolidate three separate districts into a single enterprise. In order to address the utility rate needs, Mr. Ori directed the development of a detailed cost of service analysis, which included the re-structuring of utility rates, development of reclaimed water rates, and the design of system development fees. Mr. Ori assisted in the financial valuation and acquisition of 12 privately owned utilities to bring the utilities under public ownership, eliminate small wastewater treatment systems, and to further regionalize system service to promote economies of scale. Mr. Ori also developed financial forecasts, rate covenant and additional bonds tests, and assisted in the rating agency presentations for seven separate bond issues totaling \$140,840,000 in bond and state revolving fund loan proceeds. He also directed the development of a detailed solid waste business forecast to model the financial needs of the system and to develop tipping or disposal fees and collection fees, including the amount of fees that should be on the ad valorem tax bill (assessment) for residential service. Other services have included the development of wholesale service assisted with charges and assisted with the negotiation of a water and sewer capacity swap with the City of Stuart, FL, development of reclaimed water rates and large user agreements, providing assistance for the development of a wastewater extension/septic tank replacement program, development of a price index rate adjustment formula for operating margin maintenance, and providing on-going utility rate and financial services.

City of West Palm Beach (FL)

Mr. Ori has performed a variety of utility services for the City since 1994. He directed the development of a detailed utility rate study for the City's water, wastewater, and stormwater enterprise funds. Responsibilities included overseeing the development of a detailed billing frequency to identify customer use attributes by class, development of a five-year revenue requirements analysis and capital funding plan, the design of rates for service including a water conservation rate structure, and the design of other rates including raw water rates, wholesale water and wastewater rates for full and emergency service, system development charges, and miscellaneous fees for service. Mr. Ori has continuously updated this study on behalf of the City. Mr. Ori also developed financial forecasts, rate covenant and additional bonds tests, financial dis-

closure reports, and assisted in the rating agency presentations for ten separate bond issues totaling \$483,145,000 in bond proceeds, including the East Central Regional Treatment Operations Board financing which the City is the administrator for the facility. Other services have included providing assistance in wholesale service agreements, development of capital funding analyses in support of the utility master planning process and water treatment facility options, and other ongoing rate and financial services.

Alexandria Renew Enterprises (City of Alexandria, VA)

Mr. Ori directed the development of a detailed revenue sufficiency analysis and rate evaluation for the AlexRenew wastewater utility. The evaluation included the development of a ten-year financial forecast of revenue requirements, which recognized a joint capacity partner in the treatment facility, the development of financial targets and performance measures based on best management practices and credit evaluation criteria, implementation of a new rate structure to increased fixed cost recovery and promote revenue stability, and the development of a sustainable capital finance plan. The financial forecast model has been updated annually and serves as the basis for the development of the annual utility budget. Most recently, Mr. Ori assisted in the conversion of moving from a quarterly to a monthly based billing process. Other services have included the development of sewer deduct and metering policies, review of customer service and billing agreements, and preparing financial forecasts and rate covenant evaluations associated with securing low interest loans from the Virginia Resources Authority.

Hillsborough County (FL)

Mr. Ori has performed a variety of services to the County over the past twenty years. The first engagement directed by Mr. Ori was an evaluation of the financial position, rates, and business issues and the identification of alternatives to improve financial performance and sustaining rates. This led to the development of the Blue Ribbon Committee by the Board of County Commissioners that developed a strategy / list of recommendations to improve the utility; Mr. Ori served as the lead consultant assisting the County staff during the Blue Ribbon Committee deliberations. Mr. Ori also directed the preparation of a detailed cost of service analysis to modify the rates for service. Attributes included the development of a detailed billing frequency to identify customer use attributes by class, development of a five-year revenue requirements analysis and capital funding plan, the design of innovative rates for service based on an equivalent residential unit basis (flow based by customer, not by meter size) which also included a water conservation rate structure, and the development of a purchased water pass-through adjustment and a price index adjustment clause to allow for operating margin stability. Mr. Ori also developed a financial disclosure report including rate covenant and additional bond compliance tests, assisted in the preparation of language revisions to the governing bond resolutions for operating, financing and accounting issues, and participated in the rating agency presentations for the Series 2010 Bonds (including Build America and Economic Recovery Bonds) issues totaling \$150,000,000 in bond proceeds. He also directed the development of a detailed

solid waste business forecast to evaluate the financial needs of the system and to develop tipping or disposal fees and collection fees, including the amount of fees that should be on the ad valorem tax bill (assessment) for residential service. The financial forecasts for the water and wastewater system and the solid waste system have been updated annually as part of the County's strategic planning process. Most recently, he developed a street light rate evaluation (assessments) for approximately 740 lighting districts in the County, including the development of a revenue sufficiency analysis and multi-year forecast of needs, a cost allocation evaluation to recover costs, managed the development of the property assessment roll to bill the district rates, and assisted in the update of the Street Lighting Ordinance.

Fairfax County (VA)

Mr. Ori directed the development of a detailed revenue sufficiency analysis and rate evaluation for the Fairfax County wastewater utility. The evaluation included a ten-year financial forecast of revenue requirements, which recognized the County's participation in several joint wastewater treatment capacity partnerships, the development of financial targets and performance measures based on best management practices and credit evaluation criteria, implementation of a new rate structure to increased fixed cost recovery and promote revenue stability, and the development of a sustainable capital finance plan. The financial forecast model has been updated annually and serves as the basis for the development of the annual utility budget and the ongoing five-year adopted rate schedule. Mr. Ori also developed a financial disclosure report including rate covenant and additional bond compliance tests for the Series 2010 Bonds issues totaling \$152,255,000 in bond proceeds. Other services have included: the performance of a financial evaluation associated with the potential acquisition of both a private and public utility system; the development of a wastewater capacity lease and sales agreement, including the price of such capacity, with another public utility in a jointly owned treatment facility, assistance in the development of a capital project tracking system; and the design of water system filing criteria for the regulation of water systems by the County.

Newton County Water and Sewer Authority (GA)

This project directed by Mr. Ori included the development of a five year financial forecast model and revenue sufficiency analysis to evaluate financial performance, revenue sufficiency, and the ability to sustainably fund the capital needs of the water and wastewater utility system. The analysis also included the phase-in of a re-design of rates to eliminate minimum water use allowances in the base charge, increase large customer fixed cost contributions based on implied capacity availability, increase water conservation incentives, and to promote revenue stability and fairness and the development of a purchased water pass-through consumption charge mechanism. Mr. Ori also assisted the Authority in the development of wholesale wastewater rates to service a neighboring local government, including the preparation of a comprehensive wholesale rate agreement between the parties. Other services have included: evaluation of the wholesale wastewater effluent disposal charges for land application; review of customer billing and late fee

application, development of large user rates for industrial customers, and providing continued financial model updates to monitor rates and financial conditions.

Lee County (FL)

Mr. Ori directed the preparation of a comprehensive cost of service study for the water and wastewater system which included a detailed customer billing frequency analysis, development of net revenue requirements, identification of a capital financing plan and cash flow evaluation, and the design of rates for service. Subsequent to the rate evaluation, Mr. Ori was responsible for overseeing the preparation of the financial due diligence, development of a system financial and rate consolidation analysis, and preparation of the bond feasibility disclosure report in support of the issuance of \$134,615,000 in utility revenue bonds which financed a utility acquisition that increased the water customer base by 64% and the wastewater customer base by 37%. Since the acquisition, Mr. Ori has been involved in a number of projects for the County, including i) the preparation of detailed bond feasibility reports for three transactions totaling \$233,595,000 in bond proceeds; ii) the preparation of an update to the rate study to adopt a series of multi-year rate adjustments which were approved by the Board of County Commissioners as presented; iii) assisted in the valuation and negotiations of the purchase of the Gateway Services District wastewater treatment plant and regional site and the development of a separate bulk wastewater services agreement; iv) development of a detailed financial policy for the utility (maintenance of operating and capital reserves, financial targets, and long-term revenue sufficiency which was adopted by the Board of County Commissioners); and v) performing other miscellaneous services as requested by the County from time to time (e.g., development of a capital planning tool for staff to evaluate changes in CIP planning, evaluation of absorption of other private and publically-owned utilities in the County, design of reclaimed water rates, etc.). He also directed the development of a detailed solid waste business forecast to evaluate the financial needs of the system and to develop tipping or disposal fees and collection fees, including the amount of fees that should be on the ad valorem tax bill (assessment) for residential service.

Collier County (FL)

Mr. Ori has been involved in directing numerous projects for the County since 2001. Mr. Ori has directed: i) utility rate studies which involved the evaluation of the financial requirements of the utility, including the development of a sustainability plan (primary objectives being capital re-investment and financial sustainability) and the adoption of a multi-year rate phasing plan that was approved by the Board of County Commissioners; ii) the development of water and wastewater impact fees; iii) the design of wholesale rates; iv) assisting in the development of a reclaimed water policy, ordinance, major and basic user agreements for service, and the design of low and high pressure reclaimed water rates; v) the development of a bond feasibility disclosure reports in support of the issuance of \$157,515,000 in bond proceeds; and vi) the development of an acquisition evaluation to consolidate a privately-owned utility system into the County System. He also

directed the development of a detailed solid waste business forecast to evaluate the financial needs of the system and to develop tipping or disposal fees and collection fees, including the amount of fees that should be on the ad valorem tax bill (assessment) for residential service.

OTHER REPRESENTATIVE CLIENTS SERVED

- Brevard County, FL
- Stafford County, VA
- Oconee County, GA
- City of Sunrise, FL
- Florida Governmental Utility Auth., FL
- City of Palm Coast, FL
- St. Lucie County, FL
- East Central Regional Wastewater Treatment Operations Board (Palm Beach County, Cities of West Palm Beach, Riviera Beach, Lake Worth and Town of Palm Beach), FL
- City of Sunrise, FL
- Stafford County, VA
- Ascension Parrish, LA
- Manatee County, FL
- Hernando County, FL
- Sarasota County, FL
- Loudon County, VA
- City of Waycross, GA
- City of North Port, FL
- Spanish Fort Water System, Inc., AL
- Town of Leesburg, VA
- City of Miami Beach, FL
- City of Boca Raton, FL
- Town of Wrightsville Beach, NC
- Millennium Challenge Corporation,
- (Ulaanbaatar, Mongolia)
- Hillsborough County, Public Utilities Commission – Windermere Utility Co., Inc. (2006) (No Docket)
- City of Marco Island vs. State of Florida in the Circuit Court of the Twentieth Judicial Circuit in and for Collier County, Florida – Case No. 06-261-CA-TB (2006)
- Sarasota County, Public Utilities Commission – Aqua Utilities Florida, Inc. Limited Rate Filing (2006) (No Docket)
- Sarasota County, Public Utilities Commission – South Gate Utilities, Inc. (2006) (No Docket)
- Citrus County Water and Wastewater Regulatory Authority Docket No. WS 05 01
- Pine Island Community Development District v. State of Florida Validation Hearing Case No. 04-CH3084 Fifth Judicial Circuit in and for Lake County
- Sarasota County, Public Utilities Commission – Siesta Key Utilities, Inc. (2004) (No Docket)
- City of West Palm Beach, et al. v. Department of Community Affairs and Palm Beach County – Case Nos. 04-4336GM, 04-4337GM, and 04-4650GM
- Sarasota County, Public Utilities Commission – AquaSource Utilities, Inc. (2003) (No Docket)
- Circuit Court of the Eighteenth Judicial Circuit in and for Seminole County, State of Florida – Case No. 01-CA-1921-16-9
- Circuit Court of the Sixteenth Judicial Circuit of the State of Florida, in and for Monroe County, Florida General Civil Division – Case No. CA-K-00-1525
- Town of Ft. Myers Beach, Lee County – Twentieth Judicial Circuit Case No. 99 1753-CA-JBR
- American Arbitration Association – Town of Vernon, CT and Vernon W.P.C.A. vs. Town of Ellington and Ellington W.P.C.A. – Case No. 12 199 00150 98
- Circuit Court for Pinellas County, Florida General Civil Division – Case No. 98 000747-CI-011
- Circuit Court of St. Charles County, State of Missouri – Case No. CV196 7425CC (1997)
- Polk County Utilities Commission – Grenelefe Utilities Co., Inc. (1995) (No Docket)
- Twentieth Judicial Circuit Court, Collier County, Florida – Case No. 95 2052 CA-01-TB
- Seventeenth Judicial Circuit, Broward County, Florida – Case No. 93-13263-14
- Charlotte County, Florida – Docket No. 92-106.06-WS
- Federal Energy Regulatory Commission – Docket No. ER83-369
- Louisiana Public Service Commission – Docket No. U-15684 (1983)
- North Carolina Utilities Commission – Docket No. G-21, Sub 235 (1983)

LITIGATION SERVICES

Presented testimony as an expert witness or provided litigation support services before the following state and federal jurisdictions on utility rate, acquisition, and cost of service issues:

- Sarasota County, Public Utilities Commission – Pluris Southgate, Inc. (No Docket)
- Charlotte County Board of County Commissioners, Waste Management of Florida, Inc. Rate Case, Docket No. WM016-001-SW (2016)
- Lake Osborne Waterworks, Inc. vs. City of Lake Worth, Florida in the Circuit Court of the 15th Judicial Circuit in and for Palm Beach County, Florida – Case No. 502014-CA-008137 (2016)
- Fletcher Allen, et. al. vs. The Water Works Board of the City of Birmingham in the Circuit Court of Jefferson County, Alabama – Civil Action No. CV 2009 908
- Sarasota County, Public Utilities Commission – Aqua Utilities Florida, Inc. (2008) (No Docket)
- City of Treasure Island vs. City of St. Petersburg in the Circuit Court for Pinellas County, Florida Circuit Civil Division – Case No. 08-15359-CI-11

INDUSTRY PUBLICATIONS

- Contributing Author for the Water Environment Federation's 2017 published special publication, The Water Reuse Roadmap.
- Contributing Author for the most recent published volume of the AWWA Manual of Practice 29 (M29): Fundamentals of Water Utility Capital Financing, Fourth Edition

- Contributing Author for the most recent published volume of the AWWA Manual of Practice 1 (M1): Principles of Water Rates, Fees and Charges, Seventh Edition.

PRESENTATIONS/OTHER COMMUNITY SERVICES

- Member of Citizens Advisory Group for Seminole County Educational Impact Fees, Seminole County, FL, 2017.
- Florida Government Finance Officers Association, "Capital Financing Plan: What Are My Options?" 2016 FGFOA Annual Conference, Orlando, FL, June 14, 2016.
- Florida Water Resources Journal, "Preparing for Rate Studies and Bond Financings: Is Your Utility Ready?" May 2013 issue.
- Broward Leaders Water Academy, "A Water and Wastewater Utility Perspective on Water Supply and Pricing," January 11, 2013.
- Florida Section of the American Water Works Association, "Preparing for Rate Studies and Bond Financings: Is Your Utility Ready?" Fall 2012 Conference, Orlando, Florida, November 27, 2012.
- American Water Works Association Journal, "Utility Rates and the Political Environment," August 2011 issue with Bryan Mantz. Article received the 2011 AWWA Management and Leadership Division Best Paper Award.
- Florida Government Finance Officers Association, "Financial Analysis of Utility Systems", Annual Conference, Orlando, Florida, May 25, 2010.
- Florida Government Finance Officers Association, "Utilities are Big Business" Annual Conference, Tampa, FL, June 2, 2009.
- The First Idaho Wastewater Reuse Conference, "Managing Wastewater Reuse Implementation as an Emerging Utility" with Blair Troutman, May 24-25, 2005 Boise, ID.
- Florida Government Finance Officers Association, "Developing Meaningful Management Reports," Annual Conference, Tampa, Florida, May 4, 2004.
- Member of the Charter Review Committee for the City of Winter Springs, Florida, 2001.
- Seventh Annual American Water Works Association Customer Service Workshop, "Contract Operations: The Martin County Experience," Tampa, Florida, March 22, 1998.
- American Water Works Association, "Competition and Customer Service," 1997 Conference on Customer Service Issues, Stuart, Florida, January 24, 1997.
- Member of Florida Section American Water Works Association Water Conservation Committee 1992-1997.
- American Water Works Association, "Public-Private Partnering for Utility Infrastructure Financing in Collier County, Florida," 1995 Annual Conference & Exposition, Anaheim, California, June 18-22, 1995.
- Florida Water Resources Journal, "Innovative Water Conservation Ratemaking," August 1995 issue.
- American Water Works Association, "Utility Acquisitions," Conference on Water Utility Financing, Orlando, Florida, April 1, 1993.
- 1992 Florida Water Resources Conference, "Establishing Water Conservation Rates," 67th Annual Conference, Daytona Beach, Florida, November 1-4, 1992.
- Florida Government Finance Officers Association, "Water Conservation Rates and Solid Waste Variable Rates," 49th Annual Conference, Miami, Florida, April 7-10, 1991.
- American Water Works Association, "Innovative Financing Alternatives," Conference on Water Management Issues, Sarasota, Florida, August 16, 1990.