RAFTELIS

Kimley»Horn
Expect More. Experience Better.

Town of Vienna

Water System Valuation and Condition Assessment

RFP 25-10 / DECEMBER 20, 2024

DEI@ RAFTELIS

Diversity and inclusion are an integral part of Raftelis' core values.

We are committed to doing our part to fight prejudice, racism, and discrimination by becoming more informed, disengaging with business partners that do not share this commitment, and encouraging our employees to use their skills to work toward a more just society that has no barriers to opportunity.

REGISTERED MUNICIPAL ADVISOR

Raftelis is registered with the U.S. Securities and Exchange Commission (SEC) and the Municipal Securities Rulemaking Board (MSRB) as a Municipal Advisor.

Registration as a Municipal Advisor is a requirement under the Dodd-Frank Wall Street Reform and Consumer Protection Act. All firms that provide financial forecasts that include assumptions about the size, timing, and terms for possible future debt issues, as well as debt issuance support services for specific proposed bond issues, including bond feasibility studies and coverage forecasts, must be registered with the SEC and MSRB to legally provide financial opinions and advice. Raftelis' registration as a Municipal Advisor means our clients can be confident that Raftelis is fully qualified and capable of providing financial advice related to all aspects of financial planning in compliance with the applicable regulations of the SEC and the MSRB.

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COMPANY OVERVIEW

Company Overview

HELPING LOCAL GOVERNMENTS AND UTILITIES THRIVE

Local government and utility leaders partner with Raftelis to transform their organizations by enhancing performance, planning for the future, identifying top talent, improving their financial condition, and telling their story. We've helped more than 700 organizations in the last year alone.

We believe that Raftelis is the *right fit* for this project. We provide several key factors that will benefit the Town and help to make this project a success.

RESOURCES & EXPERTISE: This project will require the resources necessary to effectively staff the project and the skillsets to complete all of the required components. With more than 180 consultants, Raftelis has the largest water-industry financial and management consulting practice in the nation, including many of the industry's leading rate consultants and experts in key related areas, like stakeholder engagement and data analytics. Our depth of resources will allow us to provide the Town with the technical expertise necessary to meet your objectives.

DEFENSIBLE RECOMMENDATIONS: When your elected officials and customers are considering the validity of recommended changes, they want to be confident that they were developed by experts using the latest industry standard methodology. Our staff are involved in shaping industry standards by chairing committees within the American Water Works Association (AWWA) and the Water Environment Federation (WEF) and co-authoring many industry-standard books regarding utility finance and rate setting. Being so actively involved in the industry will allow us to keep the Town informed of emerging trends and issues and to be confident that our recommendations are insightful and founded on sound industry principles. In addition, with Raftelis' registration as a Municipal Advisor, you can be confident that we are fully qualified and capable of providing financial advice related to all aspects of utility financial planning in compliance with federal regulations.

HISTORY OF SIMILAR SUCCESSES: An extensive track record of past similar work will help to avoid potential pitfalls on this project and provide the know-how to bring it across the finish line. Raftelis staff has assisted 1,700+ local governments and utilities throughout the U.S. with financial and rate consulting services with wide-ranging needs and objectives. Our extensive experience will allow us to provide innovative and insightful recommendations to the Town and will provide validation for our proposed methodology ensuring that industry best practices are incorporated.

USER-FRIENDLY MODELING: A modeling tool that your staff can use for scenario analysis and financial planning now and into the future will be key for the Town going forward. Raftelis has developed some of the most sophisticated yet user-friendly financial/rate models available in the industry. Our models are tools that allow us to examine different policy options and cost allocations and their financial/customer impacts in real time. We offer model options including Microsoft Excel-based and web-based tools that are developed with the expectation that they will be used by the client as a financial planning tool long after the project is complete.

RATES THAT ARE ADOPTED: For the study to be a success, rates must be successfully approved and implemented. Even the most comprehensive rate study is of little use if the recommendations are not approved and implemented. Raftelis has assisted numerous agencies with getting proposed rates successfully adopted. We focus on effectively communicating with elected officials about the financial consequences and rationale behind recommendations to ensure stakeholder buy-in and successful rate adoption.

Statement of Qualifications

ECONOMIC SERVICES AT RAFTELIS

Raftelis has long been the industry leader in providing public sector utility clients with unparalleled experience, qualifications, and service. With the same focus, Raftelis has created a team of professionals with strong education, training, and experience in the field of Economics to provide a whole new line of services to our clients.

> ***"Risk comes from not knowing what you're doing." – Warren Buffet***

WHAT WE DO

We do analytics. The extensive use of data, statistical and quantitative analysis and explanatory and predictive models is the foundation of fact-based management to drive decisions and actions. The complexity of managing public and private resources requires moving beyond simple facts more than ever – it requires transforming data into insight. Ignoring fact-based management has also never been riskier. Making decisions in both public and private markets without analytics will either be lucky or wrong. Consequently, making the right decision is always better with the right information. The professionals providing economic services at Raftelis are a blend of highly experienced staff that can help maximize opportunities with the appropriate mix of analytical insights aimed at 1) optimizing public and private resources and 2) understanding community impacts of public and private market decisions.

OPTIMIZING PUBLIC AND PRIVATE RESOURCES

Scarcity of resources is a basic economic problem in both public and private markets that will always exist. Frankly, if scarcity did not exist, there would not be a need for economic analysis. With the ability to manage very complex systems with significantly large amounts of data, we help public and private clients understand optimal solutions for creating value, generating revenue, or minimizing the effects of added costs. These services and insights are provided from:

- Business Valuation and Appraisal
- Project (Development) Financial Feasibility Analysis
- Market Analysis or Market Study
- Industry, Business, or Consumer Surveys
- Developer Incentive Agreements

VALUATION SERVICES

Within our Economics practice area, Business Valuation and Appraisal services have been provided for purposes of insurance, litigation, and purchase and sale transactions (M&A), generally resulting in a detailed summary, or oral appraisal or value reports. A Business Valuation, as defined by Uniform Standards of Professional Appraisal Practice ("USPAP") Standard 9, provides a specific value based on purpose and use of the appraisal or calculation. All valuation services provided conform with the Professional Standards of the NACVA. Professional experience with providing Business Valuation services has included the following:

- Wisconsin IOU (Natural Gas), 2024 – Asset Transaction

- Waste Disposal Company (Waste-to-Energy), 2024 – Asset Transaction
- Florida IOU (Water/Sewer), 2024 – Asset Transfer
- South Carolina Public Utility (Water/Sewer), 2024 – Asset Transaction
- Alabama Water Rights, 2024 – Lender Collateral
- Florida Public Utility (Water), 2024 – Asset Transaction
- Tennessee Public Utility (Water), 2023 – Asset Transaction
- Florida Public Utility (Waste-to-Energy), 2023 – Asset Transaction
- Florida IOU (Water), 2023 – Asset Transaction
- Florida Public Utility (Propane), 2023 – Asset Transaction
- Tennessee Public Utility (Water), 2023 – Asset Transaction
- California Public Utility (Water), 2023 – Asset Transaction
- California Public Utility (Solid Wate), 2023 – Asset Transaction
- North Carolina Public Utility (Water), 2023 – Asset Transaction
- Texas IOU (Water), 2023 – Asset Transaction
- South Carolina Public Utility (Electric), 2023 – Asset Transaction
- South Carolina Public Utility (Water), 2023 – Asset Transaction
- South Carolina Public Utility (Sewer), 2023 – Asset Transaction
- Texas IOU (Water), 2023 – Asset Transaction
- North Carolina IOU (Sewer), 2022 – Asset Transaction
- North Carolina IOU (Sewer), 2022 – Asset Transaction
- Florida Public Utility (Service Area Rights), 2022 – Asset Transaction
- Florida IOU (Water), 2022 – Asset Transaction
- Arizona (7 systems) Utility, 2022 (Water) – Asset Transaction
- South Carolina Utility, 2022 (Water) – Asset Transaction
- Virginia Public Utility, 2022 (Water and Sewer) – Divestiture
- South Carolina Public Utility, 2022 (Water) – Asset Transaction
- North Carolina Public Utility, 2022 (Water) – Asset Transaction
- Ohio Public Utility, 2022 (Water) – Asset Transaction
- South Carolina Public Utility, 2021 (Wastewater) – Asset Transaction
- Florida Public Utility, 2021 (Water) – Asset Transaction
- Florida Public Utility, 2021 (Natural Gas) – Asset Transaction
- Pennsylvania Public Utility, 2021 (Sewer) – Asset Transaction
- Texas IOU (Water), 2021 – Asset Transaction
- Florida Public Utility, 2021 (Service Area) – Litigation
- Pennsylvania Public Utility, 2021 (Sewer) – IOU Acquisition
- California Water Market, 2021 (Credits) – Asset Transaction
- Pennsylvania Public Utility, 2021 (Sewer) – IOU Acquisition
- Florida Public Utility, 2020 (Water) – Asset Transaction
- Florida Public Utility, 2020 (Water) – Foreclosure
- Florida Public Utility, 2019 (Water and Wastewater) –Business Damages
- Florida Public Utility, 2019 (Water and Wastewater) –Acquisition
- Florida Public Utility, 2018 (Chilled Water) – Acquisition
- California Private Discharge Capacity, 2018 (Wastewater) –Acquisition
- Tennessee Public Utility, 2018 (Electric) – Acquisition
- Florida IOU, 2017 (Water-Sewer) – Acquisition
- Florida IOU, 2017 (Electric) – Tangible Property Tax
- Ohio IOU, 2017 (Water) – Financing
- Florida Public Utility, 2017 (Water Storage) – Acquisition
- South Carolina Public Utility, 2016 (Water) – Acquisition
- Ohio Public Utility, 2016 (Water-Sewer) – Acquisition
- Mississippi Certificate of Public Conveyance and Necessity, 2016 (Water) – Acquisition
- Florida IOU, 2016 (Electric) – Tangible Property Tax
- Florida IOU, 2015 (Electric) – Acquisition

Subconsultant: Kimley-Horn

Founded in 1967, Kimley-Horn is one of the nation's premier engineering and design firms. With more than 8,600 employees in 130+ offices, they are proud to be ranked 10th on *Engineering News-Record's* 2024 Top 500 design firms. At Kimley-Horn, their motto of *Expect More, Experience Better* is part of their core values and showcases their commitment to exceptional client service.

Kimley-Horn has been providing asset inventory, mapping, condition assessment, and asset management services to state agencies and municipalities across the country for more than 15 years. By working interactively with their clients at all operational levels, they can assess current procedures, compare them to State requirements, identify gaps, and develop a client-specific, time-phased implementation plan with specific steps for closing those gaps. Kimley-Horn can help create a strategy to meet State requirements, while optimizing operations and maintenance of the utilities' assets.

Kimley-Horn has provided roadway and transportation on-call support services to the Town of Vienna, delivered the Maple Avenue Corridor Study, and recently kicked off the Long-Term/Use Study of the Annex Property. They are familiar with delivering multidisciplinary projects in your community and meeting the technical rigor and outreach expected by the residents and Council of Vienna.

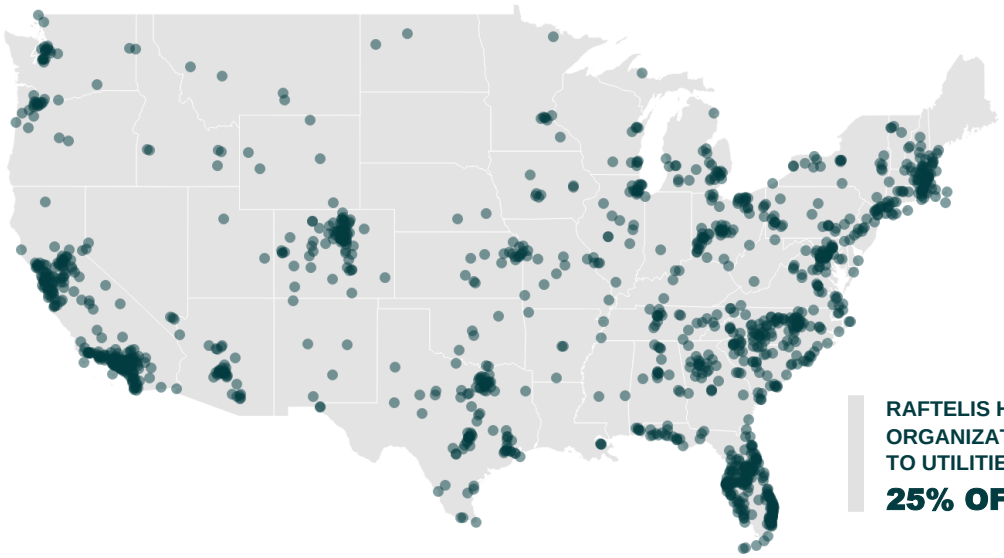
Their asset management team understands the type of utility planning challenges these municipalities are facing, and they have the skills, insight into municipal governments, and knowledge of the areas they serve to develop decision support tools that will materially assist their clients in addressing these critical challenges.

EXPERIENCE AND REFERENCES

Experience and References

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

Our staff has assisted more than 1,700 local government agencies and 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 1,300 financial, organizational, and/or technology consulting projects for over 700 agencies in 47 states, the District of Columbia, and Canada. Below, we have provided descriptions of projects that we have worked on that are similar in scope to the Town's project. We have included references for each of these clients and urge you to contact them to better understand our capabilities and the quality of service that we provide.



RAFTELIS HAS PROVIDED FINANCIAL/ ORGANIZATIONAL/TECHNOLOGY ASSISTANCE TO UTILITIES SERVING MORE THAN

25% OF THE U.S. POPULATION.

RAFTELIS' REFERENCES

USPAP requires that valuation assignments remain confidential unless our clients provide permission to disclose assignment details. Similar projects with references are listed as follows for those assignments that we have permission to disclose:

City of Georgetown SC

Reference: Scott Whittier, City Administrator
417 Wood Street, Georgetown, SC 29440 / P: 843.545.4001 / E: swhittier@georgetownsc.gov
Time Period: 2023

Water, Sewer, and Electric System Valuation/Appraisal; Three (3) Valuation/Appraisals completed for the City of Georgetown. The purpose of the Valuation/Appraisals provided by Raftelis was for the development of a Fair Market Value of the systems for potential transactions. Steven served as Appraiser and Project Manager for this project.

Town of Clayton NC

Reference: Robert McKie, Finance Director
111 E Second Street, Clayton, NC 27520 / P: 919.553.5002 / E: rmckie@townofclaytonnc.org
Time Period: 2022

Advanced Wastewater Treatment Plant Valuation/Appraisal; Valuation/Appraisal completed for a city in North Carolina. The purpose of the Valuation/Appraisal provided by Raftelis was for the development of a Fair Market Value of the system for a potential transaction. Steven served as Appraiser and Project Manager for this project.

Schroeder-Manatee Ranch FL

Reference: Tony Chiofalo, CFO
14400 Covenant Way, Lakewood Ranch, FL 34202 / P: 941.757.1602 / E: tony.chiofalo@smrranch.com
Time Period: 2022

In 2022, Raftelis completed a Valuation/Appraisal of Braden River Utilities, LLC serving the Lakewood Ranch communities located in Manatee and Sarasota County, Florida, part of the North Port-Sarasota-Bradenton Metropolitan Statistical Area ("MSA") south of the Tampa Bay-St Pete MSA. Lakewood Ranch is a master planned community and census-designated place consisting of approximately 31,000 acres (nearly 50 square miles) and is located east of Interstate 75 ("I-75"), with access from four I-75 interchanges. The City of Sarasota is located approximately ten (10) miles southwest and the City of Bradenton is located approximately twelve (12) miles northwest. The system, including both tangible and intangible assets, is a non-potable irrigation water supply, transmission, and storage system providing services to properties within the entire area of LWR with facilities, permits, and operational rights, certain service area rights. The utility delivers more than 5 billion gallons of non-potable water each year. The purpose of the Valuation/Appraisal provided by Raftelis was for the development of a Fair Market Value of the system for a potential transaction. Steven served as Appraiser and Project Manager for this project.

Camarillo Airport CA

Reference: Erin Powers, Projects Administrator
800 South Victoria Avenue, Ventura, CA 93009 / P: 805.654.5000 / E: erin.powers@ventura.org
Time Period: 2021

In 2021, Raftelis completed a Valuation/Appraisal of Water Credits in the City of Camarillo, California ("City"). In 2016, the City amended its municipal codes creating a Water Demand Offset Program that requires all proposed new development or redevelopment of five or more residential dwelling units or 10,000 or more square feet of non-residential uses to provide evidence of the proposed offset of 100% of new potable water demand from existing water users within the City's service area. A proposal to offset new water demand must be provided in the form of a contract with an existing water customer that identifies the specific water conservation measures to be implemented and obligates the existing customer to provide on-going maintenance and replacement as necessary. The purpose of the appraisal services provided by Raftelis was for the development of a Fair Market Value of the Water Credits under the City's program. The appraisal services provided represented a Calculation Engagement and the estimate of value contained in the final report was expressed as a Calculated Value. A Calculation Engagement occurs when the Client and appraiser agree to specific valuation approaches, methods, and the extent of selected procedures. This Calculation Engagement did not include all the procedures required for a Conclusion of Value. Steven served as Appraiser and Project Manager for this project.

City of Gulf Breeze FL

Reference: Sam Wilson, Public Services Manager
1070 Shoreline Drive, Gulf Breeze, FL 32561 / P: 850.934.5130 / E: swilson@gulfbreezefl.gov
Time Period: 2021

In 2021, Raftelis completed a Valuation/Appraisal of Gulf Breeze Natural Gas located in Santa Rosa County, Florida operating as a natural gas utility. The assets, including both tangible and intangible assets, are part of a natural gas distribution system with facilities, permits, operational rights, and service area rights. The system provides natural gas in a service area of approximately 30 square miles with slightly less than 4,600 customers and approximately 164 miles of distribution lines. The purpose of the Valuation/Appraisal provided by Raftelis was for the development of a Fair Market Value of the system for a potential transaction. Steven served as Appraiser and Project Manager for this project.

Spartanburg Water SC

Reference: Newt Pressley, CFO, Spartanburg Water
200 Commerce Street, Spartanburg, SC 29306 / P: 864.583.7361 / E: npressley@sws-sssd.org
Time Period: 2021

In 2021, Raftelis completed a Valuation/Appraisal of the City of Chesnee public wastewater system. The assets are located in Spartanburg and Cherokee County, South Carolina. The Subject Assets, including both tangible and intangible assets, are part of a wastewater collection and treatment system with facilities, permits, operational rights, service area rights and sufficient demand to create a going concern at the date of the appraisal. The system consists of a wastewater treatment plant ("WWTP") with a design capacity of 0.5 MGD, three (3) lift stations, and a collection system with 67,056 linear feet ("LF") of gravity sewer mains, 3,168 LF of sewer force mains, and 250 manholes. The WWTP is an activated sludge system currently designed and rated to treat 500,000 gallons per day ("GPD"). The WWTP was originally constructed to treat 200,000 GPD and was upgraded in 1996. The current treatment train consists of preliminary and secondary collection system, disinfection system, and waste sludge collection. The purpose of the Valuation/Appraisal provided by Raftelis was for the development of a Fair Market Value of the system for a potential transaction. Steven served as Appraiser and Project Manager for this project.

KIMLEY-HORN'S REFERENCES

Water Authority of North Shore NY

Reference: George Pombar, Board Member
PO Box 537, Glen Head, NY 11545 / P: 917.796.0357 / E: george.pombar@wanorthshoreny.gov
Time Period: May 2024 – Ongoing

Kimley-Horn provided engineering support in collaboration with the Authority's appraiser to assess the North Shore/Sea Cliff water system. In support of this effort, Kimley-Horn performed a combination of desktop and onsite assessments to evaluate the condition of and future capital needs for the Sea Cliff Elevated Storage Tank and Water Treatment Facility and Glen Head Storage Tank and Water Filtration Plant, including 350,000 LF of distribution and transmission piping, 500 main line valves, and more than 300 fire hydrants.

Old Bridge Municipal Utilities Authority NJ

Reference: Michael Roy, Executive Director/Authority Engineer
71 Boulevard West, Cliffwood Beach, NJ 07735 / P: 732.566.2534 / E: executive@obmua.com
Time Period: June 2022 – October 2024

Kimley-Horn provided consultant engineering services to OBMUA supporting an analysis of existing and proposed water rates and a cost-of-service model. Working as a subconsultant to Raftelis, our team provided engineering expertise in support of a successful effort to reduce the cost of service to OBMUA by their wholesale water provider.

KEY PERSONNEL

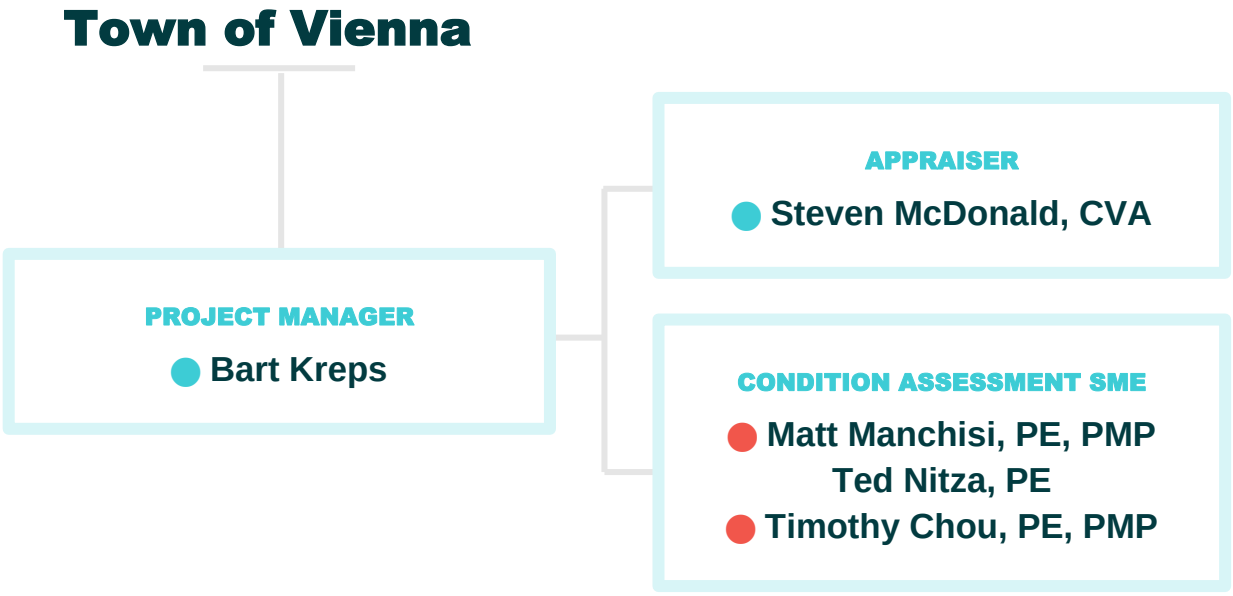
Key Personnel

WE HAVE DEVELOPED A TEAM OF CONSULTANTS WHO SPECIALIZE IN THE SPECIFIC ELEMENTS THAT WILL BE CRITICAL TO THE SUCCESS OF THE TOWN'S PROJECT.

Our team includes senior-level professionals to provide experienced project leadership with support from talented consultant staff. This close-knit group has frequently collaborated on similar successful projects, providing the Town with confidence in our capabilities.

Here, we have included an organizational chart showing the structure of our project team. In the Appendix, we have included resumes for each of our team members.

Main Point of Contact: Bart Kreps, Executive Vice President
P: / E: bkreps@raftelis.com



Raftelis
Kimley-Horn
SME – Subject Matter Expert

AVAILABILITY

Availability

The Key Personnel at Raftelis and Kimley-Horn that would be assigned to providing the Valuation/Appraisal and Condition Assessment of the Town's water system have sufficient availability to complete these tasks as scheduled.

Project Understanding

VALUATION/APPRAISAL UNDERSTANDING

A utility system, generally consisting of integrated demand or supply, distribution or collection, and end-users of a commodity (e.g., water, wastewater, irrigation, solid waste, electricity, or gas) is a special purpose property. Since these assets are specifically designed, configured, and constructed solely as a utility system, no alternate highest and best use would be considered in developing a Conclusion of Value (a Conclusion of Value can be stated in a range of value as well as a single value). In addition, ownership of this special purpose property would be expected to include a bundle of rights which could include (if applicable to the system), but is not limited to, physical assets, certain real property, operating permits or demand and supply contracts, specialized facilities, operational rights, service area rights, as well as other tangible and intangible assets. As a special purpose property, there is no going concern value for land, buildings, and equipment (PP&E) as a utility system or business enterprise independent of, or without the intangible rights and permits to provide services for a base of customers, operate with or without competition, and deliver an essential public purpose use to a generally protected, defined service area. As such, the development of a Conclusion of Value, whether defined as Fair Market Value, Fair Value, or Investment Value, requires the appropriate application of procedures, approaches, and methods that conform to USPAP. The Valuation/Appraisal of the Town's water system ("Subject Assets") will be prepared in accordance with the NACVA®'s Professional Standards, USPAP, and applicable state and local laws, municipal rules and regulations, or market regulations (if any).

DIFFICULTIES WITH VALUATION/APPRAISAL ASSIGNMENTS

In our experience, the most common difficulties with a Valuation/Appraisal of a utility system generally include the following:

1. Definition of "value" – We have occasionally encountered appraisals that do not accurately define the standard and premise of value. An appraiser's conclusion is an opinion of value, which can be very different if the purpose of the appraisal should be a fair market value, fair value, investment value, or liquidation value. It is critical that an appraiser thoroughly discusses in detail a client's purpose of an appraisal report and the most appropriate application of standard and premise of value for the utility system.
2. Reliance on a cost (replacement or reproduction) approach – We commonly encounter reports that are presented as appraisals that only consider the application of an engineering cost analysis as the "value" of a system. A utility system's market value is not exclusively the cost to replace the tangible assets. Because a utility system generally always includes significant intangible assets and potential market buyers will likely consider more than just cost, it is critical that an appraisal consider all three common appraisal approaches (cost, income, and market).
3. Value of real estate – We have commonly encountered two issues with how real property is considered in an appraisal of a utility system. First, it is common that separate real property appraisals are included that consider the value of real estate as-if vacant, which can overstate the value of real property. In our opinion, as long as real property is in-place, in-service for a utility use, it doesn't have any alternative highest-and-best-use; it should only be valued as utility property and, in fact, is already considered as a bundled of value with the income and market approaches. Second, in the case of property that is either excess or held for future use, it should be included as an asset that has the potential of reflecting a market value not connected with the utility system. The bottom line is that the consideration of real property value as an asset requires the appropriate consideration by the appraiser.

Valuation Scope

The Valuation/Appraisal[1] of the Utility System ("Subject Assets") will be prepared in accordance with the NACVA®'s Professional Standards, USPAP, and applicable state and local laws, municipal rules and regulations, or market regulations (if any). The scope of services, subject to limiting conditions included at the end, to be performed by Raftelis with respect to this assignment, is as follows:

Task 1: Define Scope of Valuation/Appraisal Assignment

An initial kick-off meeting would be used to confirm certain aspects of the assignment as well as generate a list of data needs. The goals for this meeting and subsequent data request would include:

- Identify the client and other intended users of Valuation/Appraisal Report,
- Identify the intended use of the Conclusion of Value contained in the Valuation/Appraisal Report,
- Identify the date of the Conclusion of Value,
- Identify the characteristics of the Subject Assets to include:
    - Physical, operating, and financial description of the utility system,
    - Interest in the Subject Assets being valued ("Subject Interest"),
    - Define existing ownership structure,
    - Identification of any agreements, jurisdictional exceptions, or ownership restrictions that may influence the Conclusion of Value, if any,
    - Identify the extent to which the Subject Interest contains or is limited in ownership control, and
    - Identify the extent to which the Subject Interest is marketable or liquid.

PLANNED MEETINGS:

- Virtual kick-off meeting

DELIVERABLES:

- Data request list

Task 2: Standard and Premise of Value and Assumptions and Conditions, if any, required to form a Conclusion of Value

Following the confirmation of certain aspects of the assignment (Task 1) and a review of quality and quantity of data, we expect to complete the following:

- Define the standard and premise of value and the scope of work required to form a Conclusion of Value.
- Identify any Extraordinary Assumptions. Extraordinary Assumptions will only be used if:
    - The assumption is required to develop a credible Conclusion of Value,
    - There is a reasonable basis for the assumption, and
    - The assumption results in a credible analysis.
- Identify and Hypothetical Conditions. Hypothetical Conditions will only be used if:
    - The condition is required for legal purposes, for purposes of reasonable analysis, or for purposes of comparison, and
    - The condition results in a credible analysis.
- Identify any jurisdictional exceptions or scope limitations.

[1] Appraisal – the act or process of developing an opinion of value; an opinion of value. Valuation Services – a service pertaining to an aspect of property value. USPAP 2024.

Task 3: Valuation Approaches

Under this task, we will develop the analyses necessary to form a Conclusion of Value using standard industry approaches, to include the Cost (asset) Approach, Income Approach, and Market (Comparable Sales) Approach. All standard approaches will be considered, and analyses may be performed using different methods within each approach. However, the results of all analyses may not be used in developing the Conclusion of Value. Any approach excluded will be identified with the basis for excluding those results will be documented.

Cost (Asset) Approach

This analysis will consider Original Cost Less Depreciation ("OCLD") and calculation of either a Replacement or Reproduction Cost New ("RCN") Less Depreciation for the Subject Interest. The estimated RCN will be determined by using a detailed cost method whereby estimated labor and material prices are applied to the inventory of facilities and equipment provided by the Client. This scope does not include efforts to conduct a detailed inventory or reconciliation of system assets. If sufficient data is not available to perform the detailed cost method, RCN will be calculated by trending the original cost of equipment and facilities by vintage year to the valuation date. Physical depreciation will be estimated based on an age/life methodology and also by taking into account observations of the above-ground facilities. This analysis will also determine the amount (if any) of functional depreciation and/or economic obsolescence that may be present in the Subject Assets.

Income Approach

This analysis will consider either a discounted cash flow ("DCF") or a single-period capitalization of income ("Direct Capitalization") or other form of standard income approach. The DCF and Direct Capitalization will generally rely on data provided by the Client that is deemed to be complete, reliable or accurate. Preparation of the DCF and Direct Capitalization will also include the determination of an appropriate discount rate for the date of valuation. The discount rate will be based on a determination of the estimated cost of capital, including specific risk, applicable to the most likely representative buyers for the Subject Interests. Data required for the calculation of the discount rate will be obtained from various public sources such as the Federal Reserve Bulletin and Duff & Phelps, among others.

It is important to note that the consideration and utilization of the Income Approach is significantly dependent on the nature of existing and future ownership and market (i.e., regulated, non-regulated). If a transaction results in a change of ownership and market from a public or municipal-owned utility (MOU) to an investor-owned (IOU) or vice-versa, it is common to consider but disregard an indication of value resulting from the income approach. This approach will be considered but may not be used as an indication of value.

Market (Comparable Sales) Approach

This analysis will consider publicly available data on comparable sales of similar facilities (Completed Transactions Method) or enterprise value multiples for public traded companies (Guideline Public Company Method) that may be used in indicating a value of the Subject Interests. This analysis will review and analyze the comparable sales and financial data for applicability and comparability to the Subject Interest, from a physical, operational, ownership, and market (i.e., regulated, non-regulated) perspective.

The application of the approaches described above will consider and analyze the effect on value, if any, of the following:

- The nature and history of the Subject Assets,
- Financial and economic conditions affecting the Subject Assets, its industry, and general economy,
- Past, current, and future physical, operating, and financial results and prospects of the Subject Assets,

- Any prior transactions of the Subject Interest, including prices, terms, and conditions, if any,
- Functional or external depreciation or obsolescence (if applicable), and
- The economic benefit of tangible and intangible assets (if applicable).

PLANNED MEETINGS:

- On-site system inspection

Task 4: Develop a Conclusion of Value

Considering the approaches, methods, and procedures in Task 3, provide a Conclusion of Value of the Utility System. This task would include the following:

- Reconcile the quality and quantity of data available and analyzed within the approaches, methods, and procedures used in developing a conclusion of value, and
- Reconcile the applicability and relevance of the approaches, methods, and procedures used in developing a Conclusion of Value.
- Reconciliation of the Conclusion of Value will also consider:
    - The extent of ownership control of the Subject Interest, and
    - The marketability of the Subject Interest.

PLANNED MEETINGS:

- Web-based (virtual) meeting with client to review Valuation Report

DELIVERABLES:

- Draft (Work-in-Progress) Valuation Report

Task 5: Final Report and Presentations

Raftelis will incorporate any edits required from client comments or questions from the draft report into a final report. Upon finalization of the report, the Client will be provided an electronic and physical copy of the report.

DELIVERABLES:

- Final report

Condition Assessment Scope

A Condition Assessment of a water system can involve a wide range of tasks and activities based on the utility's main objectives. The following provides a general scope of work for a Condition Assessment that we recommend will be finalized in consultation with the Town to add or exclude certain activities as needed. This information is intended to aid in conceptualizing a scope for a Condition Assessment and should be tailored for the Town's specific needs. Generally, the main objective of a Condition Assessment is to develop an understanding of the Town's water consumption, possibly identify cost-effective water efficiency measures, and to plan for future capital improvement needs.

THE FOLLOWING ARE GENERAL ELEMENTS OF A CONDITION ASSESSMENT:

1. Evaluation of current water use and costs associated with water supply;
2. Development of a water balance that provides a detailed breakdown of water use by end-use/process;
3. Evaluation of efficiency opportunities and identification of life-cycle cost-effective measures;
4. Strategic plan for meeting future capital improvement needs.

Task 1: Background Development and Preparation

Historical water consumption analysis – Understanding the historic water use is vital to an effective Condition Assessment, so trends in water use can be understood and a baseline can be established. To accomplish this, the assessment can include:

- Collect and analyze at least 2 years of data for total supply and all sub-metered water data;
- Estimate system losses based on system condition and age, and document the method used for determining system losses;
- Develop annual distribution curve (water use over time) to show seasonal variations of water use, including sub-metered and estimated losses; and
- Develop baselines for both potable water, and industrial, landscaping and agricultural use, accounting for consumptive use from both potable and non-potable sources.

Items Furnished by the Facility

Background data – The facility will provide background information to the assessment team for prioritization of the walk-through audits. This background data includes:

- Historic water and wastewater bills or data from supply generated and/or treated onsite
- Sub-metered data on water processes and buildings
- Building floor space by building type
- Occupancy data
- Equipment lists
- Maintenance schedules
- Site and individual building maps
- Distribution system maps

Task 2: Walk-Through Audits

The contractor shall perform walk-through audits of system assets that were identified in Task 1.

Task 3: Water Balance Development

The Condition Assessment could develop a water balance that provides water consumption by major end-use categories. This task could include the following elements:

- ***Water balance*** – Develop a water balance that estimates current equipment and process water use by major end-use categories and system losses and compares this total to water supply; and
- ***Graphical elements*** – Show water balance in graphical form in a flow chart and/or pie chart that breaks out water use by major end-use categories and estimated losses.

Task 4: Water Efficiency Investigation and Economic Analysis

- ***Efficiency opportunity assessment*** – Assess opportunities for water improvements in each major end-use. Include a consideration for retrofit, replacement, operation and maintenance improvements, and applications for sub-metering;
- ***Alternate water sources identification*** – Identify alternate water sources to offset the use of freshwater sources and provide estimated potential of annual water volume, as well as potential applications where the alternate source could be utilized; and
- ***Life-cycle cost analysis*** – Perform life-cycle cost (LCC) analysis of all measures.
- The LCC analysis shall include the following parameters:
- Water and wastewater costs and other ancillary costs of water-consuming equipment, such as energy, operations and maintenance (O&M), and chemicals
- Estimated water and wastewater escalation rates
- Available utility rebates for installed measures, if applicable
- ***Prioritization of efficiency opportunities*** – Rank each measure based on LCC effectiveness and installation cost, addressing both short-term and long-term investment opportunities.

Task 5: Final Report

The final report for the Condition Assessment could be expected to provide a concise overview of the major results of the assessment that includes the following:

- Prioritized list of water efficiency opportunities
- Baseline water-use and method used to determine this value
- Water rates, marginal costs of water and wastewater, and other associated costs, such as energy
- Water distribution curve that provides water use over time showing historic seasonal fluctuations
- Water balance shown in graphical form that shows all major water uses by end use and comparison to incoming supply and discharged wastewater that reveals estimated losses of the system. Include general methods used to estimate end-use consumption
- Detailed information on efficiency opportunities that include O&M, retrofit, and replacement options for each major water-using piece of equipment, as well as recommendation for sub-metering
- Prioritized list of water capital improvement opportunities
- Alternate water sources with estimated potential of annual water volume, as well as potential applications where the alternate source could be utilized
- Plan for meeting annual water capital improvements.

LIMITING CONDITIONS TO THE SCOPE OF WORK

- No responsibility would be assumed for legal matters, nor will any opinion on any title related to the Utility System be rendered. It would be assumed that any title is good and marketable.
- All existing liens and encumbrances, if any, would be assumed to have been discharged and the assets would be appraised as though free and clear.
- No certified survey of the property underlying the assets would be included in the report and, unless specifically stated, it would be assumed there are not encroachments involved.
- Any sketches and maps in a draft or final report would be included to assist the reader in visualizing the system and are not necessarily to scale or depict all items above or below ground.
- It would be assumed that the assets are in full compliance with all applicable federal, state, and local environmental regulations and laws unless non-compliance is stated, defined, and considered.
- It would be assumed that all applicable zoning and land use regulations and restrictions have been complied with, unless non-conformity would be stated, defined, and considered.
- It would be assumed that all required licenses, certificates of occupancy, consents, and other legislative or administrative authority from any local, state, or national government or public entity or organization have been or can be obtained or renewed for any use on which the system value is based.
- It would be assumed that any and all permits and easements required to operate the system can be transferred in the event of an acquisition with reasonable time and effort.
- Proposed improvements, if any, on or off-site, as well as any repairs required, would be considered for purposes of the appraisal to be completed in a good and workmanlike manner.
- Responsible ownership and competent property management of the system would be assumed.
- It would be assumed that there are no hidden or unapparent conditions of the system, property, soil, or structures as a whole which would render the assets more or less valuable. Further, unless otherwise stated in a report, the existence of hazardous material or any other environmental problems or conditions, which may or may not be present, would be unknown. The system value would be predicated on the assumption that there is no such material or condition on or in the property as a whole that would cause a loss in value. No responsibility would be assumed for any such conditions, or for any expertise or knowledge required to discover them.
- No responsibility would be assumed for the absence or presence of any endangered species which would prevent, restrict, or adversely affect any transfer or improvement of the assets.
- No impact studies and/or special market, or feasibility analysis or studies would be required. The right to alter, amend, revise, or rescind any of the statements, findings, opinion, value estimates, or conclusions would be reserved if any future studies require it.
- Certain data to be used in compiling a draft or final report would be expected to be furnished from sources which are considered reliable; however, we would not guarantee the correctness of such data.
- We would not guarantee or provide and warranty for any projections or financial performance developed as part of the report.
- Possession of a draft or final report, or copy thereof, would not carry with it the right of publication, nor could it be used for any purpose by anyone except for the client without the prior written consent of the client and in any event, only in its entirety and with proper qualification.
- Neither all nor any part of the contents of a draft or final report shall be conveyed to the public through advertising, public relations, news, sales, or other media without the written consent and approval of the author, excepting appropriate Freedom of Information Act requests.

TIME FRAME

Time Frame

The Valuation/Appraisal can be completed in 45 days and the Condition Assessment can be completed in 90 to 120 days. Because some elements of each may occur simultaneously, we expect both tasks will be completed within 120 to 135 days or 4 to 4.5 weeks.

COST

Cost

The following table provides a breakdown of our proposed fee for this project. This table includes the estimated level of effort required for completing each task and blended hourly rates between Raftelis and Kimley-Horn staff.

Task/Activity	Hours	Rate	Total
Initial Meeting with Town	10	$200	$2,000
Project Management	40	$300	$12,000
Condition Assessment	450	$175	$78,750
Fair Market Value Analysis of System	175	$200	$35,000
Preparation of Appraisal and Condition Assessment Reports	75	$150	$11,250
Presentation of reports to the Town	10	$200	$2,000
		Total	**$141,000**

EXAMPLES OF WORK

Examples of Work

We have provided a System Valuation Final Report conducted for Polk County Utilities' Waverly Water and Wastewater System here.

EXCEPTIONS

Exceptions

We request that the Town consider making the following modifications, shown in red below, to the RFP and General Terms and Conditions. We have included our standard contract form here for the Town's review: Raftelis Standard Contract. Please contact us if you have any questions or concerns about these modifications.

4. Information for Offerors

4.10. Hold Harmless Clause

Proposals shall provide for the Contractor holding harmless the Town of Vienna and representatives thereof from all suits, actions, or claims of any kind brought on account of any injuries or damages sustained by any person or property in consequence of any neglect in safeguarding contact work, or on account of any act or omission by the Contractor or its employees, or from any claim or amounts arising or recovered under any law, bylaw, ordinance, regulation, or decree, in each case to the extent caused by Contractor's negligence.

10. Special Terms and Conditions

10.13. Ownership of documents

Any reports, studies, photographs, negatives, or other documents prepared by the Offeror in the performance of its obligations under this contract and intended by the Offeror as a deliverable shall be the ~~exclusive~~ property of the Owner, and all such materials shall be remitted, without restriction, to the Owner by the Offeror upon completion, termination or cancellation of the contract~~.~~; provided, that any use other than as intended and any re-use, modification or alteration of such deliverables shall be at the sole risk of the Town. Offeror shall not use, willingly allow, or cause to have such materials used for any purpose other than performance of the Offeror's obligations under this contract without the prior written consent of the Owner. Nothing in this RFP shall be deemed or construed as a waiver, release, transfer, assignment or divestiture by the Offeror of any of its intellectual property, know-how or trade secrets.

11. Town of Vienna General Terms & Conditions

11.14. Contractor's Performance

B. All goods and/or services delivered and/or rendered shall comply with all applicable federal, state, and local laws, and shall not infringe any valid patent or trademark. The successful bidder/offeror shall indemnify, ~~keep, save~~ defend, and hold the Town, its officers, and employees, harmless from ~~any~~ all liability for infringement by the deliverables and from ~~any and~~ all claims or allegations of infringement by the bidder/offeror or the Town, its officers and employees, ~~arising from, growing~~

~~out of, or~~ in ~~any way involved with~~ each case to the extent that the goods delivered or services rendered by the successful bidder/offeror pursuant to this purchase infringe.

~~C. If suit is brought against the Town, its officers and/or its employees, either independently or jointly with the bidder/offeror, the bidder/offeror shall defend the Town, its officers, and employees, in any such suit at no cost to them. If final judgment is obtained against the Town, its officers, and/or its employees, either independently or jointly with the bidder/offeror, then the bidder/offeror shall pay such judgment, including costs and attorney's fees, if any, and hold the Town, its officers and employees, harmless there from.~~

11.18. Indemnification

The Contractor agrees to indemnify, defend and hold harmless the Town of Vienna, Virginia, its officers, ~~agents,~~ and employees from ~~any claim~~ all claims, damages and actions of any kind or nature, whether at law or in equity, ~~arising from or~~ to the extent caused by the ~~use of any materials, goods, or equipment of any kind or nature furnished by the contractor or any~~ contractor's negligence in providing the services ~~of any kind or nature furnished by the contractor~~ hereunder, provided that such liability is not attributable to the sole negligence of the using department or to failure of the using department to use the materials, goods or equipment in the manner already and permanently described by the contractor on the materials, goods or equipment delivered. The vendor agrees to protect the Town from claims involving infringement of patent or copyrights~~.~~ pursuant to the provisions of Section 11.14(B).

11.41. Ownership of Product/Services

All ~~control~~ work, compilation of notes, work sheets, and all interim and final products and materials intended as a deliverable by the Bidder/Offeror hereunder shall be the sole property of the Town of Vienna.

APPENDIX: RESUMES

Appendix: Resumes

Bart Kreps

PROJECT MANAGER
Executive Vice President

Specialties
- Utility cost-of-service & rate studies
- Bond forecasts & feasibility studies
- Capital financing plan development
- Development & impact fee studies
- Economic feasibility studies
- Regionalization studies
- Alternative project delivery studies

Professional History
- Raftelis: Executive Vice President (2024-present); Vice President (2018-2023); Senior Manager (2014-2017); Manager (2010-2013); Senior Consultant (2005-2009); Staff Consultant (2002-2004)
- Wells Fargo Securities: Fixed Income Analyst (1998-2000)

Education
- Master of Business Administration in Finance & Environmental Management - The University of Tennessee (2002)
- Bachelor of Business Administration in Finance - James Madison University (1998)

Certifications
- Series 54 Municipal Advisor Principal
- Series 50 Municipal Advisor Representative

Professional Memberships
- North Carolina AWWA
- Tennessee/Kentucky AWWA
- Virginia AWWA
- Virginia AWWA/WEF Utility Management Committee: Financial Management Subcommittee lead

PROFILE

Bart has been with Raftelis since 2002, managing a variety of projects to assist water, wastewater, and stormwater utilities in addressing economic and financial issues. Key areas of focus include utility rate, cost-of-service, and financial planning studies; capital financing plan development; bond forecast and feasibility studies; economic impact assessments; and system development fees studies. Bart has extensive experience in financial forecasting and modeling including the application of advanced techniques in risk management. Bart' background is focused predominantly on public finance. He has assisted many utilities in designing optimal capital financing plans and has developed numerous financial feasibility reports and forecasts related to more than $1 billion in revenue bond sales. Bart is the current lead of the Virginia AWWA/WEA Financial Management Subcommittee. He also authored a chapter entitled, "Evaluating Risk in Capital Planning, Financing, and Rate Setting," for the Fourth Edition of the industry guidebook, *Water and Wastewater Finance and Pricing: The Changing Landscape*. Prior to joining Raftelis, Bart served as fixed income analyst for Wells Fargo Securities, in the company's Capital Markets Group.

KEY PROJECT EXPERIENCE

City of Akron (OH): Retail and Wholesale Water Rate Analysis; Affordability Analysis

In 2013, the City of Akron (City) engaged Raftelis to perform a comprehensive cost-of-service, rate design, and financial planning study to assist them in managing the costs related to their combined sewer overflow (CSO) consent decree. Bart is the project manager for this engagement and prepared the financial and rate model used to project the City's operating and capital financing requirements over a 30-year horizon. This engagement included detailed analysis of customer bill impacts arising from various rate structure alternatives and capital financing scenarios. Subsequent to this study, the City opened a dialogue with the EPA to utilize integrated planning in meeting regulatory requirements.

City of Gainesville (GA): Water and Wastewater Cost of Service Analysis

Bart served as the project manager on a project with the City of Gainesville (City). Raftelis was engaged to perform a cost-of-service study and an Outside-City Rate Differential study (the Studies) for the City to examine the equity among the City's water and wastewater rates as well as the cost-justification for the City's outside-city rate differentials. For the cost-of-service study, Bart managed development of a cost-of-service model which first allocates the Water Resource Department's revenue requirements to water and wastewater and then performs a detailed cost-of-service analysis to determine the cost of serving each customer class. For water, Raftelis performed a base extra-capacity cost-of-service analysis in alignment with the AWWA M1 manual and for wastewater, Raftelis performed a cost-of-service analysis relying on guidance from WEF Manual of Practice No. 27. For the Outside-

City Rate Differential study, Raftelis used the utility basis to determine a unit cost for Outside-City customers which is compared to the unit cost of serving Inside-City customers. This meant performing a detailed allocation of operating expenses, fixed assets, and depreciation to Inside- and Outside-City. Bart managed the development of both models and reports.

Following the completion of the Studies, the City re-engaged Raftelis to provide ongoing support services. These services include the following tasks: public outreach and support services in communicating the results of the Studies; miscellaneous affordability analyses to guide the discussion on the affordability of water and sewer service; and additional rate and financial planning analyses.

City of Orangeburg (SC): Utility Financial Planning Study, Capital Improvements Plan

Bart has managed several engagements with the City of Orangeburg Department of Public Utilities (ODPU). Raftelis was engaged by ODPU in 2019 to perform a financial planning study for the electric, natural gas, water, and sewer utilities. Facing a significant Capital Improvements Plan (CIP) over the next ten years for all four utilities, ODPU engaged Raftelis to develop a system-wide cash flow model to model and compare various financing plans to fund the four-system CIP. The financing plans relied on a blend of debt and equity financing mechanisms. Bart managed development of the capital financing plans and presentation of alternatives. Raftelis continues to support ODPU with ongoing miscellaneous rate and financial planning support.

City of Colonial Heights (VA): Water and Wastewater Rate Study

Bart served as project manager on an engagement with the City of Colonial Heights, VA (City). Raftelis was engaged by the City to perform a rate and financial planning study alongside a Condition Assessment, which identified long-term capital reinvestment needs. Raftelis evaluated revenue sufficiency and recommended a rate increase program to recover the necessary revenues to meet existing and projected operating and capital needs. In addition to evaluating revenue sufficiency, Raftelis evaluated the cost recovery equity of the City's existing rates. Working closely with the Client, Bart managed development of a rate model to run the necessary rate and financial planning analyses and presented the results to the City Council.

Webb Creek Utility District (TN): Water and Wastewater Rate Study

Bart has managed several engagements with the Webb Creek Utility District. In order to address a declining annual change in net assets, and avoid being determined financially "distressed" by the State of Tennessee Utility Management Review Board (UMRB), WCUD proactively engaged Raftelis to perform a Rate and Financial Planning Study for a five-year planning period. Raftelis evaluated revenue sufficiency and recommended a rate increase program to recover the necessary revenues to meet state regulatory requirements and existing and projected operating and capital needs. In addition to evaluating revenue sufficiency, Raftelis evaluated the cost recovery equity of WCUD's existing rates.

City of Smyrna (GA): Water, Wastewater, and Stormwater Rate Study

Bart served as project manager for an engagement with the City of Smyrna, Georgia (City). Raftelis was engaged by the City to perform to perform a Financial Planning and Rate study (Study) for water, sewer, and stormwater services. The study also included an assessment of the financial sufficiency of the City's solid waste (or sanitation) services. The objectives of the study were to: evaluate the revenue sufficiency and cost equity of the City's existing rates and make recommendations for improvements; recommend and maintain sufficient revenues in order to meet operating and capital revenue requirements for all three utilities; provide a user-friendly financial planning model designed for continuous use by City staff as a financial planning tool; and conduct a high level financial assessment of the City's solid waste utility. The project concluded with Raftelis presenting the results of the study at a City

Council meeting and delivering a final Utility Financial Planning and Rate study Report and the financial planning and rate model.

Franklin County (OH): Rate, Financial Planning and Organizational Management

Bart served as project manager for an engagement to assist the Franklin County (County) Department of Sanitary Engineering (FCSE) with a utility structure, operations, cost-of-service, and water and wastewater rate analysis. As a result of an expansive geographic service area and limited economies of scale, FCSE is facing a number of challenges in limiting the cost of providing utility services. FCSE is also faced with significant capital investment needs over the next 10 years to ensure continued and reliable services. Raftelis worked with FCSE to develop a 10-year financial plan and recommended rates that are consistent with industry pricing standards and fully support system operations and maintenance, asset repair and replacement, debt service, and debt service coverage requirements. Raftelis also conducted an operational assessment to evaluate the efficiency and effectiveness of the organization, as well as an evaluation of the current strengths and weaknesses of the existing utility structure and alternative options for consideration.

City of Buffalo (NY): Water Cost-of-service Study

Bart provided financial advisory services for a comprehensive cost-of-service and rate study for the Buffalo Water Board (Board). The Board's primary pricing objectives were revenue sufficiency and equitable cost recovery from all customer classes. To achieve these objectives, Bart performed a cost-of-service study and developed two alternatives to the existing three-tiered, declining block rate structure. The results of the cost-of-service study indicated that the discount being realized by large volume customers was not cost-justified and that only a minor portion of consumption was within the middle rate block. Bart recommended a phased approach to bringing the discount for consumption in the third rate block closer to a cost-justified level and phasing out the middle rate block. Both the Board and the City's Common Council unanimously approved the recommendations.

Hallsdale-Powell Utility District (TN): Water and Wastewater Rate Study

Bart has served as project manager on many engagements for the Hallsdale-Powell Utility District (HPUD) in Knoxville, Tennessee. HPUD has faced significant challenges related to capital infrastructure repair and replacement to meet the demands of its growing system. Bart developed a water and wastewater rate model that has served as a financial planning tool for the District over the past 12 years. The model was designed to evaluate a variety of financing assumptions and operating scenarios with the ultimate goal of recommending an appropriate program of rate adjustments to meet HPUD's projected revenue requirements. Most recently, Bart developed the financial forecast and opinion letter for inclusion in HPUD's Series 2006, Series 2008 Revenue Bonds, Series 2018 Revenue Bonds, Series 2019 Revenue Bonds as well as Rural Utility Service loans in both 2009, 2011, and 2014.

City of Rock Hill (SC): Development Fee Study and Wholesale Rate Study

Bart has served as lead consultant on several engagements with the City of Rock Hill (City). Specifically, Bart assisted the City in calculating water, wastewater, stormwater, and fire development impact fees. Additionally, Bart worked with the City to develop a cost-of-service wholesale rate methodology and associated model to serve as a basis for calculating wholesale water and wastewater rates. Based on a previous regionalization study conducted by Raftelis, it was determined that it was economically viable for the City to serve as a regional provider of water and wastewater services to wholesale customers within and around York County, South Carolina.

York County (SC): Wholesale Wheeling Charge Study and Water and Wastewater Rate Study

Bart served as project manager on several studies for York County, South Carolina (County). Initially, the County engaged Raftelis to calculate a wholesale or bulk rate for water purchased by the City of York and Tega Cay from the City of Rock Hill to be delivered through the County transmission system. Bart developed a cost allocation

methodology and associated rate for delivering water through the County system that considered alternative options for the assessment of capital costs. Bart also provided direction related to developing the contractual agreement that will govern these transmission services provided by the County. In 2017, Bart assisted the County with a comprehensive water and wastewater rate and financial planning study. The study involved development of projected revenues and revenue requirements over a 10-year period. Recommendations also included various changes to the County's water and wastewater retail rate structure.

Watauga Regional Water and Sewer Authority (TN): Regionalization Study

Bart served as lead consultant on an engagement with the Watauga Regional Water and Sewer Authority (WRRWA). The WRRWA commissioned Raftelis to conduct a study to evaluate the economic impact of designing, engineering, and constructing a regional water treatment facility and associated transmission system. Bart developed an economic feasibility model that evaluated both the unit cost impact and average customer bill impact of two regional plan alternatives. Bart, in association with a national engineering firm, assessed both the quantitative and qualitative impacts of both alternatives, which ultimately lead to the selection and recommendation of a preferred regional plant alternative.

White House Utility District (TN): Water and Wastewater Rate Study (Retail and Wholesale)

Bart served as project manager on many engagements for the White House Utility District, Tennessee (WHUD). Bart has conducted numerous water and wastewater rate and financial planning studies consisting of defining and evaluating the existing and projected cost basis for utility operations, allocating costs based on cost-of-service principles, and recommending updated water and wastewater fees for retail customers. Bart also assisted WHUD with an evaluation of the appropriateness of its existing rate methodology for charging water service on a wholesale basis. Bart participated in discussions with WHUD's wholesale water customer to re-negotiate a rate that was both reasonable and equitable.

City of Johnson City (TN): Water and Wastewater Rate Study (Retail and Wholesale) and Rate Model Updates

Bart served as lead consultant for the City of Johnson City (City) in developing a 10-year financial plan and program of water and wastewater rate adjustments to meet the anticipated requirements of a substantial wastewater capital improvements plan. The City had not adjusted its water or wastewater rates in approximately 10 years when it engaged Raftelis in 2003. Previously, the City had employed a short-term (one-year) planning process which implemented rate adjustments in reaction to annual capital and budget requirements. As part of our assistance, Raftelis recommended modifications to the City's water and wastewater rate structures to eliminate the minimum usage allowances and introduce base charges for both water and wastewater. Additionally, Raftelis developed a plan to gradually eliminate the declining block wastewater volume rates by consolidating the declining block rates into one uniform volume wastewater rate over a 10-year period. The elimination of the declining blocks was recommended to provide more consistency with current industry rate-setting practices as the recent decline in the City's manufacturing and industrial customer base no longer warranted a rate structure that provided incentives for large industrial wastewater users.

The elimination of the declining blocks also allowed the City to phase out the current subsidy provided from the water utility to the wastewater utility and move towards a more financially self-sufficient wastewater utility. Other recommendations involved implementation of a consistent outside-city differential for all rates and charges assessed to outside-city water and wastewater customers, and developing a program of rates and charges that would achieve a target level of debt service coverage of 1.20x in order to protect the utility's financial position and access to debt markets. Raftelis also worked with the City to determine the appropriate costs for providing potable water to wholesale customers under the Utility Approach to rate-setting and provided sample calculations of wholesale water rates for two potential types of wholesale customer contracts. These customer types included a customer who would

not require City water services on a consistent basis and a customer who would require City water services as its primary source of water and would agree to "buy-in" to a portion of the City's available capacity.

Raftelis has been engaged by the City in 2007, 2008, 2009, 2014, and 2017 to update the rate and financial planning model.

Paulding County (GA): Capital Financing Plan Development and Rate Study

Paulding County (County) is located in northwest Georgia with an estimated population of 148,232. The County is part of the Atlanta Metropolitan Area. Water service is provided to approximately 43,000 customers through a network of distribution infrastructure. Potable water is currently purchased on a wholesale basis from the Cobb County-Marietta Water Authority (CCMWA). Bart served as project manager assisting the County with a financial and economic impact analysis of the Richland Creek Water Supply Project, which will supplement the current wholesale water purchases and eventually supply up to 35 million gallons per day (MGD) of the County's long-term (50-year) need of 53 MGD supporting a population of 500,000. Raftelis was engaged by the County to conduct a detailed examination and evaluation of the Richland Creek Water Supply Project to determine the most advantageous strategy for financing and delivering the project. The major components of the analysis included the determination of a capital financing plan and development of an economic forecast model. The economic forecast model included a long-term projection of revenue requirements and development of quantitative evaluation metrics for various capital planning alternatives. Subsequent to this study, Bart assisted the County with development of a comprehensive rate and financial planning study including a projection of rates, revenues, and revenue requirements over a 10-year planning period. Bart also prepared a financial feasibility report for inclusion in the Official Statement of the County's Series 2016 revenue bonds.

Laurens County Water and Sewer Commission (SC): Water and Wastewater Rate Study

Bart served as lead consultant on developing a five-year water and wastewater financial planning and rate model for the Laurens County Water and Sewer Commission, South Carolina (LCWSC). The LCWSC provides water and sewer service to retail residential and commercial customers located in unincorporated areas of Laurens County, and four adjacent areas located in Greenville County. The LCWSC was concerned that existing rate structures did not represent the appropriate cost-of-service. As a result, Raftelis was retained to evaluate the water and wastewater rate structures and identify alternative rate structures that could provide a more appropriate allocation of costs among the different user classes. After identifying alternative water and wastewater rate structures, Raftelis developed a five-year financial planning and rate model with the flexibility to calculate rates under the existing and alternative rate structures and assess the rate impacts of changing rate structures. Based on the potential for significant rate impacts on certain water customers, Raftelis recommended staying with the existing water rate structure with minor modifications to provide more the appropriate recovery of costs from commercial customers. For wastewater, the potential rate impacts associated the alternative rate structure were less significant, and an alternative rate structure was recommended.

Northeast Ohio Regional Sewer District (OH): Wastewater Rate Analysis and Stormwater Rate Study

Bart served as project manager in the development of a comprehensive financial plan for the five-year period 2007-2011 and 2012-2016, as well as various other engagements for the Northeast Ohio Regional Sewer (District) since 2004. The District was facing a $3.2 billion capital program, and it was critical to develop an optimal financing plan that balanced revenue requirements and customer impacts. The financial plan included projections of customers, water usage and revenues under the existing rates, projections of operating and maintenance expense, debt service on existing bonds and additional bonds necessary to fund the capital improvement program, and reserve fund deposits. In addition, Raftelis recommended a rate adjustment program over the five year study period to meet the

projected revenue requirements and maintain the District's financial sustainability. A user-friendly computer model was also developed for use by District staff to analyze different planning scenarios.

Town of Oak Island (NC): Financial Feasibility Study

Bart served as project manager on several engagements with the Town of Oak Island (Town) to provide financial feasibility consulting services related to its Series 2008 Utility System Revenue Bonds (Series 2008 Bonds), the Series 2009 Utility System Revenue Bonds (Series 2009 Bonds), and the Series 2011 Utility System Revenue Bonds (Series 2011 Bonds). The bonds were issued to fund the design and construction of a wastewater collection system to provide centralized service to the remaining 85% of the Town's residents that receive wastewater service from septic systems. The wastewater collection system includes approximately 85 miles of vacuum collector sewers, nine vacuum stations, one main pump station, and a force main transmission line to deliver wastewater to the West Brunswick Regional Wastewater Treatment Facility. The collection system was constructed in two phases at a total cost of $150 million.

In order to assist the Town in securing the necessary funds for its capital initiatives, Raftelis prepared a financial feasibility report that was included in the Official Statement for the Series 2008 Bonds, the Series 2009 Bonds, and the Series 2011 Bonds. The feasibility reports included a five-year projection of revenues, expenses, debt service and debt service coverage, along with specific documentation of significant forecast assumptions. Raftelis continues to provide the Town with ongoing rate and financial planning assistance.

City of Oxford (NC): Rate Study and Model Update

In July 2000, the City of Oxford (City) retained Raftelis to develop a comprehensive financial planning and rate model to evaluate revenue sufficiency for both the water and wastewater utilities. The City was anticipating a significant increase in growth due to its proximity to the Raleigh-Durham area. The growth was expected to be both residential and industrial customers. Due to the expected growth in the area and the need for renewal and replacement of assets, the City anticipated significant financing needs to undertake its Capital Improvement Program. In order to generate the revenues needed to address projected increases in operating costs and debt service costs, the City decided to review and update their previous water and wastewater utility rate structure. The financial planning model developed by Raftelis incorporated the City's intensive capital improvement plan and was structured so that the City could use the model to evaluate revenue impacts under various scenarios. Since July 2000, Raftelis has updated the model annually for the City of Oxford to ensure that the City has the revenue sufficiency needed to continue to perform its needed capital improvements.

City of Peoria (AZ): Water and Wastewater Rate and Impact Fee Study

The City of Peoria (City) has experienced fast-paced growth and heavy development pressure as the City's population has more than doubled since 1990. As a result, demand for water and wastewater services has also increased at a rapid pace. Concurrently, the State of Arizona (State) enacted the Groundwater Management Act and the Assured Water Supply rules to limit the use of groundwater and to encourage the use of alternative water supply sources. As a result, the State mandated that the City reduce its reliance on mined groundwater and increase its use of renewable water resources. To comply with these regulatory requirements, the City developed an aggressive capital plan to reduce its former 100% use of groundwater through a combination of its existing water supply sources, maximization of reclaimed water for non-potable use, and a continued commitment to water resource conservation.

To effectively address these growth and regulatory related issues and concerns, the City sought assistance in reviewing and updating its existing water and wastewater rate structure and developing a 10-year financing plan for its extensive capital requirements. In February 1998, the City engaged Raftelis to conduct a comprehensive water

and wastewater rate and financial planning study, which incorporated a water and wastewater utility rate study, an update of its water and wastewater development fees, the development of a water resource fee, and the development of an appropriate financial plan and bond feasibility forecast. Following these initial engagements, Raftelis has assisted the City in updating its water and wastewater rates, utility financial plan, and utility development fees on a biennial basis (2000, 2002, 2004 and 2006). As part of these updates, the City implemented a uniform service area approach to determining its development fees.

In 2003, Raftelis further assisted the City in determining utility development fees for a separate service area located west of the Aqua Fria River. Although the City assesses uniform water and wastewater development fees to customers in all other areas of its water and wastewater system, proposed development in this independent service area requires significant investments in capital improvements and certain portions of the required infrastructure will be financed through a Community Facilities District. Since these fees will be separate and unique from the fees assessed to other customers within the City's current service area, the City requested that Raftelis calculate the fees based upon the specific costs for the infrastructure they are intended to recover.

City of Phoenix (AZ): Organizational Management Study

Raftelis has performed numerous projects for the City of Phoenix (City) over the past 10 years. The projects have included rate analyses, bond feasibility analyses, calculating an environmental fee, and design/build/operate procurement. Raftelis has assisted the City with four debt issuances. In 2001, Raftelis assisted with the preparation of a bond feasibility analysis for a $220,000,000 Junior Lien Water System Revenue Bond issuance. In 2003, Raftelis assisted with the preparation of a bond feasibility analysis for $130,260,000 in Senior Lien Wastewater System Variable Rate Demand Revenue Refunding Bonds. In 2003, Raftelis assisted the City by performing a parity test and preparing a parity test certificate for $11,325,000 in Junior Lien Water System Revenue Refunding Bonds, and, in 2004, Raftelis performed a parity test and issued a parity test certificate for $180,000,000 in Junior Lien Wastewater System Revenue Bonds. In 2005, Raftelis prepared a bond feasibility analysis for a $600,000,000 in Junior Lien Water System Revenue Refunding Bonds. For this engagement, Raftelis reviewed the financial forecast prepared by the City; reviewed the report prepared by the City for inclusion in the bond official statement; prepared an opinion letter related to the reasonableness of the City's financial forecast; and performed a parity test and issued a parity test certificate. The scope of work for this project also included a benchmarking study that compared the City's performance on a variety of financial performance metrics with the performance of other similar utilities. Data for the benchmarking study was derived from information collected as part of Raftelis' biennial rate survey and from a targeted survey of the City's peer utilities that was created specifically for this project.

Pima County (AZ): Wastewater Planning and Rate Study and CIP Analysis

Bart served as project manager or lead consultant on multiple engagements for Pima County (County). In 2005, Raftelis was engaged by the County to provide strategic financial and analytical support related to the long-term revenue and rate implications associated with the investment of approximately $1.4 billion in its wastewater system over the next 15 years. The County is faced with an extraordinary challenging of improving a significant portion of its wastewater system in order to comply with more stringent effluent quality standards imposed by State and Federal regulators and to meet the needs of a growing customer base. Raftelis, in association with Greeley & Hansen, developed an economic planning model to assess, at a high level, the long-term rate and customer impacts of various capital investment strategies and system configurations designed to adequately address regulatory requirements and provide sufficient capacity to serve both existing and projected demand. Raftelis also developed a financing plan for the capital program that considered the use of traditional public financing instruments, and the use of non-traditional, alternative financing options, both public and private, that could provide a more cost-effective strategy for funding certain components of the capital program.

Based on the results of the capital planning analysis, Raftelis was retained by the County, in two separate engagements, to develop its fiscal year (FY) 2008 Financial Plan and conduct a more detailed economic analysis of alternative project delivery options. The development of the FY 2008 Financial Plan included a comprehensive rate study and creation of a Rate and Financial Planning Model (Rate Model), to be updated on an annual basis, covering the Department's operations and maintenance and capital improvement financing over a 10-year forecast period. The Financial Plan was designed to serve as road-map for funding capital improvements and basis for developing rates and charges that are fair and equitable. In 2008, Raftelis was retained by the County to update its FY 2009 Financial Plan.

Both the FY 2008 and FY 2009 Financial Plans assumed the use of more traditional public financing instruments, such as revenue bonds and State Revolving Fund (SRF) loans, to financing the proposed capital improvements, and assumed a more traditional Design-Bid-Build (DBB) project delivery model. However, the County was interested in understanding both the economic and non-economic implications of alternative financing options and approaches to project delivery, including Design-Build (DB), Design-Build-Operate (DBO) and Design-Build-Operate-Finance (DBFO) delivery models. One of the largest projects in the capital program was the construction of a new 32 million gallon per day (MGD) water reclamation facility designed to meet all new effluent discharge requirements. It was determined that this project, in particular, should be evaluated in terms of the potential risks and benefits of alternative project delivery options, to determine which option under consideration could provide the least risk and lowest probable cost.

To facilitate the quantitative aspects of the alternative project delivery analysis, Raftelis develop a Multiple Criteria Risk Model (Risk Model) to project operating and capital costs and calculate Net Present Value (NPV) life cycle costs for design and construction of the new water reclamation facility under a base case (DBB), DB, DBO, and DBFO project delivery alternatives. Raftelis participated in several workshops with County staff to identify specific variables and risk parameters that could be quantified. These variables and risk parameters were incorporated into the Risk Model, which used Monte Carlo simulations over 5,000 trials to project risk adjusted NPV life cycle costs for each project delivery alternative. Specific variables considered included construction schedule, tax-exempt interest rates, private interest rates, private cost of equity, operating cost inflation, capital cost inflation and discount rate, among numerous others. The results of the quantitative analysis identified DBO as the project delivery alternative with the lowest risk and NPV life cycle cost.

Other services provided to the County by Raftelis include the valuation of a small water reclamation facility serving a community in the County's outlying service area. The study was conducted to support the County in negotiations with the community, as it was evaluating the implications of seeking ownership of this facility. Raftelis is currently conducting an analysis of the County's methodology used to assess connection fees.

City of Durham (NC): Water Conservation Rate Study

Bart served as project manager on numerous engagements with the City of Durham (City) related to water and wastewater finance and pricing. In 2007, he assisted the City with a cost-of-service water and wastewater rate study focusing primarily on water conservation pricing. Due to an extreme drought in 2007, the City was faced with an unprecedented challenge related to preserving its water supply, and the addition of a pricing mechanism within its water rate structure became an immediate priority. Bart worked closely with the City to develop defensible, cost-justified tiered water rates that included pricing incentives to promote the efficient use of water resources. Bart developed a comprehensive cost-of-service based rate model that is currently used by the City as a financial planning tool and prepared financial forecast and opinion letter related to the City's $60.0 million 2011 Utility Revenue and Revenue Refunding Bonds. Bart also provided valuation services to the City related to the potential acquisition of Durham County's wastewater treatment facility. Most recently, Bart developed a recapitalized value of both the water and wastewater system to support a calculation of the City's capacity fees.

City of Lakewood (OH): Water and Wastewater Rate Study

Bart served as project manager on a comprehensive water and sewer rate study for the City of Lakewood (City). The City was facing multiple challenges in developing its financial plan including, for example, declining consumption, rising costs, and significant capital needs related to its Long-Term Combined Sewer Overflow Control (LTCSO) Plan. Bart assisted the City in evaluating the revenue sufficiency and cost equity of its rate structure for providing water and sewer services. The focus of the analysis involved the development of a financial plan that fully supported system operations and maintenance, asset reinvestment, debt service, and debt service coverage requirements. Bart developed recommendations that provided a projection of utility rate adjustments necessary to meet forecasted revenue requirements over a five-year planning period. For planning purposes, a long-term, 20-year forecast was also developed to assess, in particular, the potential impacts of the City LTCSO Plan, with specific emphasis on measuring rate affordability.

Bowling Green Municipal Utilities (KY): Water and Wastewater Rate Study

Bart served as project manager on a water and wastewater rate and cost-of-service study for the Bowling Green Municipal Utilities (BGMU). BGMU was seeking a comprehensive analysis of the existing and projected cost basis of utility operations and an evaluation of the appropriateness of its existing rate structure for providing water and sewer services. BGMU is facing significant capital expenditures related to asset repair and replacement and system improvements to address aging infrastructure and to meet regulatory requirements. Bart developed a rate and financial planning model to provide a forecast of rates, revenues, expenses, debt service, debt service coverage, and reserves over a 5-year forecast period. The rate model included specific metrics for tracking reserves to increase liquidity, mitigate operational risk, and enhance the credit profile of the utility.

City of Cookeville (TN): Water and Wastewater Rate Study, Capacity Fee, and Wholesale Rate Study

Bart served as project manager on a water and wastewater rate and financial planning study for the City of Cookeville. The study was designed to address a number of financial and pricing objectives including, in particular, recommendations for cost justified water and wastewater rates that fully support system operations and maintenance, asset repair and replacement, debt service, and debt service coverage requirements. Additional recommendations were also provided related to water and wastewater capacity charges that support growth related projects to ensure that new customers are making an equitable contribution toward the capital investment in the capacity to accommodate growth. Bart also developed a rate and financial planning model to forecast annual revenue requirements and rates over a five-year planning period.

City of Newport News (VA): Bond Feasibility Study

Bart served as lead consultant on a financial feasibility evaluation for the City of Newport News Department of Public Utilities, Waterworks Division (Waterworks) related to the proposed issuance of revenue bonds in 2007. Waterworks, in partnership with other Virginia Peninsula localities, was seeking capital market funds to develop and implement a long-term solution to the area's water supply needs. The most significant project in the capital plan was the development of a new 12.0 billion gallon off stream reservoir and pumping station on the Mattaponi River in King William County, Virginia. Our analysis included a forecast of revenues, expenses, and debt service over a five-year period, to ensure compliance with all bond covenants and debt service coverage requirements.

Raftelis also assisted Waterworks with defining appropriate and effective financial policies to mitigate operational risk, ensure adequate reserves, and improve the credit profile of the utility. Recommendations were provided for specific categories of reserves including rate stabilization funds, operating reserves and capital reserves, among others. Specific metrics were identified that defined target fund levels that balanced risk mitigation and funding requirements with the potential impact on rates and charges. Raftelis is currently assisting the City with various financial and rate setting services on an on-call basis.

City of Dover (NH): Stormwater Feasibility Analysis

Bart provided assistance to the City of Dover, New Hampshire (City), to assess the implications of alternative approaches for addressing the City's stormwater management needs. Bart managed multiple tasks involving the financial, rate, and billing implications of establishing a separate enterprise fund for a stormwater utility. The City, which currently funds stormwater costs through its General Fund, was interested in options for developing a user-based system of stormwater charges to provide a more reliable source of revenue. Bart identified and evaluated alternative approaches for designing stormwater rates including, in particular, fee structures based on impervious area only, impervious area plus gross area, and intensity of development. The impervious area only-based charge was identified as the most equitable methodology assigning responsibility for stormwater costs. study recommendations were approved by a Steering Committee and was presented to City Council in January of 2011.

City of Richmond (VA): Water, Wastewater, Gas, Electric, and Stormwater Rate and Financial Planning and Cost of Service Studies

In 2007, Bart managed the development of a comprehensive rate and financial planning model (Model) for the City of Richmond Department of Public Utilities (DPU). The Model incorporates all utility systems: water, wastewater, natural gas, street lighting, and stormwater. DPU currently uses the Model to set rates, determine optimal capital financing scenarios, and report on utility system financial conditions. The financial planning output from includes a projection of units of service (customer accounts and usage), operating expenses and capital expenditures, as well as a projection of net revenues available for debt service and debt service coverage. The Model provides the flexibility to evaluate the impacts of various capital funding sources including revenue bonds, general obligation bonds, Virginia Resource Authority (VRA) loans, and grants.

In 2010, Bart managed a comprehensive cost-of-service study for the DPU's natural gas, water, wastewater, stormwater, and natural gas utilities. The results of the study included numerous recommended rate structure changes to better align DPU's rates and charge with its pricing objectives. A comprehensive affordability analysis was also conducted resulting in the recommendation and implementation of several customer assistance programs. Bart currently provides the DPU with various rate, financial, and management services on an ongoing basis.

City of Philadelphia (PA): Debt Issuance Support

Bart has assisted the City of Philadelphia's (City) water and wastewater utilities (Philadelphia Water) with debt issuance support services. These services included the preparation of a financial feasibility report for the City's Series 2016 Revenue Bonds and Bring Down Letters for the City's Series 2017A and Series 2017B Revenue Bonds. Raftelis is currently assisting Philadelphia Water with implementation of its tiered income customer assistance program.

City of Alcoa (TN): Wholesale Water Rate Analysis

Bart has served as manager on multiple engagements with the City of Alcoa (City). In 2008, Raftelis developed a wholesale water exchange rate for an emergency connection between the City and the City of Maryville, Tennessee, as well as a wholesale water rate for the service provided to the Tuckaleechee Utility District. In 2010, Raftelis was engaged to conduct a comprehensive rate and financial planning study covering both the water and wastewater utilities. The City was seeking financing from the Tennessee Drinking Water Revolving Loan Program to fund a new finished water storage facility. The State requested that the City conduct a rate study prior to awarding the funding source, to ensure the City's rates were sufficient to maintain a positive change in net assets, which is a requirement of the Tennessee Utility Management Review Board.

PROJECT LIST

- City of Alcoa (TN) - Wholesale water rate analysis

- City of Akron (OH) – Retail and wholesale water rate analysis; affordability analysis
- Arlington County (VA) – Water and wastewater rate and cost of service study
- Berkeley County (SC) - Development impact fee study, industrial water and sewer rate study, and industrial rate update
- Bowling Green (KY) - Water and wastewater rate study
- City of Buffalo (NY) - Water cost-of-service study
- Borough of Carlisle (PA) - Water and wastewater rate study
- Bucks County (PA) – Wholesale rate analysis
- Chester Wastewater Recover (SC) - Wastewater rate and financial planning
- Chester Metropolitan District (SC) Water rate and financial planning
- City of Colonial Heights (VA) – Water and wastewater rate study
- City of Concord (NC) - Wholesale wheeling charge study
- City of Clarksville (TN) – water, wastewater and natural gas rate study
- City of Cookeville (TN) - Water and wastewater rate study, capacity fee, and wholesale rate study
- Clark County (OH) - Water and wastewater rate study
- D.C. Water (DC) - Water and wastewater cost-of-service study
- District of Sooke (British Columbia) - Contract operations review
- City of Dover (NH) – Stormwater feasibility analysis
- Durham County (NC) - Bond feasibility study and rate model update
- City of Durham (NC) - Water conservation rate study
- Erie County (NY) - Wastewater utility consolidation study
- City of Florence (SC) - Capital planning analysis
- Franklin County (OH) - Rate, financial planning and organizational management
- City of Gainesville (GA) – Water and wastewater cost of service analysis
- Gloucester County (VA) - Water and wastewater organizational assessment
- Greenville Water (SC) – Rate and financial planning
- Hallsdale-Powell Utility District (TN) - Water and wastewater rate study
- Hardin County Water District #1 (KY) - Water and wastewater rate study and PSC filing
- Hendersonville Utility District (TN) – Water and wastewater rate study
- City of Greensboro (NC) – Water and wastewater financial planning and regionalization study
- City of Herndon (VA) – Water and wastewater rate and capacity fee study
- City of Hopewell (VA) - Wholesale cost-of-service study
- City of Johnson City (TN) - Water and wastewater rate study (retail and wholesale) and rate model updates
- City of Kingsport (TN) – Water and wastewater rate study
- City of Kingston (TN) – Water and wastewater rate study
- City of Kinston (NC) - Water and wastewater rate study
- City of Lakewood (OH) - Water and wastewater rate study
- Laurens County (SC) - Water and wastewater rate study
- City of Manassas (VA) - Water and wastewater valuation
- City of Maryville (TN) - Wholesale water rate analysis
- City of Myrtle Beach (SC) - Water and wastewater rate study
- City of Newport News (VA) - Bond feasibility study
- Northeast Ohio Sewer District (OH) - Wastewater rate analysis and stormwater rate study
- City of Oxford (NC) - Rate study and model update
- City of Peoria (AZ) - Water and wastewater rate and impact fee study
- City of Philadelphia - Debt issuance support
- City of Phoenix (AZ) - Organizational management study
- City of Sevierville (TN) – Water and wastewater rate study

- Paulding County (GA) – Capital financing plan development and rate study
- Pima County (AZ) - Wastewater planning and rate study and cip analysis
- City of Richmond (VA) - Water, wastewater, gas, electric, and stormwater rate and financial planning model
- Rivanna Water and Sewer Authority (VA) - Wholesale rate review
- City of Rock Hill (SC) - Development fee study and wholesale rate study
- San Diego County Water Authority (CA) - Wholesale wheeling charge study
- Sewanee Utility District (TN) - Water and wastewater rate study and developer charge study
- City of Smyrna (GA) - Water, wastewater, and stormwater rate study
- Saint Lucia Water and Sewerage Company – Water and sewer rate filing
- Stanly County (NC) - Water and wastewater rate study
- Town of Fort Lawn (NC) – Wastewater rate review
- Town of Nags Head (NC) – Water capacity fee study
- Town of Sahuarita (AZ) - Wastewater rate study
- United States Navy - Privatization procurement
- Washington County Service Authority (VA) – Rate and financial planning study
- Watauga River Regional Water Authority (TN) - Regionalization study
- Water and Sewer Authority of Cabarrus County (NC) - Water consolidation study
- Webb Creek Utility District (TN) - Water and wastewater rate study
- West Wilson Utility District (TN) – Water and wastewater rate study
- Western Intake Partnership (NC) – Regional Economic and Governance Study
- White House Utility District (TN) - Water and wastewater rate study (retail and wholesale)
- City of Wilmington (DE) - Litigation support
- York County (SC) - Wholesale wheeling charge study and water and wastewater rate study

PUBLICATIONS

- "Municipal Advisor Registration: What You Need to Know," AWWA Journal, 2013
- "The Cost of Borrowing: Understanding Credit Ratings," AWWA Journal, 2015
- "Evaluating Risk in Capital Planning, Financing, and Rate Setting," Water and Wastewater Finance and Pricing: The Changing Landscape, Fourth Edition

PRESENTATIONS

- "Water and Wastewater Rate Survey Results and Industry Trends," Tennessee/Kentucky AWWA Annual Conference, 2006
- "Water and Wastewater Rate Survey Results and Industry Trends," Virginia AWWA Annual Conference, 2006
- "Financing and Prioritizing Your Utility's Capital Needs," Tennessee/Kentucky AWWA Annual Conference, 2008
- "Are Your Rates Affordability?" WEF Webcast - Managing Rates and Charges in Challenging Economic Times, 2009
- "Pima County Regional Optimization Financial Plan," WESTCAS Fall Conference, 2009
- "Securing Financing in Challenging Economic Times - Case study: Town of Oak Island, NC," North Carolina AWWA Annual Conference, 2009
- "Quantify Risk in Project Procurement," Utility Management Conference, 2010
- "Creative Financial Strategies for Virginia Utilities," AWWA/WEF Webcast, 2011
- "Rates 101: Basic Fundamentals of Financial Planning and Rate Setting," Virginia Rural Water Association Annual Conference, 2012
- "Strategies for Financing a $3.0 Billion Long-Term CSO Control Plan," Utility Management Conference, 2012
- "Fixed vs. Variable Charges: Finding a Balance," VA AWWA | WEA Webcast, 2013

- "Fixed vs. Variable Charges: Finding a Balance," VA AWWA | WEF Webcast, 2013
- "Addressing Affordability Challenges with Data Driven Management," Water Finance Conference, 2015
- "Customer Data Mining for Gold: Affordability and Integrated Planning," Utility Management Conference, 2016
- "The City of Richmond: Integration, Innovation, and Affordability," NACWA Winter Conference, 2017
- "Infrastructure: So Much to Do and Not Enough Money to Do It With," TN/KY Utility Management Conference, 2017
- "A New Water Rate Structure for DC Water Prioritizing Infrastructure and Affordability," Water Finance Conference, 2018
- "Principles of Rate Setting and Industry Trends," TN/KY Utility Management Conference, 2019
- "Water and Wastewater Rates 101," Georgia GFOA Fall Conference, 2020
- "Affordability Challenges: Assessing Magnitude and Implementing Solutions," Virginia Water JAM, 2021
- "Rate Setting, Strategic Planning, and Stakeholder Engagement in Southwestern, VA," Virginia Water JAM, 2022
- "Water Sector Capital Financing Alternatives" Utility Management Committee Webinar, 2023

Steven McDonald CVA

APPRAISER

Chief Economist/Valuation Services

Specialties
- Business Valuation and Appraisal
- Economic Forecasting
- Economic Impact Analysis
- Cost-Benefit Analysis
- Fiscal Impact Analysis

Professional History
- Raftelis: Chief Economist/Valuation Services (2021-present)
- GAI Consultants (2012-2021)
- The Disney Company (2008-2012)
- RERC (2004–2008)
- Burton & Associates (2002–2004)
- CHEP International (1999–2002)
- The Disney Company (1996–1999)
- Fishkind & Associates (1990–1996)

Education
- Bachelor of Arts in Public Policy – University of Central Florida (1988)
- Master of Arts in Applied Economics
- – University of Central Florida (1990)

Certifications
- Certified Valuation Analyst - CVA©#20639

Professional Affiliations
- National Association of Certified Valuators and Analysts (NACVA)
- Board Member, NACVA Ethics Oversight Board (EOB)
- Past Chairman and member of NACVA EOB
- President, NACVA Florida North Chapter
- American Society of Appraisers, Member
- Webster University, Adjunct Instructor

PROFILE

Steven is an Economist, Researcher, and Strategist with 31 years of experience, almost equally divided between consulting assignments and corporate roles. He specializes in quantitative and qualitative research and analysis to include Business Valuation and Appraisal (CVA©#20639), economic analyses and econometrics, cost-benefit analyses, and short- and long-term financial analyses. Over this time, Steven has developed a high degree of technical expertise balanced with strategic management experience from high-profile, innovative projects, both domestically and internationally, focused on economic and financial issues across a broad range of industries. Altogether, corporate roles and consulting assignments, along with managing work efforts across no less than four business cycles, have provided Steven the opportunity to develop strong expertise in the field of economics and understanding enterprise business value.

Steven strives to maintain active participation as a member of the NACVA and is currently the President of the NACVA Florida North Chapter. In addition, he has served on the NACVA Ethics Oversight Board for three years, one of those years as Chairman. Steven also has more than ten years of experience in Economic Concepts and Managerial Economics.

KEY PROJECT EXPERIENCE

Business Valuation and Appraisal

Business Valuation services have been provided for purposes of insurance, litigation, and purchase and sale transactions (M&A), generally resulting in a detailed, summary, or oral appraisal or value reports. A Business Valuation, as defined by Uniform Standards of Professional Appraisal Practice (USPAP) Standard 9, provides a specific value based on purpose and use of the appraisal or calculation. All valuation services provided conform with the Professional Standards of the NACVA. Professional experience with providing Business Valuation services has included the following:

- Wisconsin IOU (Natural Gas), 2024 – Asset Transaction
- Waste Disposal Company (Waste-to-Energy), 2024 – Asset Transaction
- Florida IOU (Water/Sewer), 2024 – Asset Transfer
- South Carolina Public Utility (Water/Sewer), 2024 – Asset Transaction
- Alabama Water Rights, 2024 – Lender Collateral
- Florida Public Utility (Water), 2024 – Asset Transaction
- Tennessee Public Utility (Water), 2023 – Asset Transaction
- Florida Public Utility (Waste-to-Energy), 2023 – Asset Transaction
- Florida IOU (Water), 2023 – Asset Transaction
- Florida Public Utility (Propane), 2023 – Asset Transaction
- Tennessee Public Utility (Water), 2023 – Asset Transaction

- California Public Utility (Water), 2023 – Asset Transaction
- California Public Utility (Solid Wate), 2023 – Asset Transaction
- North Carolina Public Utility (Water), 2023 – Asset Transaction
- Texas IOU (Water), 2023 – Asset Transaction
- South Carolina Public Utility (Electric), 2023 – Asset Transaction
- South Carolina Public Utility (Water), 2023 – Asset Transaction
- South Carolina Public Utility (Sewer), 2023 – Asset Transaction
- Texas IOU (Water), 2023 – Asset Transaction
- North Carolina IOU (Sewer), 2022 – Asset Transaction
- North Carolina IOU (Sewer), 2022 – Asset Transaction
- Florida Public Utility (Service Area Rights), 2022 – Asset Transaction
- Florida IOU (Water), 2022 – Asset Transaction
- Arizona (7 systems) Utility, 2022 (Water) – Asset Transaction
- South Carolina Utility, 2022 (Water) – Asset Transaction
- Virginia Public Utility, 2022 (Water and Sewer) – Divestiture
- South Carolina Public Utility, 2022 (Water) – Asset Transaction
- North Carolina Public Utility, 2022 (Water) – Asset Transaction
- Ohio Public Utility, 2022 (Water) – Asset Transaction
- South Carolina Public Utility, 2021 (Wastewater) – Asset Transaction
- Florida Public Utility, 2021 (Water) – Asset Transaction
- Florida Public Utility, 2021 (Natural Gas) – Asset Transaction
- Pennsylvania Public Utility, 2021 (Sewer) – Asset Transaction
- Texas IOU (Water), 2021 – Asset Transaction
- Florida Public Utility, 2021 (Service Area) – Litigation
- Pennsylvania Public Utility, 2021 (Sewer) – IOU Acquisition
- California Water Market, 2021 (Credits) – Asset Transaction
- Pennsylvania Public Utility, 2021 (Sewer) – IOU Acquisition
- Florida Public Utility, 2020 (Water) – Asset Transaction
- Florida Public Utility, 2020 (Water) – Foreclosure
- Florida Public Utility, 2019 (Water and Wastewater) –Business Damages
- Florida Public Utility, 2019 (Water and Wastewater) –Acquisition
- Florida Public Utility, 2018 (Chilled Water) – Acquisition
- California Private Discharge Capacity, 2018 (Wastewater) –Acquisition
- Tennessee Public Utility, 2018 (Electric) – Acquisition
- Florida IOU, 2017 (Water-Sewer) – Acquisition
- Florida IOU, 2017 (Electric) – Tangible Property Tax
- Ohio IOU, 2017 (Water) – Financing
- Florida Public Utility, 2017 (Water Storage) – Acquisition
- South Carolina Public Utility, 2016 (Water) – Acquisition
- Ohio Public Utility, 2016 (Water-Sewer) – Acquisition
- Mississippi Certificate of Public Conveyance and Necessity, 2016 (Water) – Acquisition
- Florida IOU, 2016 (Electric) – Tangible Property Tax
- Florida IOU, 2015 (Electric) – Acquisition

Revenue Study and Public Bond Annual Reports

Multiple revenue feasibility studies and economic analyses supporting public and private debt financing have been provided for a wide range of existing and new developments. In total, this experience is directly associated with more than $2 billion in public financial debt proceeds used to support various infrastructure investments in multiple states. Recent experience with providing Bond Revenue Reports has included the following:

- Michigan (Confidential) TIF Bond Revenue Study
- Provo Utah (Confidential) TIF Bond Revenue Study
- Missouri (Confidential) CID (Sales Tax), TID (Sales Tax), and TIF Bond Revenue Study
- Alabama (Confidential) Improvement District Assessment Bond Revenue Study
- Allentown (PA) ANIZDA Revenue Study
- Muskegon Michigan Property Tax bond Revenue Study
- Mattoon Illinois Retail Bond Revenue Study
- Prasada Retail Bond Revenue Study
- FGUA – Lehigh Acres Bond Indenture Report
- FGUA – North Fort Myers Bond Indenture Report
- Lincoln Nebraska Annual Report
- Bellmont Promenade Bond Revenue Study
- Outlets at Sparks Bond Revenue Study
- Hutto Bond Revenue Study
- Southpointe Pavilion Bond Revenue Study
- Dodge City Bond Revenue Study
- Pavilion at Durbin Park Bond Revenue Study
- FGUA – Consolidated Bond Indenture Report
- Village West Bond Revenue Study
- Bay Laurel Center CDD – Annual Report
- Village West-American Royal Revenue Study
- Prairie Center Development Revenue Bonds
- The Pinnacle Sales Tax Revenue Study
- MidCities Special Revenue Bonds
- Belton Gateway Bond Revenue Study
- The Pinnacle Bond Revenue Study

Economic and Fisal Analysis Experience

Economic Development as a concept is measured in jobs and income but most importantly reflects a community's overall quality of life that is only maintained with sufficient public (fiscal) resources to meet existing and future needs. Therefore, understanding economic and fiscal outcomes assists communities with assessing the potential benefits on concepts of an overall "quality of life" – cost-benefit, employment growth, the nature of jobs, economic welfare, community income and wealth, and public infrastructure and services. Economic and Fiscal Analyses and services have been provided for more than 30 years; experience has included the following:

- Virgin Islands Environmental User Fee Economic Impact Analysis, U.S. Virgin Islands
- Economic Impact of Protecting the Florida Manatee
- U.S. Rental Car Economic and Market Demand, National Car Rental
- Gulf War Economic Impact on Rental Car Industry, National Car Rental
- European Banana Economic and Market Demand, CHEP Europe
- Orlando Parks and Recreation Economic Benefits
- SED (Florida) Community Impacts
- St Lucie (Florida) Water Reclamation Facility Economic Impacts

- Rose Arts (Florida) Fiscal Impacts
- Miami New Drama Economic Impact Analysis
- Miami-Dade Pike Transit Oriented Development Economic Impact Analysis
- Economic and Fiscal Impact Analyses (continued)
- Apopka (Florida) Economic and Fiscal Analysis
- Marion County (Florida) Aquatics Center Economic and Fiscal Analysis
- Reunion Resort (Florida) Fiscal Impact Analysis
- Amelia Island (Florida) Development Economic and Fiscal Impact Analysis
- Neptune Road (Florida) Economic and Fiscal Impact Analysis
- IOC Pompano Beach (Florida) Economic Impact
- Sorrento Pines (Florida) Fiscal Impact Analysis
- New Smyrna (Florida) Beach Fiscal Analysis
- Downtown Daytona (Florida) Fiscal Impact Analysis
- Tohoqua (Florida) Fiscal Impact Analysis
- Albert Whitted (Florida) Airport Economic Benefit Analysis
- Gaylord Palms (Florida) Fiscal Impact Analysis
- North End Charlotte (North Carolina) Economic and Fiscal Impact Analysis
- Maitland West (Florida) Fiscal Impact Analysis
- River District (North Carolina) Fiscal Impact Analysis
- Florida Hospital Fiscal & Economic Analysis
- Kendall Town Center (Florida) Economic Analysis
- Miami (Florida) Icebox Café Economic Analysis
- Osceola (Florida) Fiscal Impact Analysis
- Melbourne (Florida) Economic Impact Analysis
- Kansas State University Economic Impact Analysis
- Miami-Dade (Florida) Fiscal Analysis
- CEMEX (Florida) Facility Economic Analysis
- University of Central Florida Downtown Economic Impact Analysis
- US 17-92 Flyover (Florida) Modification Economic Analysis
- Miami Uptown (Florida) Economic Analysis
- Ocean Cadillac (Florida) Economic Analysis
- Vizcaya (Florida) Economic Analysis
- Economic Impact of Spring Training Facility, New York Yankees (Florida)
- Biomedical Cluster Economic and Fiscal Impacts at Lake Nona, Tavistock (Florida)
- Economic Development Analysis, Piedmont Triad and City of Havelock (North Carolina)

Market Studies and Financial Analyses

Financial modeling and pro forma development have been provided across a broad range of concepts with the common goals of understanding financial feasibility, profit maximization, or estimating expected return on investment. Professional experience with providing Financial Modeling and Analyses has included the following:

- Cocoa Hotel Market Study
- St Cloud Annexation Analysis
- Financial Modeling – Power System Agreement, City of St Cloud
- Zephyrhills Development Pro Forma and Financial Modeling
- SR-200 Development Pro Forma and Financial Modeling, Nassau County
- LaVilla Development Pro Forma and Financial Modeling, Jacksonville
- Fly Ash Pro Forma and Financial Modeling, Dominion Power, Virginia

- Kissimmee CRA Long-term Financial Modeling
- Santa Fe Hospital Development Financial Modeling
- Affordable Housing Linkage Fee Financial Modeling, City of Orlando
- Bonus Density Incentives and Financial Modeling; Affordable Housing, City of Orlando
- Annexation Analysis and Financial Impact Model, City of Bradenton
- Inclusionary Zoning and Financial Modeling; Workforce Housing, Miami-Dade County
- Public Safety Financial Modeling, Putnam County and City of Palatka
- Optimal Development and Profitability Modeling, Miami-Dade County
- Scrub Jay Mitigation Financial Modeling, Brevard County
- Beach Restoration Financial Model, Amelia Island Plantation
- Fire Impact Fees and Financial Modeling, Osceola County
- Orlando/Orange County Fire Territorial Agreement and Financial Modeling, City of Orlando
- Price and Inventory Optimization, Walt Disney
- Price Elasticity Analysis and Profit Optimization Modeling, Walt Disney
- Environmental User Fee and Financial Modeling, U.S. Virgin Islands

Matt Manchisi PE, PMP

CONDITION ASSESSMENT SUBJECT MATTER EXPERT

Project Manager at Kimley-Horn

Education

- Master of Science, Environmental Management, Johns Hopkins University (2009)
- Bachelor of Engineering, Civil Engineering, The Cooper Union for the Advancement of Science and Art (2005)

Certifications

- Professional Engineer in NY, NJ, CT, MA, NH, PA, VA
- Project Management Professional

PROFILE

Matt brings 20 years of experience in areas including strategic planning, developing comprehensive asset management programs, and optimizing capital and operating expenses for utilities. Matt is a utility management professional with a strong technical foundation and a passion for process improvement. He has a strong track record of leading diverse, geographically distributed teams for municipal and industrial clients across all phases of the project lifecycle.

KEY PROJECT EXPERIENCE

Cliffwood Beach (NJ): Old Bridge Municipal Utilities Authority, Cost-of-Service/Rate Case Support

Project Manager. Kimley-Horn provided consultant engineering services to OBMUA supporting an analysis of existing and proposed water rates and a cost-of-service model.

Oyster Bay (NJ): Water Authority of North Shore Asset Management

Asset Management. Matt provided engineering support in collaboration with the Authority's appraiser to assess the North Shore/Sea Cliff water system. In support of this effort, Kimley-Horn performed a combination of desktop and onsite assessments to evaluate the condition of and future capital needs for the Sea Cliff Elevated Storage Tank and Water Treatment Facility, Glen Head Storage Tank, and Water Filtration Plant, 350,000 LF of distribution and transmission piping, 500 main line valves, and more than 300 fire hydrants.

Statewide (NY): NYS Environmental Facilities Corporation, Municipal Sewage System Asset Management Program

Project Manager. Kimley-Horn is assisting multiple towns and municipalities in New York with the development and implementation of an asset management plan for wastewater infrastructure. Services include developing asset inventories, present worth, remaining useful life, and risk analyses, establishing levels of service, developing five-year CIPs, performing sewer rate studies, preparing long-range funding strategies, and outreach, education, and training.

Due Diligence Infrastructure Evaluations (Confidential)

Portfolio Manager. Matt served as the portfolio manager for site-wide infrastructure evaluations of developed communities to assist the client in determining whether to acquire the subject properties to be improved and held for approximately 10 years.

City of Seguin (TX): Schertz-Seguin Local Government Corporation (SSLGC), CMMS Solution Support

Project Manager. Matt provided professional services related to the selection of a new computerized maintenance management system for SSLGC. Services included facilitation of a requirements workshop to understand their business, functional, and technical requirements of the desired software, development support of business process flows, and vendor research. Kimley-Horn provided professional services related to the selection of a new computerized maintenance management system for SSLGC. Services included facilitation of a requirements workshop to understand their business, functional, and technical requirements of the desired software, development

support of business process flows, and vendor research. Matt provided professional services related to the selection of a new computerized maintenance management system for SSLGC. Services included facilitation of a requirements workshop to understand their business, functional, and technical requirements of the desired software, development support of business process flows, and vendor research.

Charlotte County (FL): Water and Wastewater Regulatory Compliance Program Improvements
Technical advisor and dashboard development lead. Matt serves as the technical advisor and dashboard development lead for the annual regulatory compliance services to the County for the water and wastewater systems. The project includes performing treatment plant audits, reviewing reporting to FDEP and SWFWMD quarterly for the four water reclamation facilities and one water treatment plants, and assisting the County with all FDEP correspondence. Facility inspections are conducted annually to confirm components are compliant and recommendations are provided in the Audit Report. Additional tasks included in the project include wastewater FDEP operations permit modification applications and permit renewals, compliance assistance related to FDEP actions.

City of North Bay Village (FL): North Bay Village, Asset Inventory Update
Technical Lead. Matt led the evaluation and analysis of the Village's water, wastewater, and stormwater infrastructure assets. Utilizing the village's GIS, record drawings, and inspection data, the Kimley-Horn team provided a desktop analysis of these systems where we provided estimated remaining useful lives, replacement costs, and recommended next steps to enhance future data collection and management.

City of Hampton (VA): Facilities Asset Management Planning and Program Development
Project Manager. Matt managed the city-wide asset management maturity assessment and implementation roadmap. Through this initiative, we worked with the city to baseline their current processes and practices, identify opportunities for improvement, and develop an implementation plan.

City of Virginia Beach (VA): Stormwater Criticality Assessment
Technical Lead. Matt and the Kimley-Horn team assisted the City in evaluating the environmental impacts on select facilities owned by the City and identifying potential mitigation and adaptation strategies to protect them. Kimley-Horn utilized the city's GIS along with drainage basin modeling and current and legacy computerized maintenance management system (CMMS)-Cartegraph and Hansen-data to develop probability and consequence of failure risk criteria and scoring. The team coordinated with the city to identify asset grouping strategies based on either basin level or city district level and incorporated budgetary cost information for contract work versus city work to develop planning level resource requirements for both CCTV and flushing efforts. While the primary goal of this effort was for the inspection and flushing programs, Kimley-Horn also worked with the city to establish criteria for system repair and rehabilitation efforts using all of the compiled data, including CCTV inspection results.

City of San Juan (PR): Condition Assessment and Bond Engineering Report, Puerto Rico Aqueduct and Sewer Authority
Project Engineer. Matt assisted the client in the role of project engineer as part of the Kimley-Horn team for the preparation of a Consulting Engineer's Report. The preparation of this report included the inspection and evaluation of water storage, treatment, and conveyance facilities, review of financial records, and an organizational assessment.

Ted Nitza PE

CONDITION ASSESSMENT SUBJECT MATTER EXPERT

Asset Management Specialist at Kimley-Horn

Education

- Master of Business Administration, Indiana University (2014)
- Bachelor of Science, Civil Engineering, Purdue University (1994)

Certifications

- Professional Engineer – IN, NY

PROFILE

Ted is a Professional Engineer with more than 30 years of civil/environmental engineering experience in drinking water treatment, storage and distribution along with sanitary sewer, stormwater and other utility related industries. Ted has helped many clients, communities and utilities grow through direct engineering efforts as well as through innovation and the development of new markets, relationships and approaches to organic customer growth and utility partnerships and acquisitions.

KEY PROJECT EXPERIENCE

*Town of Ulster (NY): Asset Management Plan Development for Wastewater Treatment Plants and Sanitary Sewer Systems

Project Manager. Selected by the State of New York to participate in the piloting and further development of next-generation asset management plans for public utilities. The effort involved complete inventory of the wastewater treatment works, other horizontal and vertical assets, robust condition assessments, vulnerability and resiliency determinations, level of service, succession planning, rate study and capital improvement planning, replacement cost and operational excellence training.

*Ontario County (NY): Ontario County Public Works, Consolidation Study of the Sanitary Sewer Systems

Project Manager. Retained by the County of Ontario Public Works to study, determine and articulate the potential benefits of partial or complete consolidations of currently separate sanitary sewer districts throughout the county. The effort involved the initial stages of advanced assets management inventory and condition assessment, trustee interviews, peer comparisons and the development of standardized financial reports. Several regionalization scenarios and pro formas are to be developed and presented to the public and elected officials. Final recommendations to include legal and legislative tasks, service area and growth projections, consolidated rate structures and outside funding assistance opportunities.

*Village of Hempstead (NY): Drinking Water Rate Study and Planning Documents

Project Manager. Performed a rate study for the water utility and developed a ten-year rate increase plan. Developed budgeting tools and sensitivity analysis methods for the review and discussion and several approaches. Prepared public notice and report documentation for the successful implementation of the full rate schedule and financial health of the utility system. Provide interval performance reports and analysis.

*City of Fort Wayne (IN): Acquisition of Southwestern Water Treatment, Storage, and Distribution System Assets

Project Manager. Provided proven expertise to pursue the Southwestern water treatment system and other service assets of Aqua Indiana for the City of Fort Wayne. The effort involved engineering work, affordability and feasibility analysis, rate stabilization and savings study, regulatory understanding and legal familiarity with market based and condemnation efforts. Approximately 12,500 customers added to City Utilities along with several strategic growth areas for long-term efficiencies, stability and revenue diversity.

*** Winchester and Leo-Cedarville (IN): New Water Treatment Facilities**

Construction Manager and Inspector. Provided lead on all aspects of new drinking water treatment systems for locations in Indiana. Both projects included all organizational, regulatory and engineering support to create a new water treatment systems and related backwash treatment systems. Determined initial budgets, rate studies and capital planning. Conducted several public meetings and advocated for local, state and other regulatory approvals.

**Indicates project Ted completed prior to joining Kimley-Horn*

Timothy Chou PE, PMP

CONDITION ASSESSMENT SUBJECT MATTER EXPERT

Project Manager at Kimley-Horn

Education

- Master of Engineering, Water Resource Management, Stevens Institute of Technology (2018)
- Bachelor of Science, Civil Engineering, University of Illinois at Urbana-Champaign (2011)

Certifications

- Professional Engineer - NJ
- Project Management Professional

PROFILE

Timothy is a water utility professional with hands-on, in-depth engineering and operational experience in the water utility industry in asset management, pipe prioritization, risk-based analysis, GIS, hydraulic modeling, master planning, and forecasting. He has worked with the private water utility, SUEZ, on a variety of infrastructure planning projects including pipe failure prediction modeling, GIS dashboard development, and asset management plan development.

KEY PROJECT EXPERIENCE

City of Seguin (TX): Schertz-Seguin Local Government Corporation, CMMS Solution Support

Project Engineer. Tim provided professional services related to the selection of a new computerized maintenance management system for SSLGC. Services included facilitation of a requirements workshop to understand their business, functional, and technical requirements of the desired software, development support of business process flows, and vendor research

City of Newburgh (NY): Wastewater Asset Management Plan Development

Deputy Project Manager. State-funded project to develop and assist with the implementation of an asset management plan for the City's wastewater treatment and conveyance infrastructure. Services include developing and refining asset inventories, present worth, remaining useful life, and risk analyses, establishing levels of service, developing five-year CIPs, performing sewer rate studies, preparing long-range funding strategies, and outreach, education, and training.

City of Hampton (VA): Facilities Asset Management Planning and Program Development

Project Engineer. Tim provided a city-wide asset management maturity assessment and implementation roadmap. Through this initiative, Kimley Horn worked with the city to baseline their current processes and practices, identify opportunities for improvement, and develop an implementation plan.

City of Virginia Beach (VA): Stormwater Criticality Assessment

Project Engineer. Tim developed criticality assessment protocol for the city's stormwater conveyance system to prioritize pipeline flushing and CCTV inspection programs. Kimley-Horn utilized The City of Virginia Beach's GIS along with drainage basin modeling and current and legacy CMMS (Cartegraph and Hansen) data to establish likelihood of failure and consequence of failure risk criteria and scoring. Results were grouped at basin level and City District level in order for the City to optimize CCTV and flushing efforts. Kimley-Horn also worked with the city to establish decision-making criteria for system repair and rehabilitation efforts utilizing all of the compiled data including CCTV inspection results.

Pinellas County (FL): Septic to Sewer Master Implementation Plan

Project Engineer. Tim managed the process of developing a Master Implementation Plan for Pinellas County for their Septic to Sewer Program for 4 service areas. Responsibilities included evaluation of three different sewer technology solutions, preliminary designs, GIS exhibits, Revit renderings, community outreach, permitting, survey

review, developing OPCCs, life cycle analysis, environmental impacts, and providing recommendations that prioritized project service areas within the County's goals and budgets. Project is currently going through its 60% design phase.

Town of Haverstraw (NY): Veolia Water New York, PFAS Design, Permitting, Bid Phase, and Construction Support

Project Manager. Veolia intends to install water treatment facilities at two locations with the goal of providing PFAS and other needed treatment. These sites contain small wells with permitted flows between 140 and 280 gallons per minute. This project will add treatment for PFAS to bring water into compliance with PFOA/PFOS under New York State Drinking Water Standards and pending EPA regulations using Granular Activated Carbon (GAC).

*(NJ): SUEZ Highlands System Risk Register and Master Plan

Project Manager. Tim led a team of engineers and interns on collecting asset data using ESRI mobile tools on 33 small water treatment plants and 8 small wastewater treatment plants. He engaged with local operators and engineers to fully understand process flows, asset criticality and system long term needs. He also developed data collection and cleaning process that delivered transparent results for stakeholders.

**Indicates project Tim completed prior to joining Kimley-Horn*