

**TECHNICAL
PROPOSAL**

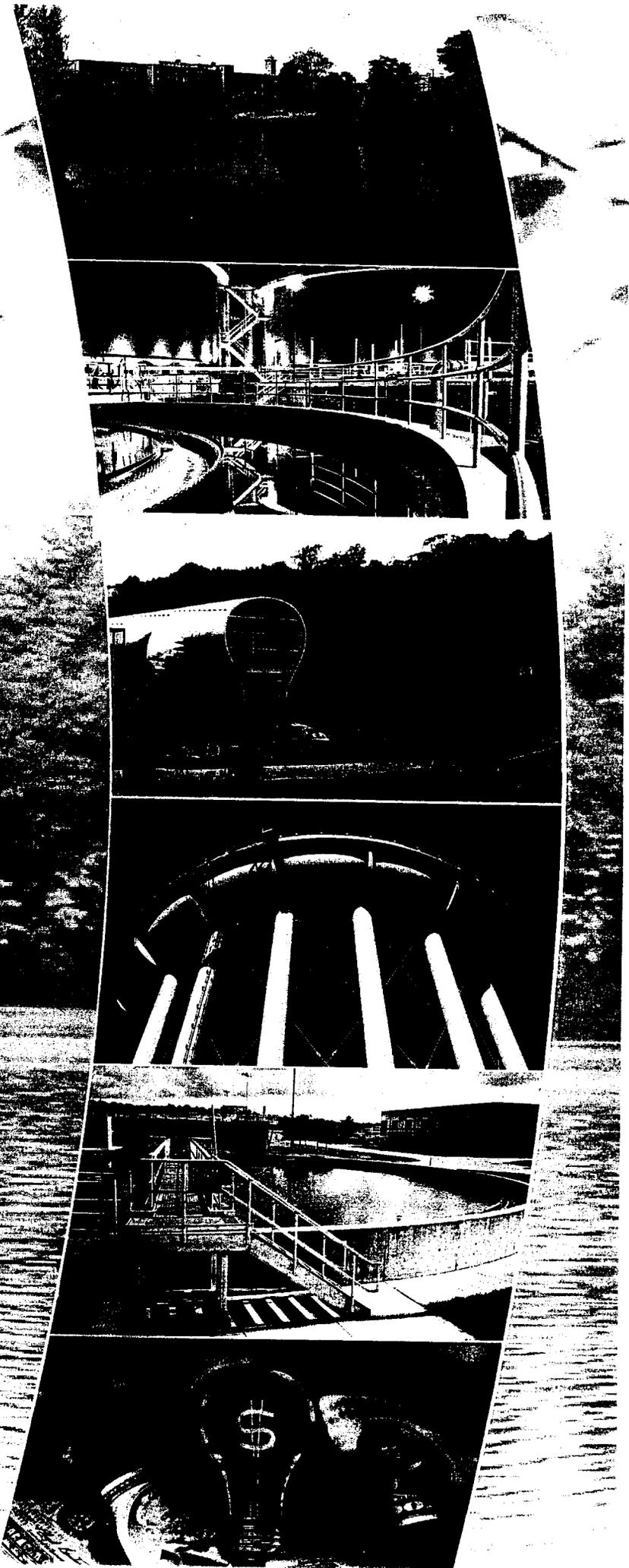
Exh 1.06

**WATER UTILITIES
WEIGHT SERVICES**

01505

WATER

R-W-BECK



July 14, 2005



City of Nashua
Central Purchasing Office
229 Main Street
Nashua, NH 03061

Dear Community Leaders,

Subject: RFP1306-061505 - Water Utility Oversight Services

The City of Nashua (City) and the Merrimack Valley Regional Water District (MVRWD) have undertaken a prudent but locally uncommon process of acquiring the assets of the private water company that has been the local utility for generations. Customers have important concerns about the cost of service and whether an adequate supply of safe drinking water is assured by the long-range plans of the private company. There are also important concerns about the need to be better stewards of the watershed.

Since 1942, R. W. Beck has specialized in engineering-based management consulting services associated with municipal utility creation and operations. More important to Nashua and MVRWD, contract development, negotiations and oversight of water utility operations are our signature strength. We are broadly recognized in the water industry for our expertise advising owners on procurement, contract development, negotiations and contractor oversight, for a wide variety of services related to utility operations, maintenance and management.

R. W. Beck is renowned as an Independent Engineering advocate for municipalities, and has been consistently recognized nationwide for saving utilities money through innovative funding, contracting, operating, and business process strategies. By company mission, we are committed to objective, third-party independent engineering reviews. Therefore, we do not perform contract operations or complete design/build projects for clients. This standing is unique, and others cannot make such definitive 'no conflicts' declarations to the City and MVRWD. Owners and the financial community trust R. W. Beck to do the right thing, because of our status as an Independent Engineer. Our approach provides you the highest value because we expertly leverage the power of the free market to find the best, most valuable ideas and services for our clients through effective procurement, contracting and oversight. Our customers say it best. Please refer to Appendix A for several letters of reference. One example:

"Over the years, the Authority has come to know R. W. Beck as a trusted business partner. As an Independent Engineer, it is clear that they always endeavor to put the needs of the Authority first. R. W. Beck's reputation in the bond market is excellent. Their advice is sound, straightforward and timely."

Ms. Claire Bennitt, Chairperson, South Central Connecticut Regional Water Authority

Qualifications and Experience. Our qualifications and experience are detailed in Section 1 of our proposal. We offer this proposal in association with Tetra Tech, Inc. to gain their considerable water systems engineering, watershed management, and utility security planning expertise. Tetra Tech is one of the largest water engineering companies in America. Tetra Tech completed the comprehensive evaluation of the Pennichuck Water System for the City, in support of the utility taking, so they are very familiar with the issues associated with creating a community-owned utility for greater Nashua. We have preserved Nashua's investment in this evaluation by subcontracting with Tetra Tech.

Personnel Plan. Section 2 presents our Personnel Plan. Our project manager is a committed and concerned neighbor. Paul Doran, P.E., a long-time resident of Hollis, New Hampshire, raised his family locally and ran an engineering business in Nashua for many years. So Paul is very familiar with the institutional, political, and regulatory aspects of managing utilities in New Hampshire. More important to the City and the MVRWD, Mr. Doran is a recognized industry leader in contract oversight, having

spent much of his 30+ year career overseeing operations contractors and managing oversight contracts for major water utilities around the country. In fact, he has been involved in this line of work since the earliest privatized municipal operations contracts. As you will read in letters of reference included in Appendix A of our proposal, Mr. Doran is highly commended by his past contract oversight clients. Furthermore, backed by the extensive resources of R. W. Beck and Tetra Tech, Mr. Doran can provide your new utility extensive expertise in our specialties: start-up and operation of new municipal utilities, and contractor oversight. We provide you a seasoned group of professionals that are highly regarded for fair negotiation and oversight of tightly-framed operation and maintenance contracts that provide affordable service.

Sensitive to the critical importance of effective intergovernmental relations to the creation and commissioning of the community-owned utility, our project team includes important New Hampshire thought leaders. These leaders have many years of experience as public servants in local, state and federal government: John Clements, former New Hampshire Commissioner of Public Works and Highways; and Jeffrey Taylor, former Director, New Hampshire Office of State Planning. Their knowledge, insight, integrity and effective working relationships at all levels of government could be invaluable to the utility, particularly for regulatory compliance and grant-funding.

Technical Approach. Section 3 describes our Technical Approach. Priority challenges for the new utility early-on are likely to include: implementing effective watershed management; obtaining debt financing to pay for the acquisition and asset renewal resulting from deferred maintenance; fostering public support for the new utility; implementing effective management policies and procedures; recruiting and training leadership staff; and maintaining affordable rates to adequately cover the true cost of expected service levels, now and in the future. The new community-owned utility must build a strong foundation to successfully manage these challenges. We believe that effective long-range planning will be critical to the utility's success and we feature it in our Technical Approach.

Our proposed work plan is comprehensive in this context and describes how early planning should focus on the fundamentals – preserving acquired assets. The O&M contractor's condition plan we recommend will provide the current condition of all equipment and structures, their remaining useful life, and prioritize what must be replaced or upgraded. A relative ranking of mission-critical equipment will be identified so that the utility knows where to spend its limited capital most effectively to manage operations risks. The suggested work plan is a practical approach to managing the water system assets, and it provides a powerful long-range planning tool.

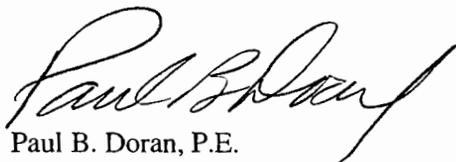
Thank you for the opportunity to propose on this important and exciting project. We hope that you consider our proposal favorably. Please call Paul Doran directly with any questions you might have. He can be reached during the day at (603) 493-2419 / pdoran@rwbeck.com. Paul's home phone number is (603) 465-7082.

Very truly yours,

R. W. BECK, INC.



Stephen R. Gates, P.E., DEE
Client Services Director



Paul B. Doran, P.E.
Senior Associate

| | |
|--|---------|
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APPENDICES

- **APPENDIX A: Client Letters of Reference**
- **APPENDIX B: Resumes of Project Team**

This proposal has been prepared for the use of the client for the specific purposes identified in the proposal. The conclusions, observations and recommendations contained herein attributed to R. W. Beck, Inc. (R. W. Beck) constitute the opinions of R. W. Beck. To the extent that statements, information and opinions provided by the client or others have been used in the preparation of this proposal, R. W. Beck has relied upon the same to be accurate, and for which no assurances are intended and no representations or warranties are made. R. W. Beck makes no certification and gives no assurances except as explicitly set forth in this report.

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R. W. Beck, Inc. considers the data and information contained in this proposal and subsidiary documents to be proprietary and business confidential. This proposal, and any other information contained or referenced herein, shall not be duplicated, used, or disclosed in whole or in part for any purpose other than evaluation of this proposal and use during the overall selection process or resultant contract or agreement.



**SECTION 1
FIRM QUALIFICATIONS
AND EXPERIENCE**

R. W. Beck is a highly specialized, engineering-based management consulting firm. Employee-owned since its founding in 1942, R. W. Beck's 500+ professionals are clear industry leaders in providing the unique management consulting associated with the creation of new utilities, regional authorities, and joint-action agencies such as the Merrimack Valley Regional Water District (MVRWD). From its traditional base of providing professional consulting and engineering services in the public utility industry, R. W. Beck has become known as an Independent Engineering advocate for municipalities, and has consistently been recognized nationwide for saving utilities money through innovative funding, contracting, operating, and business process strategies.

R. W. Beck has maintained offices in New England to serve the management consulting needs of utilities throughout the region continuously for forty years. Today, the firm offers a complete range of consulting and engineering services related to the operation, planning, organization, financial analysis, administration and design of water, wastewater, electric, gas and solid waste utilities. Our experience includes planning, technical and economic feasibility, management and finance-related services; economic, rate and environmental impact studies; water resources management; solid waste management; electric power supply planning and marketing; computer systems applications; and expert witness testimony. R. W. Beck provides engineering-based consulting – we integrate our engineering talent with managerial, financial, training, organizational, and operational expertise to find the best solutions to the challenges of utility operations and management.

This multi-faceted organization allows us to provide the resources of a large interdisciplinary pool of engineering, economic, sociological, and environmental talent and still retain personal and individual relationships with clients. We emphasize a close working relationship with our clients to ensure that the client is continually aware of the progress and status of the project and that the clients' requirements are being met.

For the City of Nashua's (the City) Water Utility Oversight Contract, R. W. Beck has chosen to complement its engineering-based management consulting expertise by engaging Tetra Tech, Inc. as a subcontractor. Tetra Tech completed the "Comprehensive Review of Pennichuck Water System" report for the City and has provided additional support during initial feasibility analyses associated with plans to create the community-owned water utility to serve greater Nashua.

The following pages detail the directly related experience of R. W. Beck and Tetra Tech concerning the planned Water Utility Oversight Contract.

What Makes R. W. Beck Valuable to Nashua and MVRWD

- Engineering-based management consultant
- Specialize in contractor oversight
- In-depth experience with utility regionalization and municipalization
- Independent – no conflicts
- Serving New England utilities for over 30 years

R. W Beck team experience is highlighted as follows:

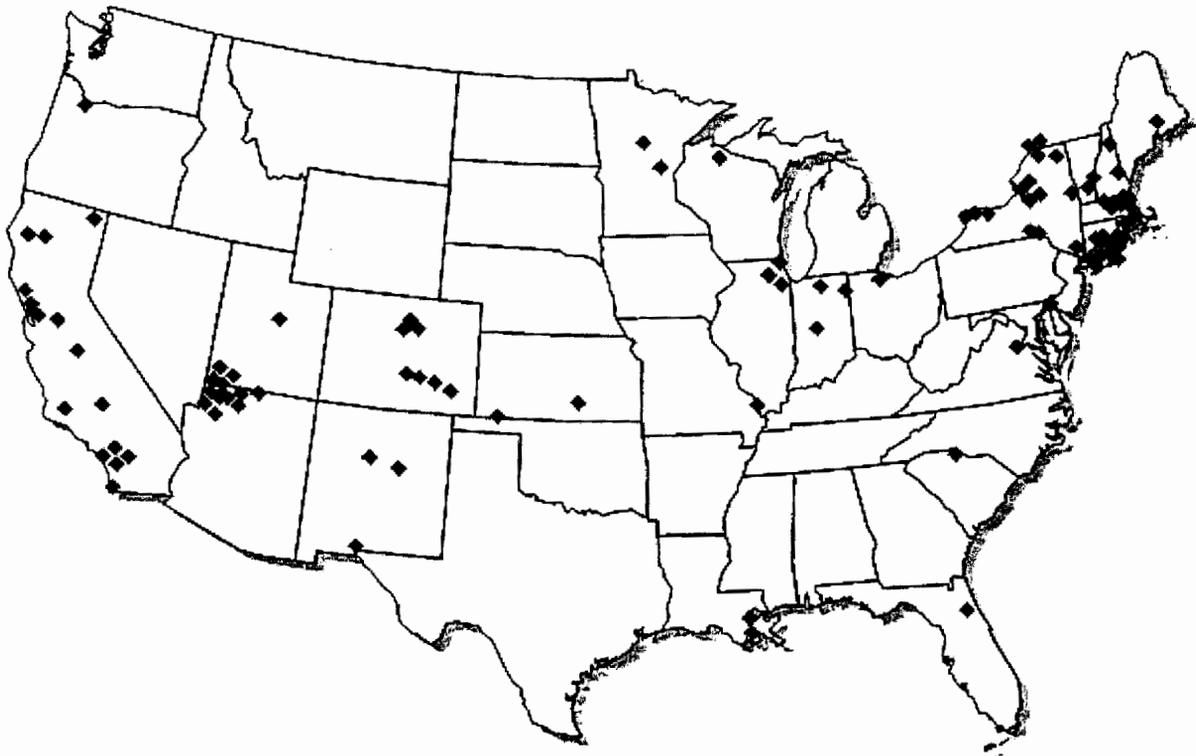
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R. W. BECK SPECIALIZES IN THE MUNICIPALIZATION AND REGIONALIZATION OF UTILITIES

Nationwide, R. W. Beck is recognized as the leader in establishing new utilities and joint-action agencies. Pictured below, are the locations of R. W. Beck's work in assessing the feasibility of and helping to establish new municipal and regional utilities.

R. W. Beck will provide consulting expertise and advice to the City of Nashua and the MVRWD, which is well grounded with extensive experience in all of the engineering and financial implications of starting a new municipal utility by taking over the assets and liabilities of a private enterprise. Providing engineering-based management consulting advice to emerging community-owned utilities is R. W. Beck's specialty.



R. W. Beck has specialized in helping create municipal utilities across the country since 1942.

R. W. Beck has extensive in-depth experience with Utility Regionalization and Municipalization. The following project descriptions are representative of R. W. Beck's regionalization experience.

Municipalization of New Haven Water Company, Connecticut

Owner: South Central Connecticut Regional Water Authority (SCCRWA)

R. W. Beck was retained by SCCRWA to perform a feasibility study of SCCRWA's acquisition of a major investor-owned water utility, the New Haven Water Company in 1977 and has provided engineering-based management consulting continuously, ever since. The original study included a technical review of all of the Company's major water system facilities; a survey of their operations and maintenance to ascertain the value and condition of each asset; the ability to finance the acquisition; and the impact on ratepayers. R. W. Beck prepared the Consulting Engineer's Report used for financing SCCRWA's purchase of the Company, and for initial capital improvements.

| Relevance to Your Project |
|--|
| <input checked="" type="checkbox"/> Creation of a new municipal utility |
| <input type="checkbox"/> Contractor Oversight |
| <input checked="" type="checkbox"/> Independent Engineer – provided third party validation of utility management in support of funding |
| <input checked="" type="checkbox"/> Capital Project Implementation |
| <input type="checkbox"/> Project Engineering – Planning, CIP prioritization, design or construction management. |

R. W. Beck's examinations included the technical investigation and evaluation of all facilities owned and operated by the Company, a review of the company's 10-year capital budget, technical review of the company's books of account and other records, as well as evaluation of operations and system management.



The firm also reviewed operating and repair records as well as preventive maintenance programs. In addition, water use records were examined, and customer usage was compared with SCCRWA's water supply for various portions of the system as an indication of system condition. SCCRWA's facilities are located in New Haven, Connecticut and supply water services to approximately 104,220 customers in Bethany, Branford,

Cheshire, East Haven, Hamden, Milford, New Haven, North Branford, North Haven Orange, West Haven, and Woodbridge. Water supplied is equal to approximately 73.4 million gallons per day.

R. W. Beck has also served SCCRWA as its Independent Engineer for each of its subsequent financings. In total, R. W. Beck has assisted SCCRWA in the issuance of approximately \$500,000,000 of revenue bonds since its inception.

Municipalization of Jamaica Water Supply Company

Owner: City of New York

The Jamaica Water Supply Company (JWSC) served a population of approximately 500,000 in the Borough of Queens, New York City and was the only private water company providing service within City limits. The rates charged by the private utility were considerably higher than those in the rest of the City. Over drafting of the groundwater table by the wells that serve the JWSC system was a concern, and the system began to experience problems with groundwater quality, particularly due to industrial chemicals.

These concerns prompted New York City to retain R. W. Beck to evaluate the feasibility of the City taking over the portion of the JWSC system within the City limits. The scope of the services was comprehensive and included engineering, operational, financial, and legal evaluations.

At the time of the study, the City's water supply system was incapable of delivering the JWSC requirements without reducing the pressure in the City's system to unacceptably low levels. The existing City distribution system was capable of supplying only one-half of the JWSC system demands. Part of R. W. Beck's analysis, therefore, evaluated an interim solution whereby the City would supply part of the JWSC water system demands and a number of the system's wells would remain in service to deliver the balance.



Since the City would be assuming the responsibility for the JWSC system and would use its reservoirs, pumping stations and many of the wells for some period of time, R. W. Beck conducted an evaluation of the condition and operation of the existing system facilities. The firm reviewed the operating staff and operating procedures to identify the staffing requirements and costs that the City would likely experience if it assumed responsibility for the operations.

Another key aspect of system takeover by New York City was the price that the City would need to pay the water company for its facilities. R. W. Beck estimated the system value using several different measures, including original cost less depreciation, replacement cost new less depreciation, and earnings value, to provide the City with an estimate of fair purchase price for the system.

Through a subconsultant, Morgan Guarantee Trust, R. W. Beck also evaluated the legal prerogatives of the City for the takeover and the methods available for financing the purchase of the system.

Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party of utility management in support of funding
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.

Municipalization of Florida Water Services, Inc.

Owner: Florida Water Services Authority

R. W. Beck served as Independent Engineer for the feasibility of the possible sale of the largest privately held water utility in Florida, Florida Water Services (FWS), to the Florida Water Services Authority (comprised of the cities of Gulf Breeze and Milton, Florida). FWS serves over 800,000 accounts in 26 Florida counties. R. W. Beck's services included the preparation of an Independent Engineers (IE) Report that was used in the sale of \$500 million in municipal utility bonds. Due to time constraints associated with the planned sale closing date and financing the bonds, R. W. Beck's review was completed in approximately six weeks.

R. W. Beck's principal responsibilities included:

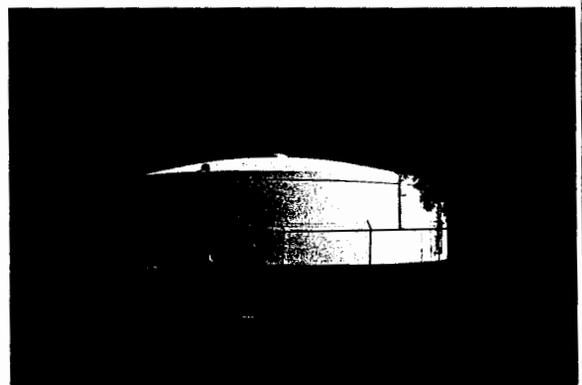
- Developing a detailed accounting of all FWS assets;
- Permit reviews to ensure that all facilities were in compliance;
- Inspections of above ground assets at all 156 FWS systems;
- Conducting a depreciation analysis of all below grade assets (pipes) to ensure that adequate funding had been allocated for system repairs and replacements;



- Reviewing water and wastewater plant capacity data as well as community growth projections in order to determine when additional plant facilities would be required;
- Developing a revised repair and replacement capital budget;
- Developing a revised "growth" capital budget;
- Conducting an organizational and management review;
- Beach scene from Pensacola, Florida; and
- Reviewing operations and maintenance budgets for each utility.

In order to complete the review within the time period allotted, ten teams of two professionals each were utilized to inspect facilities.

Based on R. W. Beck's review, the 5-year CIP for FWS was increased from \$150 million – to just under \$177 million. R. W. Beck determined that additional capital was needed to account for inflation as well as additional repair and replacement at a number of existing facilities that R. W. Beck determined to be in poor condition.

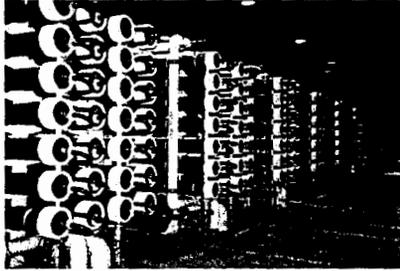


Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support of funding
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.

Utility Regionalization

Owner: San Diego County Water Authority, California



R. W. Beck has worked with the San Diego County Water Authority for over 10 years, beginning with serving as project manager on the feasibility study of whether to acquire the San Diego Gas and Electric

Company system as an option to their merger with the Southern California Edison Company. Since then, R. W. Beck has:

- Performed a financial review of debt structure, operating reserves, and risk management.
- Evaluated funding sources for their 10-year Capital Improvement Program.
- Recommended revenue plan restructuring to stabilize income by shifting partially from commodity- to facility-based rates and charges.
- Assisted with development of a major revision to the methodology for calculating and recovering demand charges.
- Assisted in litigation support.

Relevance to Your Project

- Creation of a new municipal
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support of funding
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.

Municipalization of Consumer's Ohio Water Company

Owner: City of Geneva, Ohio

The City of Geneva, Ohio retained R. W. Beck to review the feasibility of municipalizing the existing water distribution assets located within the city, which were owned and operated by Consumer's Ohio Water Company. R. W. Beck also reviewed the physical condition of the Consumer's Ohio water distribution assets located within the City and conducted an appraisal of those assets.

The scope of R. W. Beck's feasibility study included estimating the annual operating results of the proposed Water System over the study period (20 years) under a set of reasonable assumptions regarding such factors as the purchase price of the system, start-up costs, water rates, customer growth, and operation and maintenance expenses, among others. Additionally, R. W. Beck was retained by the City to provide an opinion of value, using the Income, Cost, and Marketing approaches to value, of the water distribution facilities located within the City. The results of the study are to be used by the City to determine appropriate sales price for an anticipated condemnation proceeding.

Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support of funding
- Capital Project Implementation
- Project Engineering – Planning, CIP prioritization, design or construction management.

Evaluation of Lake Tapps Municipal Water Rights

Owner: Cascade Water Alliance, Bellevue, Washington

R. W. Beck is working with the Cascade Water Alliance (CWA) to evaluate issues regarding CWA's potential purchase of the retired White River Hydroelectric Project and associated water rights from Puget Sound Energy (PSE). CWA is comprised of eight municipalities and districts that joined together to provide water supply for their current and future water demands. Collectively, the membership of CWA serves approximately 300,000 retail water customers in the region outside Seattle, Washington.



The White River Project was built by PSE in 1911. Water is diverted from the White River and transported to the Lake Tapps Reservoir. Lake Tapps is popular for recreational use during the summer months and Pierce County maintains several parks and boat ramp facilities on the lake.

In January 2004, PSE retired the hydroelectric project. R. W. Beck assisted CWA in negotiations with PSE to purchase 61,400 acre feet of water from Lake Tapps for municipal water use. In May 2005, CWA and PSE announced that an agreement had been reached to purchase the water rights and associated land and facilities for \$37 million, which was close to the value estimated by R. W. Beck.

R. W. Beck assisted CWA in the following areas:

- Determine the fair market value of the Lake Tapps municipal water right
- Identify the costs and risks to CWA of acquiring the Lake Tapps facilities:
 - Annual cost to operate and maintain the reservoir and diversion structures
 - Future capital expenditures
 - Costs and liabilities associated with owning a recreational lake
 - Compliance with Endangered Species Act and future regulations
 - Water quality issues
 - Site contamination costs
 - Dike safety and retirement costs
- Identify the value of Lake Tapps to other parties:
 - Homeowners – value of lake front property
 - County – property tax revenues; recreational resource
 - Corps of Engineers – needs to operate fish trap facilities
 - PSE – avoid Project dismantlement and remediation costs
- Examine alternative cost sharing agreements between CWA and other beneficiaries of the lake to help pay for lake management costs.
- Work with the CWA Executive Board to develop acquisition strategy and assist in negotiations with PSE and other parties.

Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support of funding
- Capital Project Implementation Support
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CONTRACTOR OVERSIGHT SERVICES

R. W. Beck has extensive experience in contractor oversight services for water and wastewater utilities, including oversight of contracts for concessions, contract operations, design-build (DB), design-build-operate (DBO) and build-own-operate-transfer (BOOT). R. W. Beck's participation in these projects dates back more than 20 years for both our public sector and private sector clients. The projects include water, wastewater, power plant, and solid waste management facilities and they range in capital project cost from approximately \$10 million to \$300 million. The following project descriptions are representative of R. W. Beck's extensive contractor oversight experience.

Seymour Water Treatment Plant Contract Operations Oversight

Owner: Greater Vancouver Regional District (GVRD)

R. W. Beck is assisting GVRD with using a design-build-operate (DBO) project delivery approach for a new 265-MGD ozonation and filtration plant for its Seymour water source-one of three major sources serving the region around Vancouver. R. W. Beck's role in the project is to provide assistance and guidance to GVRD related



to the design/build and contract operations process. Services include refining the project concept, developing performance specifications, developing procurement documents,

assisting with the selection of a shortlist of qualified proposers, reviewing proposals, assisting with contract negotiations and overseeing design, construction, commissioning, and operations.

The Seymour Project is a cornerstone of the GVRD's program to provide high-quality water to the greater Vancouver area and is the largest water treatment plant in North America being developed using the DBO process. The decision to use the DBO is based on careful consideration of water quality, cost, and schedule requirements.

| Relevance to Your Project |
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Program Management and Operations Contract Oversight

Owner: Tampa Bay Water, Florida



The Tampa Bay Water Authority (TBW) is a regional wholesale water agency created to develop and operate the water supply for the Tampa Bay region. TBW was created as a regional water authority in 1998 to

address pressing regional water supply issues for the 2,000,000 citizens in the greater Tampa area. With limited water supply in the area, and a rapidly growing population, it was critical for the local communities to come together to collaborate – rather than compete – to assure safe and adequate water for everyone in the region.

R. W. Beck was engaged by TBW shortly after its inception. TBW hired R. W. Beck to perform a comprehensive review of its planned \$900 million CIP needed to create an additional 90 MGD of potable water by 2007. The goal of the review was to determine the fastest, least costly means to complete the projects. R. W. Beck's recommendations for how to implement the CIP were approved unanimously by TBW's Board of Directors.

R. W. Beck is now assisting TBW with the procurement and implementation of several projects through public/private partnerships, including a 66 MGD surface water treatment facility and a 25 MGD seawater desalination water treatment facility. We prepared the design-build-operate (DBO) terms and conditions and procurement documents for the surface and groundwater treatment projects. We also assisted with development of terms and conditions and documents for BOOT procurement. Firm responsibilities include the development of risk allocation methodology; risk-based cost impact analysis for DBO procurement; development and assistance with the pre-qualification, evaluation of contractors, and proposals for DBO; and assistance with the negotiations of the DBO procurement. R.W. Beck has full contractor oversight responsibility, including the contractors responsible for contact operations of facilities valued at \$250,000,000 and annual operating budgets of \$25,000,000. Both of these facilities began commercial operation in 2003 and R. W. Beck maintains responsibility for oversight of the operations contractors.

As part of each OM&M agreement, R. W. Beck and the OM&M contractors are required to perform certain periodic tasks that ensure the proper administration of the contract. These tasks include a semi-annual facility inspection, annual plant survey and report, annual review meetings, independent review of monthly service fee billings, review of annual settlement statement, annual review of revised record drawings, review use of reserve funds, assisting in the reapplication of regulatory permits as well as assisting legal, financial and risk managers with their reviews of annual insurance renewals, financial credit ratings and potential uncontrollable circumstances.

Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support funding
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.



Water Treatment Facilities Contract Operations Oversight

Owner: Seattle Public Utilities (SPU)

Facing the challenges of complying with more stringent drinking water standards, increasing its water system's flexibility, and minimizing rate increases, SPU elected to develop two water treatment projects — the Tolt Treatment Facilities and Cedar River Facilities — using an innovative design/build/operate (DBO) contracting approach. The DBO approach combines design, construction, and long-term operation of the facility into one contractual agreement. The 120 MGD Tolt Project, which provides roughly one-third of the drinking water for 1.25 million people in the Seattle metropolitan area, is one of the largest water treatment plants in the United States to be developed using this type of contracting. R. W. Beck led a team of consultants supporting SPU with implementing the DBO process and overseeing the operations contractor.

Tolt DBO Procurement and Oversight - SPU entered into a DBO agreement which saved nearly \$70 million when compared with a similar project developed using a conventional design/bid/build, City-operated approach. This confirmed SPU's expectations of the potential benefits of DBO contracting — benefits that arise from synergistic thinking between designers, constructors, and operators and from placing long-term responsibility for the facility under a single contract guarantor. The DBO process was initiated in an effort to reduce capital and operating costs, after SPU completed the project's design concept.

The R. W. Beck team conducted intensive workshops with SPU and its legal and financial advisors to develop an overall strategy and approach for the DBO procurement. During the solicitation process, R.W. Beck prepared the RFQ documents, reviewed Statements of Qualifications, and recommended four teams for short-listing. We prepared performance specifications for the facility and established the characteristics and cost of the benchmark facility. We also helped evaluate proposals and provided SPU with support throughout the DBO contract negotiations process. Subsequently, R. W. Beck provided contractor oversight during design, construction, commissioning and operations project phases.

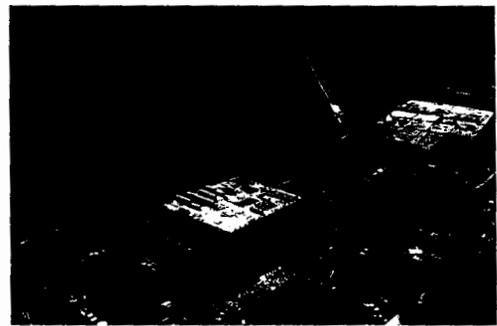


Cedar River DBO Procurement and Oversight - Approximately two-thirds of the drinking water for 1.25 million people in the Seattle metropolitan area originates in Seattle's Cedar River water supply system. SPU retained R. W. Beck to lead a multidisciplinary team to develop and implement the Cedar Treatment Facility at Lake Youngs using an overall DBO approach, with certain DB elements being turned over to SPU for operation. The R. W. Beck team assisted with procurement strategy development, preparation of

procurement documents (RFQ, RFP, and technical and performance specifications), the evaluation of proposers, negotiations, and oversight of design, construction, commissioning, and operations.

Relevance to Your Project

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INDEPENDENT ENGINEERING

Perhaps more than anything else, clients value R. W. Beck's independence. R. W. Beck is an engineering-based management consultant that does not perform major design work; does not provide contract operations services and does not complete design/build projects. Rather, by strategic intent, we are always on the side of the Owner as an advisor and advocate in an oversight role. R. W. Beck's status of Independent Engineer provides the highest value to Nashua and MVRWD because:

- R. W. Beck will **not** compete for design work for Nashua or MVRWD because it is a conflict of interest.
- R. W. Beck **will** provide procurement and contracting expertise to help Nashua and the MVRWD go to the marketplace and find the best value for all the services it might need, including O&M, engineering, and water resource planning.
- R. W. Beck provides high creditability on Wall Street for debt financing for Nashua and the MVRWD.
- R. W. Beck has no contracts with contract operation companies, so it has no conflicts of interest.
- R. W. Beck's standing in the marketplace is unique in this regard and is highly valued by our clients.

The following several project descriptions summarize some of R. W. Beck's experience as an Independent Engineer.

Independent Engineering for Financing

Owner: Rhode Island Clean Water Finance Agency

R. W. Beck prepared an Independent Engineer's Report which was included as part of the Official Statement prepared by the Rhode Island Clean Water Finance Agency (the "Agency") and issued as part of the sale by the Agency of \$30,000,000 of revenue bonds. The Agency will use the proceeds of the bonds to provide a loan to the City of Cranston, Rhode Island (the "City") which in turn will fund a loan to Triton Ocean State LLC (Triton). The City will lease its wastewater treatment system (the "System") to Triton for a 25-year period and Triton will lease, operate, and maintain the System and design and finance certain improvements (the "Capital Improvements") to the System.



R. W. Beck's report addressed technical, environmental, and economic matters of interest and concern to prospective bond purchasers including the following matters: the capabilities of the various project participants including the operation and the EPC contractor; the current condition of the existing System; the status of the existing operations and identification of areas of where the System is out of compliance; the terms and conditions included in the operating and construction agreements; the ability of the proposed Capital Improvements to bring the System back into compliance; and the development of projected operating results for the term of the bonds. Following financing, R. W. Beck provided construction monitoring services.

Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support funding
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.

Independent Engineering for Public/Private Partnership

Owner: Camden Water Department, New Jersey



R. W. Beck was retained to serve as independent engineer related to the financing for a 20-year concession granted to a private operator of the Camden, New Jersey water system. The project included a

detailed review of the projected operations and maintenance expenses, maintenance and capital funding reserves, staffing, as well as a review of the services agreement. In addition, sensitivity analyses were conducted to address potential fluctuations inherent in long-term services agreements of this type to determine the potential effect on debt service coverage. The firm also performed management and staff interviews of the private operator and prepared a comparative rate analysis of regional utilities with similar characteristics.

Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support of funding
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.

Consulting for Bond Financing

Owner: Guam Waterworks Authority (GWA)

UBS Financial Services, Inc. is R. W. Beck's client during preparation of a Consulting Engineer's Report for GWA. This is the first bond financing project that GWA has undertaken. The proceeds are to be used for capital improvement projects, which are largely required to meet the requirements of a Stipulated Order from the Environmental Protection Agency. This project is ongoing and the size of the bond issue has yet to be determined, but is expected to be approximately in the range of \$100 million. Money will be used for a number of activities including improving the water transmission facilities, providing for changes to the chlorination systems, water storage facilities as well as wastewater treatment facilities.

Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support of funding
- Capital Project Implementation
- Project Engineering – Planning, CIP prioritization, design or construction management.

Independent Engineering for Revenue Bond Financing

Owner: Virgin Islands Water and Power Public

Recognizing the financial, management and other benefits of having a Independent Engineer's report, Virgin Islands Water and Power urged Public Resources Management Group, Inc, to retain R. W. Beck, Inc. The report was prepared to assist in refunding all or a portion of its existing indebtedness. Topics included in the report were: (1) discussion of existing water production and distribution facilities; (2) discussion of the management of the system; (3) projected sales, customers, revenues and expenditures; (4) projecting capital needs; (5) regulatory requirements.

| Relevance to Your Project |
|--|
| <input type="checkbox"/> Creation of a new municipal utility |
| <input type="checkbox"/> Contractor Oversight |
| <input checked="" type="checkbox"/> Independent Engineer – provided third party validation of utility management in support of funding |
| <input type="checkbox"/> Capital Project Implementation Support |
| <input type="checkbox"/> Project Engineering – Planning, CIP prioritization, design or construction management. |

Independent Engineering in Support of Revenue Bond Financing

Owner: Northeast Maryland Waste Disposal Authority

R. W. Beck was retained to prepare an Independent Engineer's Report for this project, located on an 8-acre site in the City of Baltimore, Maryland, and designed to process approximately 200 wet tons per day of sludge from Baltimore's Back River Wastewater Treatment Plant. Its annual design capacity is approximately 55,000 tons. The facility incorporates sludge composting technology which produces a marketable compost material used as a soil conditioner.

R. W. Beck was retained by the Northeast Maryland Waste Disposal Authority to provide Independent Engineering Services in support of revenue bond financing for proposed capital improvements to the facility. Specific services included review of:

- Contracts between the City, the Authority, the Company, and other participants.
- City's estimates of historical and projected quantities of sludge generated by the Wastewater Treatment Plants.
- Company's Capital Improvement Program (CIP).
- Status of operating permits and approvals.
- Actual and projected levels of facility production and operation.
- Historical operational and maintenance expenses and the method used to develop future expenses.
- Regional market for compost sales.
- Review of project confirming that the CIP was completed.

| Relevance to Your Project |
|--|
| <input type="checkbox"/> Creation of a new municipal utility |
| <input type="checkbox"/> Contractor Oversight |
| <input checked="" type="checkbox"/> Independent Engineer – provided third party validation of utility management in support of funding |
| <input type="checkbox"/> Capital Project Implementation Support |
| <input type="checkbox"/> Project Engineering – Planning, CIP prioritization, design or construction management. |

CAPITAL IMPROVEMENT PLAN MANAGEMENT

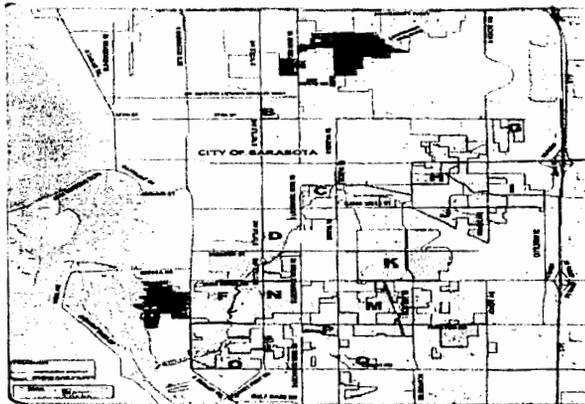
Often, major utilities require an independent review of their capital improvement planning in order to maximize the leverage of the limited availability of capital; prioritize needs to assure adequate service levels; and to stabilize rates. R. W. Beck is regularly engaged by utility clients to provide an Independent Engineer's view of planned capital improvements. R. W. Beck views a utility's CIP as a business system, which combines important organizational, financial, and political issues together into an integrated action plan. Clients find high value in R. W. Beck's independent reviews, because of our ability to prioritize their needs and define ways to save them money.

The following project descriptions are representative of R. W. Beck's experience in capital improvement plan management.

Review and Recommendations of Five-Year Capital Improvements Plan (CIP)

Owner: Sarasota County Utilities, Florida

As a result of significant growth in the Sarasota County Utilities (SCU) customer base, the acquisition of several private water company assets, and requests for the development of various specific projects by the Sarasota Board of County Commissioners (BCC), SCU found itself in the midst of having to critically evaluate its 5-year CIP. Due to limited financial resources, SCU performed a critical evaluation of which projects currently included in their CIP must be developed as planned, deferred or put on hold indefinitely, as well as determine the appropriate funding level for these various projects.



"R. W. Beck Conducted an Independent Analysis of Our CIP That I Use As A Bible".

*Rick Howell, Utilities Director,
Sarasota County, Florida*

R. W. Beck provided the following services: CIP review; funding recommendations; and project evaluation.

Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support of funding
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.

R. W. Beck was retained by SCU to work with County staff to prioritize the various projects currently included in SCU's 5-year CIP and recommend appropriate funding levels for those projects that must be developed to meet the needs of the community. R. W. Beck staff worked with a broad internal stakeholder group including staff from various County departments/business units (utilities, stormwater, public works, real estate and finance) to determine the appropriate CIP funding level going forward. As part of the project, R. W. Beck staff reviewed County data and information supporting the various proposed projects, holding one-on-one meetings with staff from the various business units, and worked to develop consensus as to the appropriate funding level and set of projects to be included in SCU's 5-year CIP.

Water Plan 2020

Owner: County of Kauai Department of Water, Hawaii

R. W. Beck is working with the Department of Water on the development of a 20-year comprehensive water plan to establish a viable long-range integrated capital improvement plan for the Department's service area on Kauai. The primary focus of this effort is balancing future water needs with water affordability on the island. Components of the study include projected population growth on the island, assessing water system vulnerability and appropriate service levels, balancing financial planning requirements with rate adjustments, and addressing a number of policy-related elements. The project includes development and use of 13 hydraulic analysis models ranging in size from several hundred to several thousand pipes. These models all include multiple sources, reservoirs and pressure zones. An important part of the project centers on public involvement and the development of a strategy that will enhance the public's understanding of the Department's goals, operational requirements and related costs.

| Relevance to Your Project |
|---|
| <input type="checkbox"/> Creation of a new municipal utility |
| <input type="checkbox"/> Contractor Oversight |
| <input type="checkbox"/> Independent Engineer – provided third party validation of utility management in support of funding |
| <input checked="" type="checkbox"/> Capital Project Implementation Support |
| <input checked="" type="checkbox"/> Project Engineering – Planning, CIP prioritization, design or construction management. |



In conjunction with development of a water master plan, R. W. Beck facilitated multiple workshops with the Board, senior management, key staff, and other opinion leaders. The purpose of the workshops was to prioritize strategic objectives for the Department and identify potential organizational enhancements, performance metrics, and process improvements. Throughout these work sessions, team members learned ways of enhancing their listening, communication, and strategic skills. All-hands meetings were held during

the planning process to seek input and feedback from staff and to gain endorsement of strategic issues, goals, and actions. Core planning team members also engaged board members to solicit input and feedback.

The results of the project will include a 20-year capital improvement plan and a corresponding financial model that will be a tool for the Department to evaluate future operating and capital expenditure scenarios. These scenarios will be evaluated in a rate model to determine rate level impacts. Rate options will be evaluated, including reviews of agriculture rates and facilities charges.

Capital Improvement Program Review

Owner: San Francisco Utilities Commission, California

The San Francisco Public Utilities Commission (SFPUC) developed a proposed \$3.6 billion Capital Improvement Program (CIP) to be implemented over the next 13 years. The proposed CIP represented a tenfold increase in the annual project delivery rate over the SFPUC's recent activity.

R. W. Beck conducted an independent engineering review to verify the validity of the proposed capital projects, assess the SFPUC's capabilities to implement the program, and review the financial assumptions regarding bond funding. Our project work was then reviewed and coordinated through a Blue Ribbon Panel appointed by the City of San Francisco.

This review considered three aspects of the proposed CIP. The first was an independent process review of the validity of the individual projects that formed the CIP including the sizing and need for the improvements. The second aspect was the process used to select among competing alternatives. The final consideration was the scheduling and prioritization of projects. The SFPUC's implementation plan and an independent opinion of its ability to successfully implement the program in a timely and efficient manner were reviewed. The SFPUC's Long-Range Financial Plan was also reviewed.



A Blue Ribbon Panel was convened to examine the CIP review prepared by R. W. Beck. R. W. Beck's final report received a very favorable reception from the Blue Ribbon Panel and the \$3.6 billion CIP was approved by the SFPUC Board of Commissioners. Approval to sell bonds to finance the CIP was received from the voters in November 2002. As a result of R. W. Beck's recommendations, a new Assistant General Manager position has been approved and hired, and organizational changes have been implemented. In a May 2002 letter to the PUC, the Blue Ribbon Panel commended R. W. Beck's analysis of the proposed CIP. The letter states, "The Blue Ribbon Panel finds that the R. W. Beck work is very competent, comprehensive, rigorous, accurate and on target for this stage in the program."

Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support of funding
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.

Capital Replacement Planning Study

Owner: Central Arizona Project (CAP)

CAP is a multi-county water conservation district that supplies untreated Colorado River water to the cities of Phoenix and Tucson as well as numerous other municipalities, irrigation districts, and private water companies in central Arizona. The CAP system includes 330 miles of lined canals, pumping plants, underground siphons and tunnels, and a regulatory storage dam and pump generation facility that was completed between 1975 and 1994.

CAP retained R. W. Beck to prepare a capital replacement planning analysis to estimate the future major capital renewal and replacement costs that CAP is likely to face in the future. As a key element of this work, R. W. Beck developed an inventory database of the CAP system facilities, their original and replacement costs, condition assessment, and expected useful lives. This database was organized by type of facility according to repair requirements and expected useful lives for use with R. W. Beck's Replacement Planning Model™ to estimate annual capital replacement funding requirements for a 50-year period. The results of the study were presented to CAP's Board of Directors and were used to help evaluate the adequacy of current capital reserve funds and to assess whether related property taxes and water rates could be reduced. A final report was delivered to CAP in April 2002.



R. W. Beck was retained in 2004 to update the Replacement Planning Model with more recent data and updated assumptions, and to provide training of CAP staff in the use of the Replacement Planning Model. A key strategy of the 2004 update is an expanded role of the client in completing the update. To facilitate the client's long-term use of the replacement planning model, R. W. Beck provided model training up front, so that the client develops the ability to operate and make necessary adjustments to the model.

Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support of funding
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.

Infrastructure Master Plan

Owner: Portland Water Bureau, City of Portland, Oregon

R. W. Beck is managing this \$1 million infrastructure master plan. The purpose of the plan is to address future Bureau issues concerning supply, conveyance and the role the Bureau will maintain or expand within the region as a major water supplier. An extensive planning process was developed to ensure Bureau consensus and involvement in the decision development and the ultimate Capital Improvement Program. We also included regional stakeholders in the planning effort to understand and incorporate their issues and concerns.

The Master Plan will be used as a tool for future contract negotiations with regional water purveyors and also to provide future scenarios to meet changes resulting from growth and regulatory impacts. The project includes development of a capital improvement program, a process for future CIP planning, a decision process for CIP prioritization, and an infrastructure resource model.

Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support of funding
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.

Assessment of Water/Wastewater Infrastructure Capital Costs

Owner: Confidential Client, New Hampshire

R. W. Beck was retained by a Confidential Client to develop a capital improvement plan (CIP) for water and wastewater infrastructure improvements necessary to provide year round service to the landmark Mount Washington Hotel and Resort complex. Our efforts included evaluation of the existing infrastructure, the fast-tracked identification of the necessary improvements, development of a regulatory approval strategy and identification of the technologies that would permit cost effective year-round operation of the water and wastewater utilities in an extreme environment. Detailed estimates of costs of various remedial options were prepared for consideration.



Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support funding.
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.

RATE STUDIES AND FINANCIAL ANALYSIS

Another important consideration for water utilities, particularly in the case of the City of Nashua and the MVRWD, is cost-of-service analyses and rate determination. Naturally, given its utility management consulting pedigree, R. W. Beck offers deep experience in all aspects of rate-making consulting. Some examples follow.

Sewer and Stormwater Rate Study Review

Owner: St. Louis Sewer Rate Commission, Missouri

In 2002, the firm was selected to represent the St. Louis Sewer Rate Commission (the Commission), a newly created Commission consisting of 15 members, to review and recommend changes in sewer rates. As a result of historical controversy and court actions regarding rate setting, among other things, the Commission was created as a result of a voter referendum to make recommendations regarding the rates, charges and fees of the St. Louis Metropolitan Sewer District (the District) and to minimize or eliminate controversy. Prior to creation of the Commission, the rates, charges and fees of the District were established by the Board of Trustees of the District. The District provides sanitary sewer service and stormwater service to approximately 425,000 residential and non-residential customer accounts within an area of approximately 524 square miles, including the City of St. Louis, Missouri and most of the County of St. Louis. The District operates 9 treatment plants that process approximately 320 MGD; maintains nearly 9,000 miles of sewers and 260 pump stations and employs over 800 people. Many of the non-residential industrial customers are large users of sewer service and are "Fortune 500" entities which include aerospace technology, automotive manufacturing and assembly, bottling and brewing, chemicals and medical supplies, to name but a few.

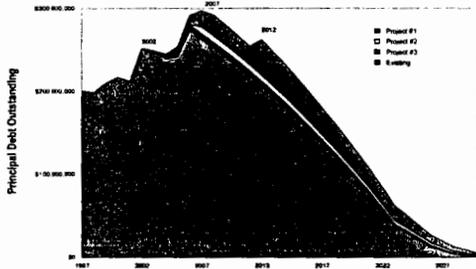
To meet its projected capital needs of approximately \$3.5 billion, the District initiated a financing plan that calls for the issuance of large amounts of indebtedness, subject to approval of local voters, and the raising of user fees (rates). In its filing before the Commission, the District applied for user fee increases that would increase the average monthly bill for a single family residence from 67 percent to 191 percent during a three-year period, subject to the level of indebtedness authorized by the voters. R. W. Beck personnel performed a review of the District's filing to ensure that industry standards were recognized, user fees (rates) were established at reasonable levels and were established equitably among customer classes and customers within a class; and that the goals and objectives of the Commission were being achieved. As a part of the Commission's review of the District's filing, procedural schedules were established, interventions by customers and groups of customers were granted, discovery activities were conducted, testimony was heard and cross examined, and briefs and reports were filed. Unlike many governmental rate setting processes, the Commission's formalized rate setting process provided a structured forum for all parties to be heard and questioned and for a record to be created upon which findings of fact and recommendations can be made.

Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support of funding
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.

User Rate Impact Study

Owner: City of Woonsocket, Rhode Island



R. W. Beck personnel worked with the City to develop a public-private partnership strategy, including a long-term analysis of capital financing options and user rate impacts. R. W. Beck staff led the financial

review of proposal finalists for the long-term DBO engagement and a developed a cost-risk methodology to determine the financial implications of various risk allocations. R. W. Beck personnel also determined the ability of the proposers to provide financial considerations and competitive service fees, while maintaining a stable and affordable user-rate structure.

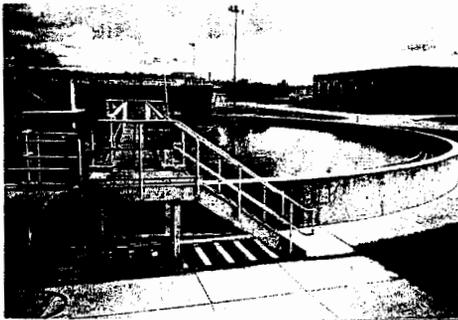
Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support of funding
- Capital Project Implementation
- Project Engineering – Planning, CIP prioritization, design or construction management.

Integrated Financial Planning Model

Owner: City of Tempe, Arizona

R.W. Beck personnel developed a comprehensive financial model for the City of Tempe that integrates the City’s capital improvement program with its budget and revenue management systems. The spreadsheet-based model develops 20-year budget and rate



projections for the City’s drinking water, wastewater, and irrigation systems. The model allows the City to run an infinite number of “what if” analyses to determine the budgetary and user rate impacts associated with alternative capital

improvement programs. The model also facilitates rate sensitivity analyses at the customer class level to determine appropriate rate making policy for the City.

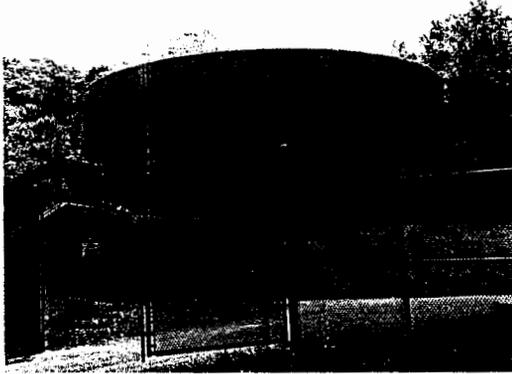
Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support of funding
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.

Water Wheeling Rate Strategy Development

Owner: Metropolitan Water District of Southern California

R. W. Beck personnel assessed the Metropolitan Water District's proposed 'wheeling' (moving) rate methodology. Specific tasks included conducting a comprehensive review of the District's wheeling rate proposal, analyzing the utility's budget, capital improvement plans, existing rate structures, and other documentation in order to deem the rate-setting methodology



appropriate and supportable. The rate methodology was analyzed and reviewed based on general terms of fairness and equity, as well as its ability to recover all fixed and variable costs associated with the wheeling of water through the District's vast distribution system.

Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support of funding
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.

Financial Consulting to Water Utilities

Owner: U.S. Department of Agriculture



Under a contract with the Department's 'Technitrain' Program, R. W. Beck personnel oversaw and provided financial management and rate-setting assistance to more than 200 small water, wastewater, and solid waste utilities. This assistance included the analysis

and modifications of user rate structures for water utilities that were either under regulatory compliance orders; applying for federal financial assistance; or both. Most of these assignments were from the ground up, requiring comprehensive cost-of-service analyses, budget development, infrastructure financing plans, and short-term/long-term rate structure development.

Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support funding
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.

Comprehensive Review of Water and Sewer System Rate Studies

Owner: City of Tallahassee, Florida

Since 1966, the firm has provided consulting services to the state's capital City in the areas of utility rates and utility finance. The City owns and operates a municipal electric generation, transmission and distribution system; a natural gas distribution system; a potable water supply and distribution system; and a wastewater treatment, collection and disposal system. The City provides utility services to customers located inside the City limits and in the surrounding unincorporated urban fringe.



The firm provides consulting services which include advice,

counsel, direction and training to the City for preparation of cost-of-service studies; design of cost-based rates using generally accepted rate-making practices and American Water Works

Association recommendations; development of impact fees recognizing industry practices, regulatory guidelines and judicial rulings; and design of cost-based rates and charges for fire protection service and miscellaneous charges for customer requested services. Additional services performed included the attendance and participation in public hearings and meetings with developers and builders, and the preparation of necessary certificates required by the City's applicable revenue bond resolution.

Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support of funding
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.

Water Rate Study

Owner: Department of Water Supply, County of Maui, Hawaii

R. W. Beck is preparing a comprehensive water rate study for the Department of Water Supply. The study will determine revenue requirements for a five-year study period and will include a cost-of-service study for the test year, fiscal year 2006. In addition, several rate design options will be evaluated including a potential change to customer classes, surcharges for pumping and drought rates.

R. W. Beck will be working closely with several agencies involved in the rate study process including the Department staff, the Board of Water Supply, the County Council, and an ad hoc stakeholders committee.



Relevance to Your Project

- Creation of a new municipal utility
- Contractor Oversight
- Independent Engineer – provided third party validation of utility management in support of funding
- Capital Project Implementation Support
- Project Engineering – Planning, CIP prioritization, design or construction management.

R. W. Beck has chosen to complement its engineering-based management consulting expertise on this project by proposing Tetra Tech as a subcontractor. Based on its considerable directly related experience, Tetra Tech will be responsible for hydraulic modeling and related engineering called for in Task 6 of your RFP and all work associated with Security Planning. Tetra Tech would also be available to assist with other water system engineering that might be required by the client as needs arise.

TETRA TECH, INC.



Tetra Tech, Inc. is a leading provider of consulting, engineering and technical services. With almost 9,000 associates located in the United States and internationally, the company supports commercial and government clients in the areas of resource management and infrastructure. Tetra Tech's services include research and development, applied science and technology, engineering design, construction management, and operations and maintenance.

| Tetra Tech Company Facts |
|--|
| <ul style="list-style-type: none"> ■ Worldwide provider of consulting engineering and technical services ■ 10th largest American engineering firm ■ Employees: Almost 9,000 ■ Revenue: Annually \$1.1 billion |

Tetra Tech provides services to protect and improve the quality of life through responsible resource management and sustainable infrastructure. The company continuously adapts its service to provide for society's changing needs and to meet customer expectations.

Tetra Tech seeks clear sustainable solutions that improve the quality of life. Taking this responsibility seriously, our work often places us at the center of our clients' challenges regarding environment, safety, and sustainability. These challenges involve the opinions of many stakeholder groups from the public, industry, and government who seek our advice on complex issues. To provide solutions to these challenges, Tetra Tech believes in maintaining our technical objectivity, and as a policy, we do not own individual technologies. Tetra Tech will support R. W. Beck in the areas of the project related to facilities engineering, including hydraulic modeling and review of security plans, vulnerability analysis, and emergency response plans.

SECURITY PLANNING AND VULNERABILITY ANALYSIS

Tetra Tech is exceptionally qualified to conduct vulnerability assessments at water utility facilities because our company has expensive experience in the design of such facilities. Tetra Tech is ranked as the 10th largest design firm in the United States and 1st in Water Supply, Treatment and Desalination and Transmission Lines and Aqueducts (*Engineering News Record*, Top 500 Design Firms Sourcebook 2005). Our staff is experienced (and certified where applicable) in the use of various vulnerability and risk methodologies including: the Risk Assessment Methodology for water utilities (RAM-W) and Risk Assessment Methodology for chemical facilities (RAM-CF) developed by Sandia National Laboratories, vulnerability self assessment tool (VSAT), and other methodologies developed by industry groups, DOD, DOE, and private parties.

Since September 11, 2001, Tetra Tech has been assisting numerous water utilities evaluate the risks to the security of water supply systems from potential terrorist actions or other emergency situations, in compliance with the Public Health, Security and Bioterrorism Preparedness and Response Act. This work has been performed for clients such as Boston, Massachusetts; Worcester, Massachusetts; Brookline



Massachusetts; Shreveport, Louisiana; Little Rock, Arkansas; Westminster, Colorado; and, Flagstaff, Arizona, among others. Tetra Tech has performed security assessments following the methodology developed by Sandia National Laboratories.

The following project descriptions are representative of Tetra Tech's in-depth security planning experience with water utilities.

Water Vulnerability Assessment

Owner: Boston Water and Sewer Commission

Tetra Tech performed a water systems vulnerability assessment for the Boston Water and Sewer Commission (BWSC), a large water supplier in Massachusetts that serves a daily population of over 1 million people. The distribution system consists of over 1,000 linear miles of pipe with numerous connections to neighboring towns, all of which are serviced by the Massachusetts Water Resources Authority (MWRA), providing an average of over 80 MGD of water to BWSC's water system. Also included in the assessment were critical MWRA facilities such as pump stations, water storage tanks, numerous interconnections and master meter locations that supply the BWSC system, as well as, the inspection and assessment of a high pressure fire system pump station which serves the downtown. The vulnerability assessment resulted in a summary report documenting the susceptibility of the system to biological, chemical, physical, and "cyber" attack and recommended facilities improvements, modifications to operating and maintenance practices and additional training needs. Tetra Tech also conducted a review of the BWSC's Water Operations Emergency Response Plan resulting in numerous recommendations for additional improvements.

Water System Vulnerability Assessment

Owner: City of Worcester, Water Filtration Plant, Massachusetts

Tetra Tech performed a water systems vulnerability assessment for this large water supplier in Massachusetts. The water system serves a population of 200,000 with a 50-MGD treatment plant. The water system included thousands of linear feet of water main, several water intakes, 10 reservoirs, and several pumping stations. The vulnerability assessment process Tetra Tech followed included: meetings with key water systems staff, review and analysis of plans of the system, and inspection of the system facilities including the control systems. Based on the findings of our interviews, plan reviews, and system inspections, a summary report was prepared documenting our observations regarding the susceptibility of the system to biological, chemical, physical, and "cyber" attack. The report presented recommendations to improve certain facilities and changes in operations and maintenance.

Water System Vulnerability Assessment

Owner: Town of Brookline, Massachusetts

Tetra Tech conducted a water system vulnerability assessment and developed an emergency response plan for the Town of Brookline, which owns and manages a water distribution system that delivers potable water to a population of 60,000. The water system includes two independent distribution systems that are interconnected for emergency purposes. Tetra Tech was responsible for evaluating the Town's distribution system and key components' exposure to potential threats, as well as the infrastructure overall condition to determine the criticality and vulnerability within the system. Phase two of the project included assessing the Town's emergency response readiness and operations and developing an emergency response plan based on the recommendations from the vulnerability assessment.

WATER SYSTEMS PLANNING, DESIGN AND CONSTRUCTION

Tetra Tech completes more water system design work than anyone, according to trade journal, Engineering News Record. Tetra Tech is highly experienced in all aspects of water system engineering, including: water supply, distribution and storage; water system analysis and planning; and water system vulnerability and security assessment.

Table 1-1, at the end of this section, summarizes Tetra Tech's recent water systems experience. Brief project descriptions, which are representative of their water system engineering experience follow.

Comprehensive Review of the Pennichuck Water System

Owner: City of Nashua, New Hampshire



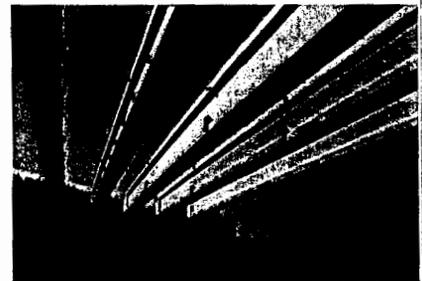
Tetra Tech conducted a comprehensive review of the Pennichuck Corporation, the largest investor-owned water utility holding company in New Hampshire. Pennichuck provides water to the City of Nashua and 22 other communities in southern New Hampshire and Massachusetts. This was a critical evaluation for the City of Nashua because Pennichuck had entered into an agreement to merge with Philadelphia Suburban, also an investor-owned utility company headquartered in Pennsylvania.

The City is concerned about the volume and quality of water available to its citizens and businesses. Tetra Tech is providing the overall project management and is responsible for the assessment of the water supply system, distribution system, safe yield, future supply and demand, capital improvements and watershed management components of this study. The project team is investigating Pennichuck Corporation's assets and liabilities, Philadelphia Suburban, and outlining the regulatory/legal review. Tetra Tech is provided recommendations to the City of Nashua related to possible acquisition of the water company.

Utilities Design and Engineering for the Walnut Hill Water Treatment Plant

Owner: Massachusetts Water Resources Authority

Tetra Tech is providing design and construction engineering services on several components of the 450-MGD Walnut Hill Water Treatment Plant. Services to date have included assessment and design of an alternate water distribution system that will supply potable and fire protection services to Marlborough, Southborough, Northborough and the Westborough State Hospital.



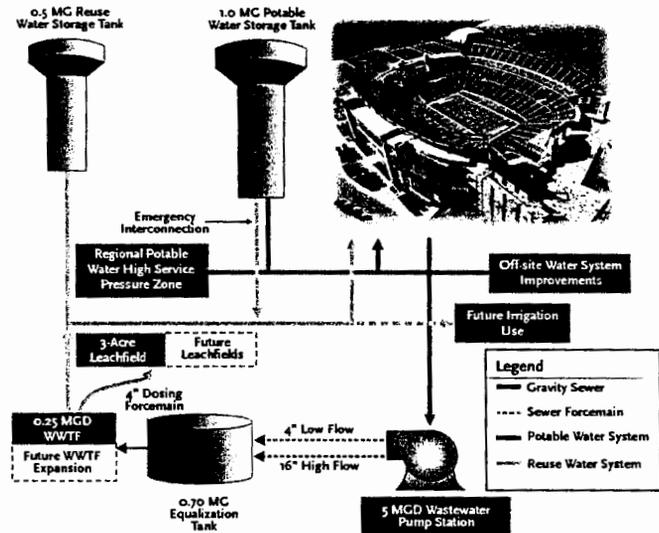
Tetra Tech's water distribution system design provided for five miles of water main ranging from 8 inches to 16 inches, including a bridge crossing. In addition, Tetra Tech conducted a feasibility assessment and designed a temporary 3,500-gpm water booster station to provide the sole source of supply for the Town of Northborough and the Westborough State Hospital. As part of the Walnut Hill project, Tetra Tech also designed a 1,200-gpm sanitary sewer pump station.

Final Design and Permitting, New Football Stadium and Economic Development Complex

Owner: New England Patriots, Foxborough, Massachusetts

Tetra Tech was responsible for the planning and design of an innovative water supply system for the 68,000-seat Gillette Stadium. The water supply improvements include a new 1.0-MGD elevated water storage tank, a water reuse system, approximately 10,000 linear feet of 8- to 16-inch water distribution mains and a groundwater irrigation supply development.

Tetra Tech assessed the existing 0.5 MGD elevated water storage tank at the site and proposed a new 1.0-MGD elevated water storage tank, using a design-build procurement approach. This approach allowed bidders to propose alternative tank designs, which helped determine the most cost-effective solution for the client.



Blue Hills Covered Storage EIR/Conceptual Design Project

Owner: Massachusetts Water Resources Authority (MWRA), Quincy, Massachusetts



Tetra Tech is managing the evaluation of alternatives to provide 20 million gallons of storage for the Southern Low Service Area of the MWRA's Metropolitan Boston water distribution system located at the Blue Hills Reservoir in Quincy. The project includes siting of storage facilities; conceptual design of the storage facilities and three to five miles of large diameter connecting water main; preparation of an Environmental Notification Form (ENF); and Environmental Impact Report (EIR), if required. Tetra Tech's approach to this project will result in a plan that satisfies the MWRA's storage needs and also assures broad

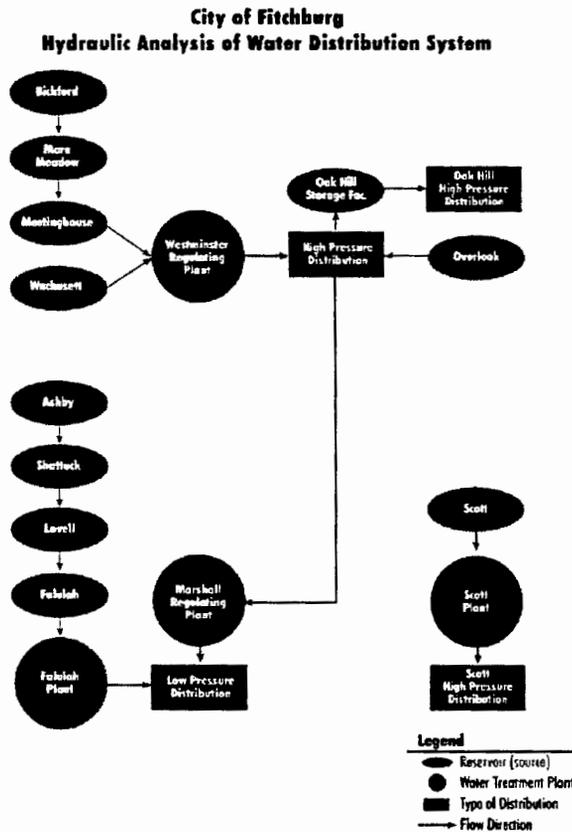
stakeholder acceptance of the project.

Tetra Tech is also providing Owner's Representative services for the proposed design-build procurement of the Blue Hills Covered Storage Project.

WATER SYSTEMS ANALYSIS AND PLANNING

Hydraulic Analysis of the Water Distribution System

Owner: Department of Public Works, City of Fitchburg, Massachusetts



Tetra Tech conducted a hydraulic analysis of the city's complex water distribution system, a multiple source, multiple pressure zone system that serves approximately 40,000 people. The project included population and water user projections for a 50-year planning period, an assessment of the existing water system, an evaluation of alternative sites for new treatment facilities, a computer analysis of the distribution network, and a determination of storage needs, as well as the preliminary siting of facilities.

Using this information, the city was able to identify short- and long-term system requirements and develop an \$11-million, 5-year capital improvement program. Tetra Tech's master planning services included the identification of system modifications that would be necessary if the water supply required filtration, such as construction of a new water treatment plant, water storage tanks, booster stations; and replacement of transmission pipes, as well as pipeline cleaning and lining.

Reuse Plan for the South Weymouth Naval Air Station Base

Owner: South Shore Tri-Town Development Corporation

The South Shore Tri-Town Development Corporation is implementing a Reuse Plan for the South Weymouth Naval Air Station, which is located in the towns of Weymouth, Abington, Rockland, Massachusetts. A consultant team led by Tetra Tech was selected to implement the development program.

Water supply and wastewater infrastructure impact issues will be highlighted in the Draft Environmental Impact Report (DEIR) for the Base Master Plan. These considerations will include:

- development of an overall water budget for the site, balancing the water supply, sewage discharge and stormwater recharge of the development
- creation of measures to reduce water consumption and minimize irrigation requirements
- recycling of treated wastewater (if on-site treatment facility) for non-potable water uses, including irrigation.

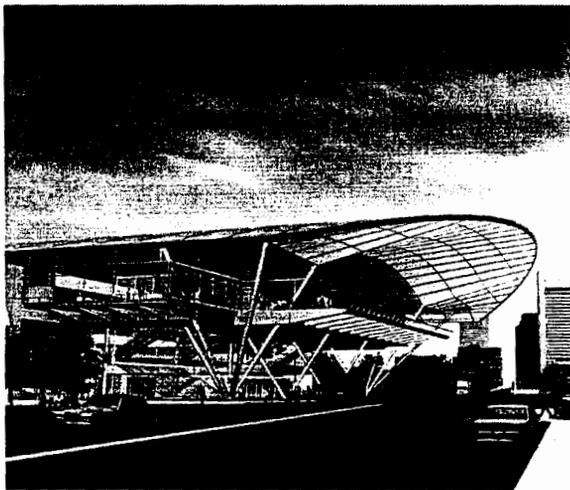


Tetra Tech is committed to securing the permitting, building the infrastructure, and advancing the project on-time; in short -creating value for the property.

Work on the water system planning includes assessment of the existing system and modeling future development scenarios. WaterCad modeling software was used to assess future development scenarios based on a calibrated existing system model. The existing system model was developed from distribution system maps and pressure and flow data collected from hydrant flow data.

Infrastructure/Utilities Services for the Boston Convention and Exhibition Center

Owner: Massachusetts Convention Center Authority



Under subcontract to HNTB/Rafael Vignoly Architects, Tetra Tech provided infrastructure planning, permitting, design and construction-related services for the \$700-million convention center.

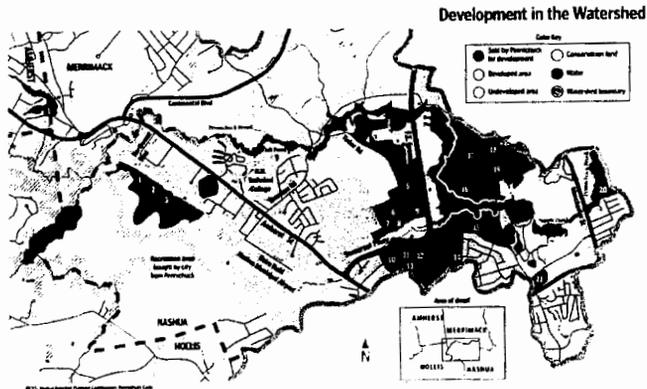
Tetra Tech designed the convention center's on-site water, stormwater and wastewater utility systems. Utilities include relocation of a large-diameter potable water transmission main, separation of combined sewer systems adjacent to the project, and construction of a 72-inch storm drain and outfall to handle drainage from the facility's 40-acre roof – the largest roof structure in New England. Tetra Tech was responsible for hydraulic modeling, detail design and preparation of construction bid packages and construction services for these improvements.

WATERSHED AND WATER RESOURCE MANAGEMENT AND PROTECTION

Tetra Tech has provided watershed resources planning support to public and private sector clients throughout the United States since 1966. Tetra Tech's reputation as national leaders in the water resources arena was solidified in the early 1980's when they established the Water Resources Center (Center) and were awarded the first in a series of national watershed assessment and management contracts with USEPA's Office of Water. For over 20 years the Center has been USEPA's prime contractor in support of their watershed and water quality programs. In addition to their national role in researching and developing watershed management tools and practices, the Center has been asked by other federal agencies (e.g., Army Corps of Engineers), more than 40 states, and numerous local and municipal to provide technical assistance in designing and implementing watershed management programs and plans for their waters. In response to these requests, Tetra Tech's Water Resource Center has grown from a core staff of 40 professionals in 1992 to more than 300 professional scientists and engineers in 2005.

Tetra Tech has been able to recruit and retain national experts in all facets of watershed and water quality studies. Their ability to encourage these experts to retain largely project-based technical roles ensures that our clients get what they pay for and that our staff is mentored by the best in the business. As an example, Dr. Leslie Shoemaker has been with Tetra Tech for 14 years. Dr. Shoemaker is a nationally recognized expert in watershed management and water resources modeling and her advice is oft-requested by public and private entities across the United States. For example, in 2002, when a large

group of academic researchers based at the University of California at Davis, along with federal and state agencies, were looking for help to identify and design an integrated approach to developing planning level models and a watershed plan for Lake Tahoe, they specifically requested Dr. Shoemaker's



Tetra Tech's Water Resources Center is the recognized leader in Watershed Protection by USEPA.

involvement and advice. Dr. Shoemaker is currently leading a team of modelers and scientists (including Tetra Tech staff) as they develop a highly innovative and visible watershed-planning model that will be used to plan future activities in the watershed.

Our professional experience has resulted in an unmatched knowledge base built from our direct involvement in many related projects and key watershed management components. This comprehensive knowledge base provides the resources and technical foundation for an effective evaluation of any existing or proposed water resources protection program for the community-owned water utility in Nashua.

The following summarizes some of our key technical experience in resource management and protection planning:

- **Watershed Management.** Watershed management is the organizing framework promoted by USEPA, U.S. Army Corps of Engineers, and other federal and state agencies. We have supported USEPA's writing and training on the guiding principles of watershed management and the technical procedures needed to implement it. Recently we wrote the new Watershed Handbook for USEPA, that provides detailed guidance on watershed management procedures, technical analysis, and implementation and tracking. In addition, the guidance explains how to comply with the nine elements of USEPA's recently released 319 guidance.
- **Forest Management.** We have evaluated the impacts of forest harvest, forest fires, and forest road management on water quality conditions for such high profile watersheds as Lake Tahoe. Though our involvement in developing the forestry guidance for the Nonpoint Source Program, we maintain an inventory of the latest research into management techniques and effectiveness.
- **BMP Tools.** We have also developed tools to assess management practices, in more detail than the traditional percentage reductions used in so many studies. The Integrated Stormwater Decision Support Framework (ISMDSF), funded by the USEPA ORD NERL Edison Laboratory, provides a new technique for predicting the impact of management on a watershed scale. This system allows us to evaluate changes in hydrology and pollutant loading by modeling the physical features of management practices. This integrated decision-support system provides the needed link between management action, source loading, stressors, and water quality endpoints. Ultimately this system will provide tools to optimize watershed management activities to meet identified water quality goals.

The following are sample watershed management planning projects for protection of water supplies. All of these projects are fundamentally based on watershed protection strategies that include protection and restoration of environmental resources.

Watershed Protection Plan

Owner: Massachusetts Water Resources Authority, Boston, Massachusetts

Tetra Tech completed watershed protection plans for the watersheds of the Wachusett and Quabbin Reservoirs, and the Ware River, which supply drinking water to more than 2.5 million people in the Boston Metropolitan Area. The goal of this project was to develop a comprehensive program to assist the MWRA and MDC in complying with the USEPA Surface Water Treatment Rule. The project characterized the watersheds and identified and prioritized existing and potential threats to water quality. It also involved an assessment of the relative severity of these threats and the development of protection plans to prevent future contamination of the water supplies. The final plans contained prioritized, comprehensive strategies to protect the watersheds, including local initiatives, increased staffing, stringent monitoring of water quality, structural controls, and the acquisition and/or further protection of sensitive watershed lands. The project required coordination with federal, state, regional and local agencies, as well as the 26 watershed communities. The plans were instrumental in USEPA's landmark decision to grant the MWRA a bare waiver from the filtration requirement of the Surface Water Treatment Rule (SWTR) under the federal Safe Drinking Water Act (SDWA).

Protection and Management of Water Supplies

Owner: Orange Water and Sewer Authority, Carrboro, North Carolina

Tetra Tech has conducted five projects for OWASA supporting protection or management of their water supplies for the Towns of Chapel Hill and Carrboro. Work has included a watershed management study for each primary drinking water supply (reservoir and watershed data analysis; linked watershed and lake response modeling; buildout analyses; evaluation of best management measures); stakeholder facilitation and outreach for the Cane Creek Reservoir planning effort; development of a targeted land acquisition model for the Cane Creek watershed; evaluation of the causes of increased treatment problems due to raw water quality and the opportunities for inflake management; and a compilation of public comment on acquisition of an active quarry for additional water supply storage.

Watershed Protection

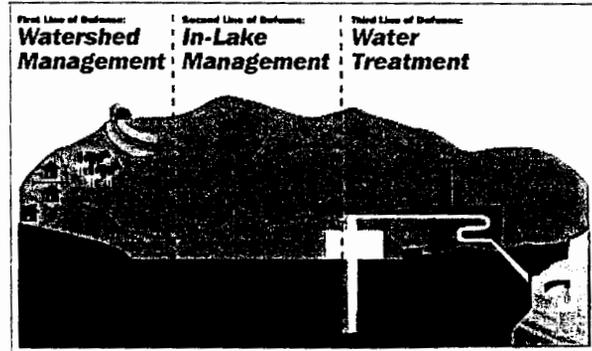
Owner: Land Use and Environmental Services Agency, Mecklenburg County, North Carolina

Tetra Tech has conducted three projects for Mecklenburg County supporting watershed protection including downstream water supplies. Work has included HSPF and SWAT watershed modeling, HEC1-HECRAS modeling, stream channel stability risk assessment, build-out analyses, evaluation of existing regulations, low impact development (LID) design examples and outreach, BMP evaluation, design performance standard evaluation, development and application of a Site Evaluation Tool (SET), cost analysis of alternative management options and scenarios, stakeholder facilitation, and ordinance and design manual consultation.

Cane Creek Reservoir Watershed Assessment and Management Planning

Owner: Orange Water and Sewer Authority (OWASA)

Tetra Tech staff conducted a comprehensive watershed and water supply protection study for the Cane Creek Reservoir, and assisted the Orange Water and Sewer Authority (OWASA) in developing a management plan for the resource. Working with a 22-member stakeholder advisory committee, Tetra Tech staff identified key indicators linked to multiple management objectives addressing public health, water quality, aesthetics, economic considerations, recreation, and community character. Existing water quality and supporting data were compiled and analyzed to characterize watershed conditions. The assessment provided a baseline for existing water quality conditions, and helped identify water quality parameters of greatest interest. Additionally, recommendations were provided to OWASA to streamline its watershed and lake water quality monitoring program.



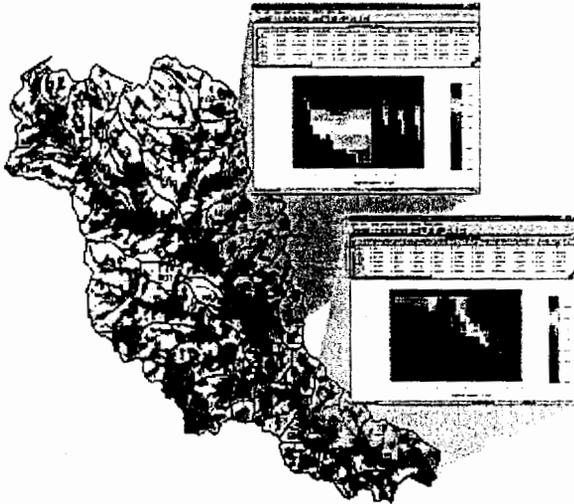
Tetra Tech developed a comprehensive linked land use - watershed loading - lake response modeling framework to assess impacts of alternative management scenarios for specified indicators. The models were applied to future land use conditions forecast for build-out and 25% of build-out under various zoning and best management practice scenarios.

A facilitated process using the modeling framework and stakeholder advisory committee input produced four viable management scenarios containing different mixes of best management practices, zoning restrictions, land purchase and protection by the utility, and engineered stormwater controls. Tetra Tech then designed and produced community outreach materials to communicate management alternatives under consideration, and encourage public response. A ballot was designed for OWASA to compile public input effectively, and help in establishing the preferred plan.

Follow-up work has included developing criteria for targeting land for acquisition by the utility, and providing additional technical support in analyzing management options.

Watershed Modeling and Management for Patuxent Reservoirs Watershed

Owner: Washington Suburban Sanitary Commission and Prince George's County, Maryland



Tetra Tech has provided comprehensive water quality assessment and modeling support for more than 5 years to aid the Washington Suburban Sanitary Commission (WSSC), Maryland Department of the Environment, and local municipalities (Prince George's, Howard, and Montgomery Counties) in watershed planning and protecting water quality in two drinking water supply reservoirs. Tetra Tech developed a watershed action plan and a monitoring database, and subsequently a dynamic, linked watershed and reservoir modeling system.

Tetra Tech's developed a comprehensive model that simulates hydrologic and water quality conditions throughout the watershed. The model represents hydrodynamic and water quality response in two reservoirs, the main stem river, and major contributing tributaries. Tetra Tech developed and calibrated reservoir models for the T. Howard Duckett (Rocky Gorge) and Triadelphia Reservoirs. Objectives of the reservoir modeling effort included: (1) simulate hydrodynamics and water quality constituents in multiple dimensions, (2) assess the potential for eutrophication, (3) estimate the reservoirs' assimilative capacities for pollutants impacting DO and eutrophication, and (4) use the linked watershed-reservoir modeling system to evaluate holistic management alternatives, including current, past, and future conditions. Results from this modeling effort and the models themselves will be used for regional water quality assessment, watershed and resource management, source water protection, and TMDL development by WSSC, the state, and municipalities.

TABLE 1-1

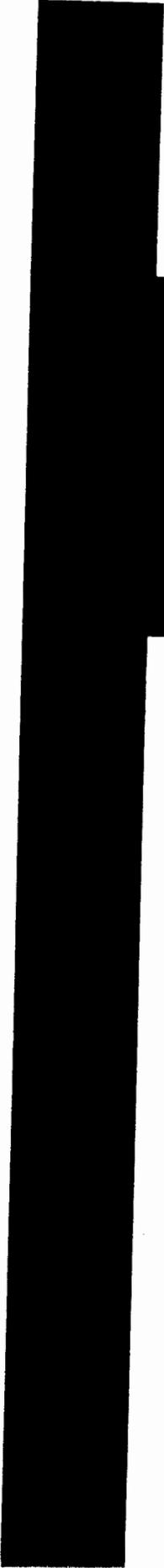
Tetra Tech, Inc.
Select Water Treatment
and Distribution Experience

| Client | Water Distribution Modeling | Water Distribution Design | Storage and Booster Pump Stations | Water Treatment Evaluation | Water Treatment Design | Water System CIP | Economic Analysis | Permitting | Pilot Studies | Construction Administration | Operator Training |
|--|-----------------------------|---------------------------|-----------------------------------|----------------------------|------------------------|------------------|-------------------|------------|---------------|-----------------------------|-------------------|
| Pennichuck Water System, Nashua, NH | | | | ✓ | | ✓ | ✓ | | | | |
| MA DPW, Fitchburg, MA | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| MWRA, Marlborough, MA | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| New England Patriots Foxborough, MA | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| MWRA Quincy, MA | ✓ | ✓ | ✓ | | | | ✓ | ✓ | | ✓ | |
| South Shore Tri-County Development Corp., South Weymouth, MA | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| MA Convention Center Auth., Boston, MA | ✓ | ✓ | | | ✓ | | | ✓ | | ✓ | |
| Woodbridge Booster Station, Ashland, MA | | | | | ✓ | | | ✓ | | ✓ | |
| Boston Water and Sewer Commission, MA | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | | ✓ | ✓ |
| City of Edgewater, FL | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| City of Lakeland, FL | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| City of Miramar, FL | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| City of Naples, FL | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| City of North Miami Beach, FL | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| City of Palm Bay, FL | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| City of Port St. Lucie, FL | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Detroit, MI | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Milwaukee, WI | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Ypsilanti, MI | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Washington, D.C. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |



| Client | Water Distribution Modeling | Water Distribution Design | Storage and Booster Pump Stations | Water Treatment Evaluation | Water Treatment Design | Water System CIP | Economic Analysis | Permitting | Pilot Studies | Construction Administration | Operator Training |
|--|-----------------------------|---------------------------|-----------------------------------|----------------------------|------------------------|------------------|-------------------|------------|---------------|-----------------------------|-------------------|
| Warren County, OH | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| Atlanta, GA | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Lexington, KY | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Cincinnati, OH | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Sand Springs/Sapulpa, OK | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| City of Bartlesville, OK | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Kent County Water Authority, RI | ✓ | ✓ | ✓ | | | | | ✓ | | ✓ | |
| City of Broomfield, CO | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Castle Rock, CO | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | | ✓ | |
| Centennial Water and Sanitation District, CO | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | | ✓ | |
| San Diego County Water Authority, CA | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| City of Los Angeles, CA | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |





2

SECTION 2 PERSONNEL

R. W. BECK PROVIDES NASHUA SPECIALIZED EXPERTISE TO FACILITATE TRANSITION TO PUBLIC OWNERSHIP AND OPERATIONS

R. W. Beck specializes in providing the engineering-based management consulting services needed to provide contractor oversight and related planning, organizational development, financial analysis, and economic feasibility consulting associated with the creation of a new community-owned water utility, such as is in process in greater Nashua.

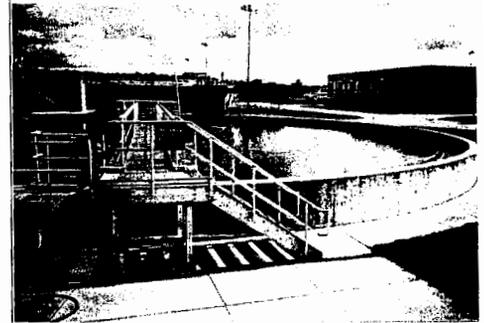
Our Team. R. W. Beck proposes on this project in association with Tetra Tech, one of the largest and most qualified water engineering companies in the world. Key staff from Tetra Tech will support R. W. Beck in the areas of water system engineering, security, and construction management.

The R. W. Beck team of individuals shown in the proposed Organizational Chart on the following page, provides the City and MVRWD with the full range of skills and expertise needed to effect a smooth utility ownership transition from private to public. On average, each of these staff members brings more than 20 years of experience in the planning, design, management, operation and maintenance of water utility systems throughout the United States. The organizational structure has been crafted to address the specific requirements of the oversight services as outlined in your RFP. In addition, we have committed additional staff with expertise in areas that will add value to the City and MVRWD, as you consider expansion of the system beyond the initial acquisition of PWW.

Local Presence. Our Project Manager is a committed and concerned neighbor. Paul Doran, P.E., a long-time resident of Hollis, New Hampshire, raised his family locally and ran an engineering business in Nashua for many years. So, Paul is very familiar with the institutional, political, and regulatory aspects of managing utilities in New Hampshire. More important to the City and MVRWD, Mr. Doran is a recognized industry leader in contract oversight, having spent much of his 30+ year career overseeing operations contractors and managing oversight contracts for major water utilities around the country. In fact, he has been involved in this line of work since the earliest privatized municipal operations contracts. As you will read in the letters of reference included in Appendix A of this proposal, Mr. Doran is highly commended by his past contract oversight clients. He will work from our office at 889 Elm Street, in Manchester and will be readily available to you at any time, day or night.

Sensitive to the critical importance of effective intergovernmental relations to the creation and commissioning of the community-owned utility, our project team includes several important New Hampshire thought leaders,

The R. W. Beck team of municipalization specialists and experienced public servants will help get the new community-owned utility broadly accepted at the least cost.



“Working with Mr. Doran, I found him to be proficient in the many complexities of private operations and maintenance services, in the technical and engineering aspects of operations and highly responsive in serving the needs of the Bureau of Water.”

*Kenneth R. Skov
Superintendent of Water
City of Waterbury, CT*

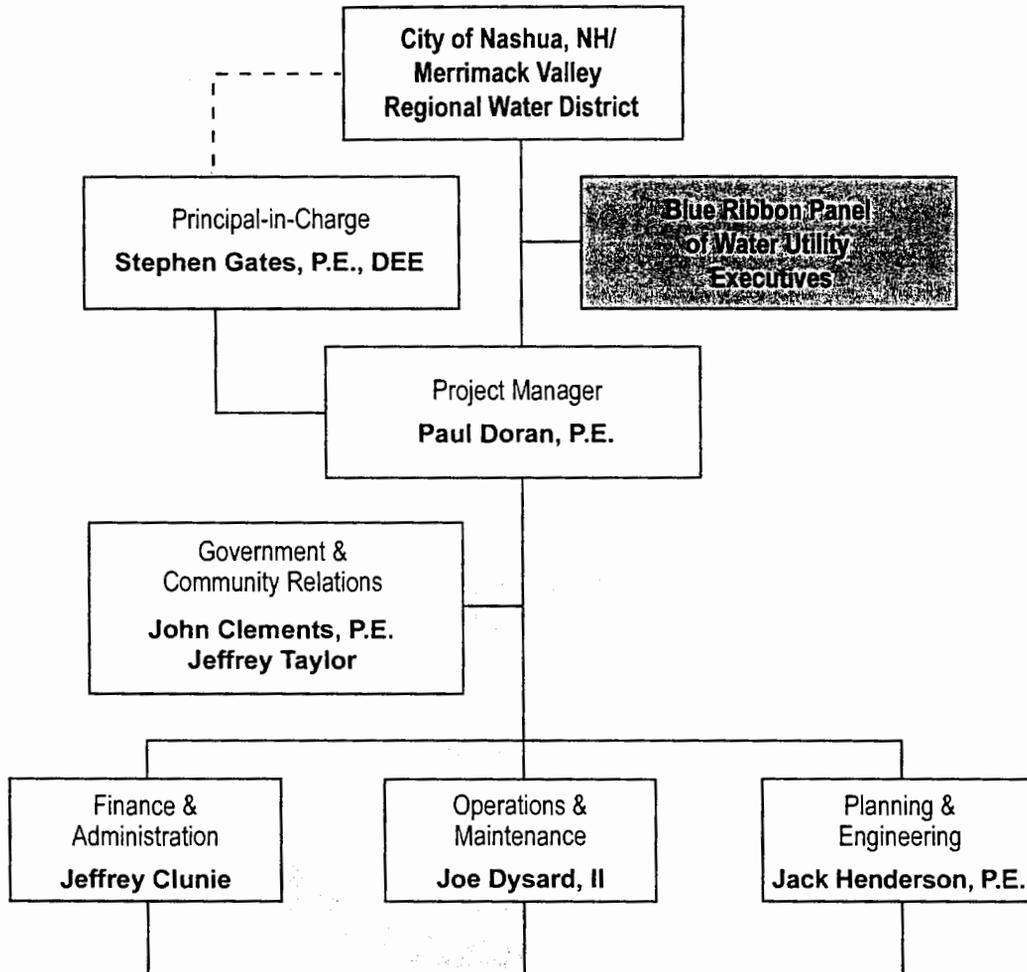


SECTION 2

with many years of experience as public servants in local, state and federal government: John Clements, former New Hampshire Commissioner of Public Works and Highways; and Jeffrey Taylor, former Director of the New Hampshire Office of State Planning. Their collective knowledge, insight, integrity and effective working relationships at all levels of government could be invaluable to the City and MVRWD, particularly regarding regulatory compliance and grant funding.

Blue Ribbon Panel. R. W. Beck also suggests that the City consider creating a Blue Ribbon Panel, composed of senior executives from regional water authorities around the country, who have been active participants in the creation of their regional water utilities. The Blue Ribbon Panel would meet with the City and MVRWD leaders periodically (e.g., semi-annually) to share lessons learned from their utility start-up experiences. Each meeting agenda would focus on current, pressing issues that the new utility might wish to seek advice on. Other major water utilities have used similar Blue Ribbon Panels with good success to help their leadership address a variety of priority issues; taking advantage of the experience of their peers. We have had preliminary discussions with executive level staff at the South Central Connecticut Regional Water Authority; Tampa Bay Water; and the Newport News Water Authority. All parties have expressed serious interest in assisting your new community-owned utility in greater Nashua get started. R. W. Beck could approach other utility executives, if the City and MVRWD were interested in creating a Blue Ribbon Panel for advice and support.

R.W. Beck's Independent Engineering Team Specializes in Water System Management and Contractor Oversight



Technical Support

RFP Scope

- James Huiting - Security
- Ian Catlow - Hydraulic Modeling
- Richard Sperandio - Construction Management

Supplemental Services if Required

- Neil Callahan - Procurement
- Ed Watzel, Ph.D., P.E. - Regionalization
- Dave Jochim - Strategic Planning
- Kyle Rhorer - Business Modeling
- Ed Ionata - Permitting
- Andy Woodcock, MBE, PE - Asset Evaluation
- Jeff McGarvey - Cost of Service / Rates
- Nathan Zill - Grants & Loans
- Leslie Shoemaker, Ph.D. - Water Resources Management

Legend: Optional Services

**Water Utility Oversight Services
Table of Organization**



SECTION 2

The following pages summarize the relevant experience of the individuals proposed for this assignment. Complete resumes can be found in Appendix B of this proposal. The project team will work under the direction of the Project Manager, who will call upon the team resources as needed throughout the course of this engagement.

Stephen Gates, P.E., DEE **Role: Principal-in-Charge**

Steve Gates, who recently joined R. W. Beck as a Client Services Director for the Boston Office Water/Waste Practice, has 29+ years of environmental engineering experience providing program management, management consulting, facilities planning, detailed design and construction management for a wide variety of environmental engineering projects throughout Northeastern United States and Canada. He has successfully managed, planned, and designed construction of environmental facilities for public and commercial clients valued well over US\$2 billion. He has worked for a variety of regional authorities, including the Massachusetts Water Resources Authority; the Regional Municipality of Ottawa; the South Central Connecticut Regional Water Authority; and the South Florida Regional Water Management Authority.

Key Strengths

- Over 29 years environmental engineering experience
- Planned, designed, and managed environmental engineering projects for public and private clients valued over US\$2 billion
- In-depth experience in alternative project delivery methods
- Directed a wide array of projects for federal, municipal and county governments

In his role as Principal-in-Charge, Mr. Gates is responsible for ensuring that the appropriate resources needed by the City are dedicated to you, and made available in a timely fashion. He is also responsible for assuring a high level of quality on all work products.

Paul Doran, P.E. **Role: Project Manager**

Paul Doran is a Senior Water Consultant in the National Owner Advisory Services Practice of R. W. Beck. Having over 30 years of consulting experience in sanitary, environmental and general civil engineering, Mr. Doran has managed numerous major projects in municipal water supply, treatment, storage and distribution systems. His experience covers all facets required by Nashua, including planning, design, management and operations. Mr. Doran has significant, specific oversight consulting experience with various types of public/private partnerships throughout New England. For example, after assisting the City of Taunton with the procurement of a Design/Build/Operate (DBO) contractor for their treatment plant expansion, he provided contract oversight services for the first seven years of operations following project completion. Mr. Doran has also served as project manager for operations contractor oversight in Plymouth, MA; for the Upper Blackstone Water Pollution Abatement District, Millbury, MA; Stockton, CA; Lee, MA; Waterbury, CT; and Sioux City, IA.

Key Strengths

- 30 plus years consulting experience in civil and environmental projects
- Innovative procurement/oversight of DB and DBO Alternative Project Delivery methodologies
- Extensive experience in Owner's Independent Engineering Reviews of Water/Wastewater Utilities
- Project Manager on 7 water utility operations oversight projects
- Contributing Author on 7 private operation and maintenance contracts

As Project Manager, Mr. Doran will serve as the day-to-day contact with the City for the R. W. Beck team and will perform the majority of the work associated with oversight of the water utility operations contractor. As a resident of Hollis, New Hampshire for over 20 years, he is intimately familiar with the

institutional, political, and regulatory aspects of managing public utilities in New Hampshire. In addition, the Doran Family is firmly established within the community, attending Nashua schools and working in the Nashua hospitals. His physical proximity to Nashua makes him instantly available to meet with staff, Council or board members, and attend public meetings whenever needed.

John Clements, P.E. **Role: Government and Community Relations**

John Clements is a 40-year professional, having played a significant role in several private, governmental and trade organizations in New Hampshire. He is intimately familiar with community relations issues in New Hampshire, having served as State Commissioner of Public Works and Highways; Associate Administrator of the Federal Highway Administration; Board Member for the New Hampshire Business and Industry Association; New Hampshire Business Development Corp., and the New Hampshire Industrial Development Authority.

Key Strengths

- Experienced public servant
- 35 years working with local communities throughout NH
- Credible spokesperson for government

Mr. Clements' assignment is to support the City in their efforts to gain widespread public acceptance for the acquisition and subsequent operation of the PWW system. In addition, he can assist the MVRWD in assessing public reaction and developing communications strategies surrounding future system expansion.

Jeffrey Taylor **Role: Government and Community Relations**

Jeffrey Taylor has a distinguished 31-year career. He has exceptional strong skills in: conceptual abilities, coupled with experience in practical applications; ability to lead group discussions, and to keep all focused on the task at hand; extensive experience in economic development and related land use planning issues; and able to foster inter-disciplinary communication. Mr. Taylor was the Director of the New Hampshire Office of State Planning and throughout the years has had extensive dealings with state agencies.

Key Strengths

- 31+ years in public service
- Served in New Hampshire politics for many years
- Respected consensus builder on vital public issues

Mr. Taylor's assignment is to support the City in their efforts to gain widespread public acceptance for the acquisition and subsequent operation of the PWW system. In addition, he can assist the MVRWD in assessing public reaction and developing communications strategies surrounding future system expansion.

Jeffrey Clunie

Role: Finance and Administration

Mr. Clunie's areas of specialization include project development, vendor procurement, contract negotiations, risk assessment, and the preparation of consulting engineer's reports used in the financing of infrastructure projects. Mr. Clunie has served as the Project Manager for the preparation of more than 70 Independent Engineer's Reports used in the issuance of more than \$7.0 billion of revenue bonds. The size of the financings has ranged from \$7 million to \$370 million. He understands potential investors' concerns regarding technology, environmental, contractual and financial issues. As part of his responsibilities during preparation of these reports, Mr. Clunie has made numerous presentations to the rating agencies and bond insurance companies.

For Nashua, Mr. Clunie is available to ensure that future capital needs can be funded through revenue bond issues, and that the rate structure is appropriate given the operating expenses and debt service.

Key Strengths

- Over 30 years of consulting experience
- Oversaw over 100 infrastructure projects for public and private clients
- Prepared over 70 Independent Engineering Reports
- Issuance of more than \$7.0 billion of revenue bonds

Joe Dysard, II

Role: Operations and Maintenance

Joe Dysard is a Senior Director in R. W. Beck's Infrastructure Practice with over 32 years of experience in the water and wastewater industry. Prior to joining the firm in 1996, he spent over 25 years with a major investor-owned water utility holding company. While with the investor-owned water utility holding company, Mr. Dysard spent seven years as President of various companies under his direction in seven states. Mr. Dysard specializes in utility operations management, strategic planning, acquisitions and mergers, organizational restructuring, public/private/partnerships, and contract management.

Mr. Dysard will assist the Project Manager with reviewing the activities of the O&M contractor, including maintenance plans, staffing, operational procedures, plant performance, vulnerability and emergency response plans, billing system and customer relations programs.

Key Strengths

- Over 32 years of utility management experience in the water and wastewater industry
- Liaison for over 30 infrastructure projects
- Managed operation of 81 water systems in 15 states
- Specializes in utility operations management

Jack Henderson, P.E.

Role: Planning and Engineering

Jack Henderson has more than 20 years of experience in the planning, process evaluation, design, construction and start-up of water treatment and transmission facilities. He has also completed numerous water supply investigations, distribution system models, and design of storage and large diameter transmission and pumping facilities for the Massachusetts Water Resources Authority and other local agencies.

Mr. Henderson role will be to support the Project Manager on engineering tasks such as facilities condition assessment, hydraulic modeling, security planning, plant performance, construction coordination and CIP review.

Key Strengths

- 20 years experience in water system design/evaluation and construction
- Knowledge of local/national regulatory issues
- Expertise in distribution system modeling

James Huiting, P.E.

Role: Security

Mr. Huiting has more than 23 years of experience in the civil and environmental engineering field, with a strong emphasis on hands-on water resources engineering and project management. Mr. Huiting has supplemented his engineering background with education and project experience in vulnerability analysis, emergency action plans, information technology (IT) applications, and grant applications. In addition to vulnerability and assessment projects, Mr. Huiting brings substantial experience in civil and environmental engineering: planning, design, and construction of water-resources infrastructure, regional planning, computer applications, and general project management.

Key Strengths

- 23 years experience in civil and environmental engineering
- Extensive experience in vulnerability analysis and emergency action plans
- Expertise in grant applications

Mr. Huiting will support the Project Manager on related security plan review and security planning.

Ian Catlow

Role: Hydraulic Modeling

Mr. Catlow is responsible for civil and environmental engineering design tasks, including the design of sanitary and storm sewers, groundwater modeling, and hydraulic modeling.

He has considerable experience working with public and private entities. A comprehensive listing of projects where he has used his expertise in hydraulic modeling are as follows: Boston Water and Sewer Commission; Massachusetts Convention Center Authority; Town of Southbridge, Massachusetts; City of Waltham, Massachusetts; Boston Water and Sewer Commission; The Rivers School Weston, Massachusetts.

Key Strengths

- Civil Engineer
- Extensive experience in hydraulic modeling projects
- Expertise in both civil and environmental engineering design tasks

Mr. Catlow responsibilities will support the Project Manager on hydraulic modeling tasks.

Richard Sperandio

Role: Construction Management

Mr. Sperandio is a Vice President with Tetra Tech, Inc. With 30 years of experience, he has been involved in a variety of program management and construction management projects, as well as numerous projects involving the planning, design and construction of commercial, municipal, and military facilities, airfields, runways, taxiways, aprons, roads, and infrastructure involving water distribution and treatment, wastewater collection, pumping and treatment, and stormwater systems.

Key Strengths

- 30+ years of experience
- Extensive project experience involving construction management
- Expertise in program management and procurement

Mr. Sperandio also has extensive experience in procurement including preparation of contract scope of work documents, management of subcontractors, and change orders.

Mr. Sperandio's responsibilities will support the Project Manager on construction administration and oversight.

ADDITIONAL TEAM MEMBERS PROVIDE TECHNICAL SUPPORT AS NEEDED

As an engineering-based management consultant with deep experience in the creation and management of utilities, R. W. Beck has a variety of subject-matter experts that the City of Nashua may wish to call upon to supplement its available resources as the community-owned utility is created. The following is representative of additional staff expertise R. W. Beck in association with Tetra Tech could make available to the City and the MVRWD should special needs arise in the future, which are beyond the oversight contractor's scope of work as currently conceived.

Neil Callahan

Role: Procurement

- Participated as Project Manager or Senior Operations Consultant in over a dozen major Public/Private Partnership procurements in nine states, Canada, the Caribbean and Mexico.
- Project Manager for procurement and continuing oversight services on 60 MGD Surface Water Treatment Plant for Tampa Bay Water.
- Assisted Tampa Bay Water with procurement, contract negotiations, design review, construction and operations oversight on correction of 25 MGD seawater desalination facility.
- Feasibility evaluation of 50 MGD seawater desalination facility for San Diego County Water Authority, including contract evaluation, risk assessment, project costs and energy concerns.

Ed Wetzel, Ph.D., P.E.

Role: Regionalization

- Conducted over 20 due diligence investigations and negotiations for purchase of private utilities by government. Acquisitions have involved negotiated settlements and condemnation, with settlements ranging from \$3 million to \$136 million.
- Assisted in the creation and implementation of the Seacoast Utility Authority and the Florida Governmental Utility Authority, supported by revenue bond issues of \$65 million and \$460 million, respectively. Required preparation of bond reports and presentations before bond rating agencies.
- Conducted numerous Master Plans for several large regional water systems.

David Jochim, P.E.

Role: Strategic Planning

- Has more than 30 years of consulting experience associated with planning and implementation of large capital facilities for public water systems.
- Has developed over a dozen water system master plans, provided oversight and QA/QC to large capital improvements programs up to \$3.6 billion.
- Helped develop strategic and business plans for water agencies throughout the United States.
- Adept at meeting facilitation and incorporating diverse stakeholder interests into a finished work product.

Kyle Rhorer, MBA

Role: Business Modeling

- Over 16 years of experience, specializing in the areas of strategic planning, capital financing, financial management and controls, and the development of public-private partnerships for utility infrastructure.
- Worked with the City of Woonsocket, Rhode Island to develop a public/private partnership strategy, including long-term analysis of capital financing options and user rate impacts.
- Developed a comprehensive financial model for the City of Tempe, Arizona, integrating the capital improvement program with their budget and management systems. Resulted in a 20-year budget and rate projection for the City's water, wastewater and irrigation systems.

Edward Ionata

Role: Permitting

- Specializes managing all facets of project management, including permitting and construction.
- Expertise includes fast-track and design-build delivery methods.
- Extensive experience directly managing multi-disciplinary public and public-private partnership projects.

Andy Woodcock, MBA, P.E.

Role: Asset Evaluation

- Special expertise in due diligence investigations, utility valuations, financial feasibility analyses and business plans.
- Participated in over 60 water and wastewater utility system valuations and acquisitions throughout the eastern United States.

Jeff McGarney

Role: Cost of Service / Rates

- Developed procedures and supervised the preparation of extensive computer models for utility rate studies, financial control, data retrieval and analysis, financial feasibility studies, and capital financing alternatives.
- Conducted rate and cost-of-service studies for over two dozen utilities.
- Numerous presentations of his rate investigations and financial feasibility analyses to bond insurers and rating agencies.

Nathan Zill

Role: Grants and Loans

- Preparation of grant applications and grant amendments on behalf of municipalities for funding from State and Federal agency programs.
- Assisted with State Revolving Loan Fund submittals for two dozen clients.
- Prepared project plans for six communities regarding the new Drinking Water Revolving Fund (DWRF) Loan.

SECTION 2

Leslie Shoemaker, Ph.D. **Role: Water Resources Management**

- Nationally recognized expert in watershed management
- Developed watershed management plan for Lake Tahoe—politically sensitive and high profile.
- Lead author of the USEPA Model Compendium for Watershed Assessment.
- Completed numerous watershed management and reservoir protection plans for water utilities nationwide.

Please refer to Appendix B for the detailed resumes of the R. W. Beck project team.

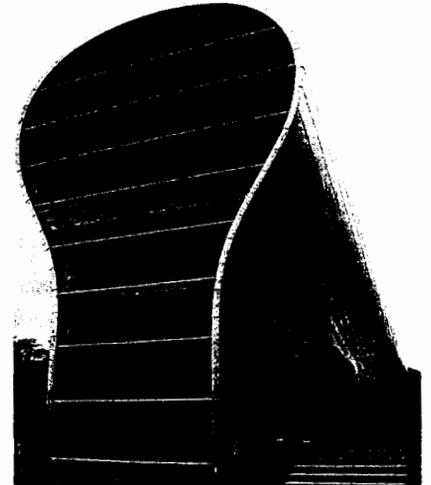
INTRODUCTION

The City and MVRWD are engaged in a lengthy and complicated process to create a Community-Owned Water Utility to provide potable water and fire safety to the people greater Nashua. For over 60 years, R. W. Beck has specialized in the engineering-based management consulting services associated with municipal utility creation. The figure on the following page summarizes the sequence of the key steps in municipal utility creation. The City and MVRWD are at least halfway along the pathway for creating the desired Community-Owned Water Utility. Yet, many critical challenges remain before the new utility becomes operational. Most notably, the City and MVRWD have yet to complete proceedings related to utility purchase, securing the water supply, detailed planning for operations and arranging needed funding.

Over the past several years, City leaders have invested a significant amount of time, money, and political capital in the municipalization program. Facing additional obstacles ahead, the City and MVRWD need an oversight contractor seasoned in the business of establishing municipally-owned, private water services. R. W. Beck is well grounded in the specialized expertise associated with Community-Owned Water Utility creation, and is fully prepared to accept the challenges facing the City and MVRWD during initial acquisition of the assets of PWU and subsequent water system operation by a contract operator.

We have assembled a highly capable project team, with a proven track record as an owner's advisor on numerous municipal water and wastewater projects in New England and nationwide. The R. W. Beck team has managed procurement, engineering, operations, financing and associated management consulting for some of the first and largest public-private contract operations projects in the country and is well suited to join the City's utility acquisition and start-up team to help assure that the governance goals of the community-owned water utility start-up are successfully achieved.

The following describes the methods and advice the R. W. Beck team suggests to help governing stakeholders achieve the success they desire.



“Over the years, the Authority has come to know R. W. Beck as a trusted business partner. As an Independent Engineer, it is clear that they always endeavor to put the needs of the Authority first.”

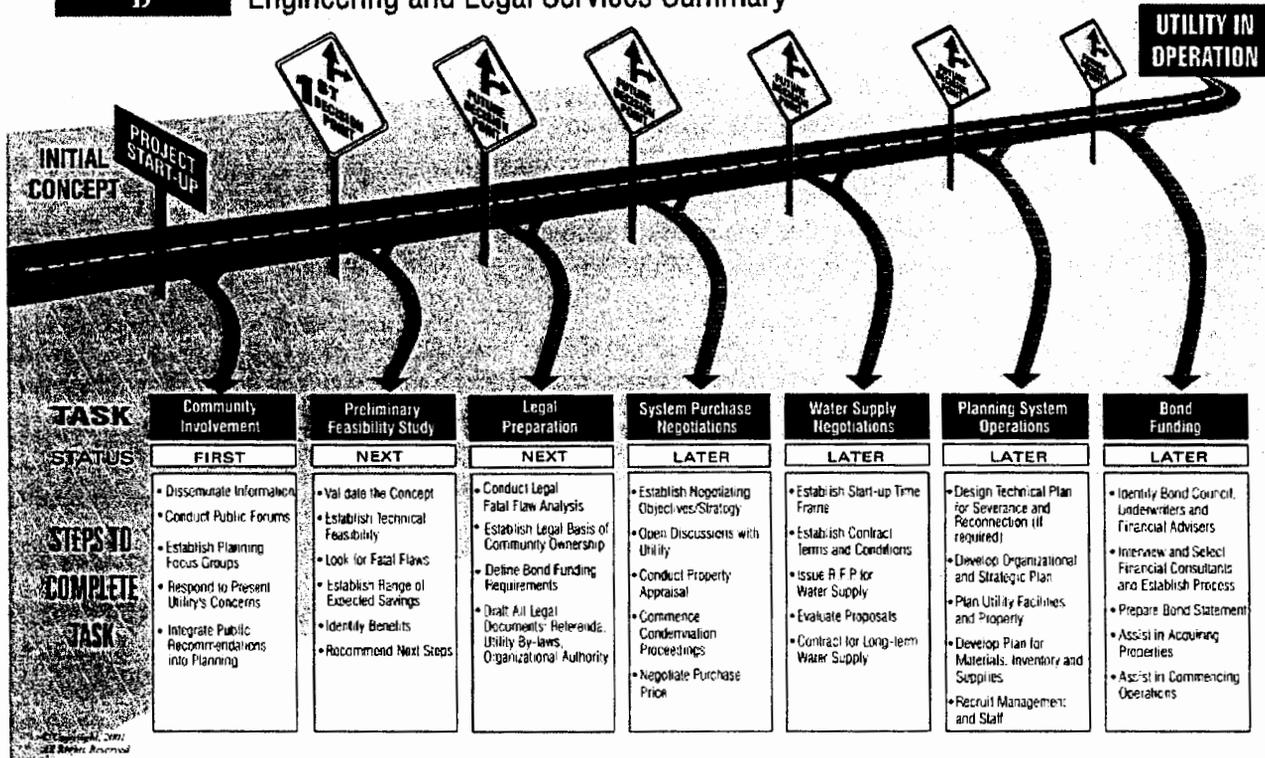
*Claire Bennett, Chairperson
South Central Connecticut
Regional Water Authority*



Overview of Municipalization Process



The Pathway to a Community-Owned Utility
Engineering and Legal Services Summary



WORK PLAN

As discussed in Sections 1 and 2 of this proposal, the R. W. Beck team has extensive experience directly related to the key issues that must be addressed to successfully initiate operations of the community-owned water utility in greater Nashua. R. W. Beck commits Paul Doran, P.E. as the Project Manager for completion of the project work plan described below. Mr. Doran is available 100 percent to the City and will remain so for the duration of the contract. He will have no other project or administrative responsibilities that will prevent his full-time attention to the priorities of the City and MVRWD under the contract, whenever needed. Mr. Doran, a long time resident of Hollis, New Hampshire, will work in Nashua City offices or at our offices in Manchester, New Hampshire at the option of the City. In either case, he is readily and immediately available to the City and MVRWD at any time, day or night, all week, every week. Mr. Doran is extremely well suited for this project, as he has spent the majority of his 30+ year career overseeing operations contractors and managing oversight contracts for major water utilities around the country. Mr. Doran is a recognized industry leader in contract oversight and he has been involved continuously in this line of work since the earliest privatized municipal operations contracts. You can be sure that your neighbor, Paul Doran, will always have the City's and MVRWD's

best interests in mind. He comes widely recommended from a number of water utility executives. Furthermore, backed by the extensive resources of R. W. Beck; and Tetra Tech, Mr. Doran can provide the new community-owned utility district in greater Nashua extensive expertise in our specialties: start-up and operation of municipal utilities and contractor oversight.

“Working with Mr. Doran, I found him to be proficient in the many complexities of private operations and maintenance services, in the technical and engineering aspects of operations and highly responsive in serving the needs of the Bureau of Water.”

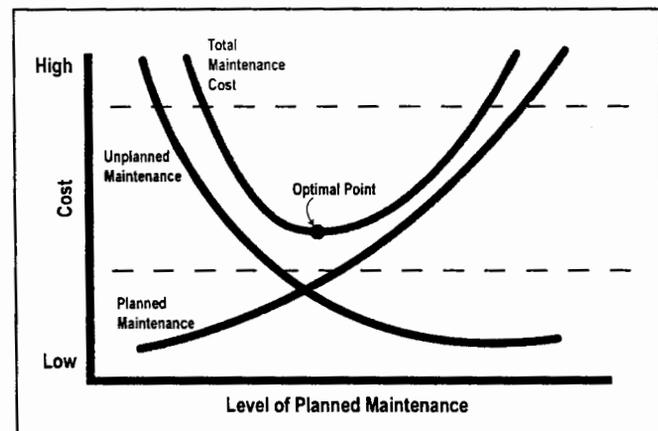
*Kenneth R. Skov
Superintendent of Water
City of Waterbury, Connecticut*

OUR APPROACH TO INITIAL TASKS

The first four sub-tasks described in the City’s RFP Initial Tasks have the Oversight Contractor reviewing and commenting on asset inventory, asset condition, staffing and maintenance deliverables prepared by the operations and maintenance (O&M) contractor. Due to the impact of the first four initial tasks on a successful project, we are proposing to take an active role working with the O&M contractor as it develops the asset inventory, evaluates asset conditions and prepares its maintenance and staffing plans.

INITIAL TASK 1 - Evaluate Maintenance Plan

The O&M contractor, selected by the City through its proposal process, is to prepare a Maintenance Plan for the acquired assets. We will review the Maintenance Plan to determine its compliance with the terms of the O&M service contract. It should define the maintenance work, throughout the contract term, to maintain the acquired assets so that they exist at a condition that is better than, or at least equal to the condition that existed as of the O&M contractor service commencement date, less fair wear and tear, at the completion of the O&M contract term.



R. W. Beck optimizes the maintenance plan to identify the least total cost of planned maintenance and equipment renewal.

The Maintenance Plan must integrate renewal, repair and replacement decisions. From our experience with the operations, maintenance and management of dozens of water utilities, it is clear that the least cost of operation over the long-term results from properly balancing planned maintenance and asset renewal and replacement. Implementation of a good maintenance plan by the O&M contractor is critical to least cost operations. We will review the O&M contractor’s Maintenance Plan to determine its compliance with the requirements of the O&M contract. It should include the following:

- Initial Asset Condition Assessment; Functional Assessment, Structural Assessment and Predictive Maintenance Report;
- risk analysis of asset failure;
- predicted rates of asset deterioration;
- the cost-effective point at which to renew, repair or replace an asset;

- the failure modes for each asset;
- conditions under which failures will most likely occur;
- consequence of reduced performance;
- planned facility changes that will eliminate the need for the asset;
- schedule of maintenance activities over the term of the O&M service contract; and
- well-defined costs of maintenance by type and year.

INITIAL TASK 2 - Evaluate Initial Inventory

Within 30 days after the Service Commencement Date, the O&M contractor is scheduled to produce an initial inventory of all transferred property including: chemicals, parts, tools and equipment noting the condition of each item on hand on the Service Commencement Date. For the purposes of this task, we define transferred equipment as follows: vehicles (other than those identified to be retained by PWV), rolling stock, spare parts, hand tools, furniture and fixtures, computers and communications equipment. In addition to the equipment, all transferred consumables in stock such as chemicals, fuel, and general supplies and materials of the operational utility will also be included in the initial inventory.

Equipment comprising the initial inventory does not include the PWV fixed assets that are included in the detailed Asset Inventory and condition assessment performed as part of Initial Task 4 - Evaluate Condition Plan.

We will review the O&M contractor's initial inventory for completeness and review the O&M contractor's proposed procurement of additional quantities of consumables and/or equipment, as defined above. In addition, we will check and verify that the final procurement quantities are appropriate for the O&M contractor to perform its services under the O&M Service Contract.

The inventory and valuation of transferred property, when completed, shall become part of the O&M Service Contract.

INITIAL TASK 3 - Evaluate Initial Staffing

To assure expected customer service levels; preserve and protect the assets; maintain safe working conditions; and to provide defined service levels at least cost, a proper staffing plan must be developed and implemented by the selected O&M contractor. To achieve these goals, we will review the O&M contractor's staffing plan for the following:

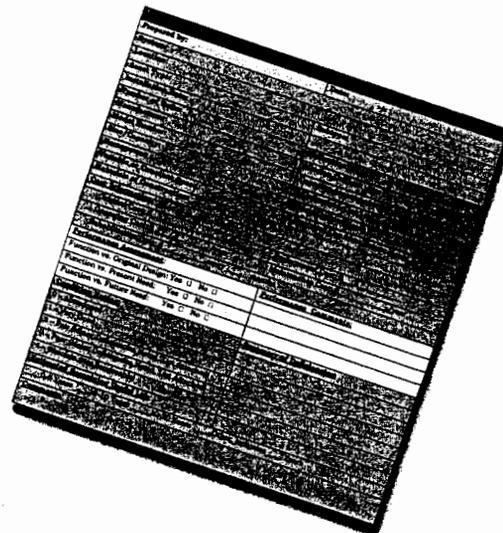
- the number and type of employees required, including third-party contractors, to operate, maintain and manage the acquired assets in accordance with the O&M service contract and the law;
- an organizational chart that lists job roles and responsibilities of proposed staff;
- adequate coverage present at the acquired facilities for each shift seven days-per-week, and, for facilities to be left unattended, how emergency coverage will be handled;
- the qualifications of management, supervisory, technical, laboratory, and operating personnel required to be licensed and/or certified by the State for O&M;

- the availability and commitment of specialists, on-site or as part of a technical support group, as necessary, in water treatment, process control, instrumentation, trouble shooting, emergency management, and other skills necessary to perform according to contract requirements;
- a technical support group that will provide on-call back-up advice, expertise and quality control, management, maintenance and facility repair to assist the operational staff and ensure performance according to contract requirements and to assist in the design and construction of any needed and authorized improvements to the acquired assets.

The contract should include provisions for owner approval of the staffing plan and a requirement to obtain owner approval for any material changes to the approved plan, particularly related to key staff.

INITIAL TASK 4 - Evaluate the Condition Plan

The Condition Plan establishes the initial condition of acquired assets. It is important to accurately and completely describe asset conditions to establish the baseline for planned maintenance, and identify asset renewal and replacement needs that must be addressed in a Capital Improvement Plan (CIP). We suggest that the O&M contractor gather comprehensive data on each individual asset, by completing an Asset Inventory Data Collection Form, shown in figure below. These data are used to develop an Asset Registry for all water facilities unit processes and sub-systems, pumping stations and equipment; water transmission and distribution system, water storage tanks and equipment; all instrumentation; existing spare parts; existing quantities of chemicals, fuel and other consumables; vehicles and other rolling stock; all general supplies, materials and equipment, hand tools, furniture and fixtures, computers, and communications equipment appurtenant to the existing acquired assets.



Maintaining a comprehensive asset register reduces the total cost of renewal and replacement.

Functional Evaluation. The O&M contract should also require an initial functionality evaluation on all items included in the Assets Registry. This evaluation would be performed, on a system and sub-system basis, when the assets are acquired. With our oversight, the O&M contractor would perform live testing, pump capacity tests for example, and other necessary investigations to determine if the assets operate properly and perform the function for which they are intended. The condition of the asset is placed into one of three functional categories: good to excellent, fair, and poor to very poor. This information sets the baseline condition of all assets and provides a foundation for subsequent Capital Improvement Planning.

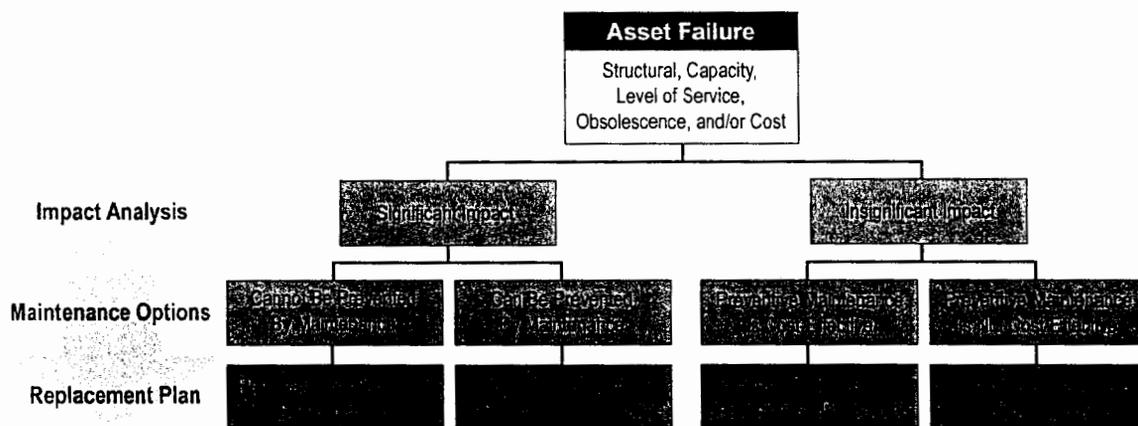
Structural Evaluation. The O&M contract should include provisions for all acquired structures to be evaluated. Observed by our team, the O&M contractor performs the investigations to determine if the structural assets are able to perform their intended function.

The structural evaluation includes visual inspections of all structures of the acquired assets, including all accessible buildings and related concrete structures, structural components associated with acquired equipment and utility structures.

Based on this condition assessment, the O&M contractor would estimate the remaining useful life of all major assets. The remaining useful life of an asset would be based upon its reliability to perform its intended function. The remaining useful life information is critical input to an effective capital improvement planning program.

Identifying Mission Critical Equipment. As important input to developing an effective maintenance plan, to guide the development of an appropriate CIP, the O&M contractor should be required to define Mission Critical Equipment. This is an important means for utilities to reduce operations risks and to reduce the overall cost of operations.

Observed by our team, the O&M contractor systematically evaluates the consequences of asset failure to meet required performance parameters. In identifying Mission Critical Equipment, the O&M Contractor would consider the following:



Reliable operation is assured by prioritizing planned maintenance on consequence of failure.

1. **Cost:** Will asset failure require a significant investment to repair or replace?
2. **Critical:** Will asset failure impact regulatory compliance? Will asset failure prevent receiving, treating or delivering water that meets all contract requirements?
3. **Health and Safety:** Will asset failure impact the safety of O&M personnel, the public or the environment? What physical damage may occur as a result of a failure?
4. **Hidden Failures:** Can a failure start out as a minute, hidden failure and degrade over time to become a significant failure?
5. **Regulatory Compliance:** Will asset failure result in regulatory action or violation?
6. **Public Relations:** Will asset failure create negative publicity for the water utility?

Identifying mission critical equipment helps prioritize routine maintenance and equipment replacement and renewal decisions in the context of long-range capital improvement planning.

Predictive Testing Analysis. We suggest the O&M contractor perform the Predictive Testing investigations of the Mission Critical Equipment. Predictive Testing and Analysis evaluates the performance of operating equipment against specified requirements such as: vibration, noise, temperature, oil usage, power usage, the condition and thickness of protective coatings, signs of wear or corrosion, structural integrity, infrared component alignment of moving equipment, and fluid leakage. Predictive Testing carefully monitors the performance of critical assets and provides accurate forecast of the remaining useful life of critical equipment. Predictive Testing gages the effectiveness of ongoing maintenance practices by monitoring key equipment performance indicators and aids capital improvement planning.

By completing the recommended Asset Inventory and Assessment, the new water utility would now have:

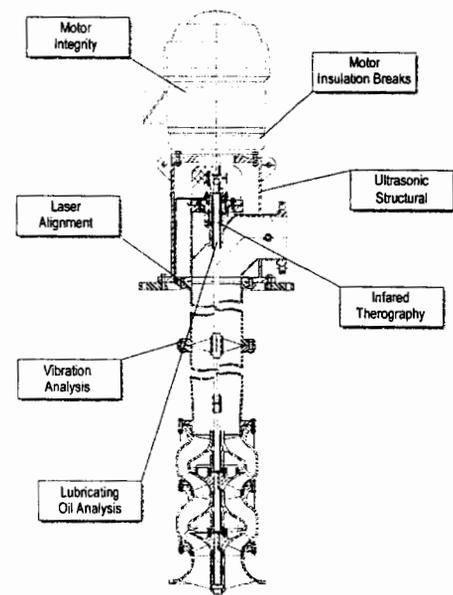
- a permanent and complete inventory of assets to be used for maintenance planning, balance sheet accounting and financial reporting;
- an accurate baseline assessment of asset condition to monitor the O&M contractor's performance on operations efficiency and maintenance;
- a prioritized tabulation of Mission Critical Equipment to regularly guide operations, maintenance and capital improvement planning; and
- an accurate condition assessment of all assets to guide operating and investment strategies for the regular asset renewal needed to maintain promised customer service levels.

INITIAL TASK 5 - Evaluate Billing Procedures

The O&M contractor will provide all necessary services associated with billing the community-owned utility customers. We will evaluate the O&M contractor's proposed scope of services for processing water bills from the utility metering. In addition, once the water system responsibility is transferred to MVRWD, the O&M contractor is expected to closely interface with MVRWD's Office of Consumer Affairs regarding customer billing.

A well-managed billing system includes the following:

- Receipt of computerized monthly water meter readings used to prepare bills;
- Preparation of bill distribution (e.g., providing all supplies and return envelopes, covering all mailing costs) and receipt of payments. Payments can be received in person, by mail, by telephone payment, by the Internet, and by direct debit payment;
- Operation of the pay stations and drop-off service related to Billing Services;
- Collection of overdue accounts: sending delinquent notices, providing collection agency services, and performing lock out and shut-off services. With City approval, terminating water service within a pre-determined schedule of days from the date of delinquency;



Predictive Testing Analysis helps reduce capital need by maximizing the useful life of mission critical equipment.

- Processing and depositing all collections within 24 hours of receipt. Providing daily reconciliation of receipts and evidence of deposits;
- Maintenance of all computer records related to utility billing;
- Ensuring proper interface and compatibility with the computer billing system with the City's Computer Information System;
- Performing public education and technical support activities related to Billing Services, such as supporting the City in notifying customers of changes in rate structure and payment procedures;
- Maintaining a log of customer inquiries and how calls were addressed. Preparing summaries of same. Responding to billing inquiries within 24 hours;
- Performing 24-hour/day, toll free telephone customer service;
- Accounting for changes in the utility's rate structures in the utility billing system; and
- Providing monthly and annual management reports and on-line, unrestricted reading access of billing system data to key utility staff. A detailed transaction report shall be prepared annually to support a year-end audit which may be performed by the City.



The Contractor must use best practices for collections to create cash for the utility operations.

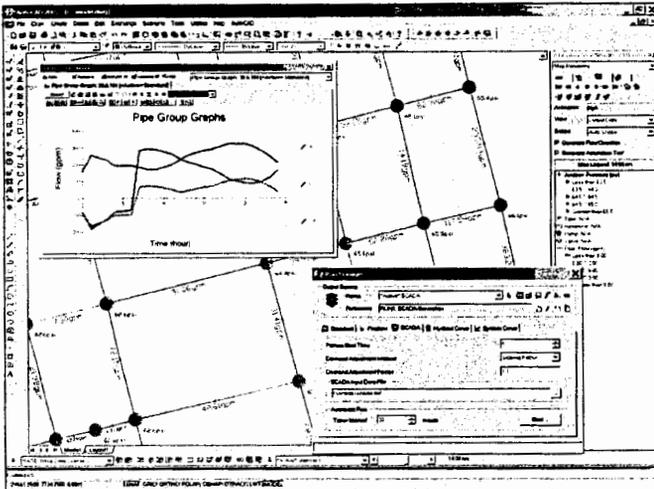
We would review the O&M contractor's billing system for contract compliance. We also recommend that it employ a Billing Service Coordinator to manage billing services, and to act as a liaison with the utility.

INITIAL TASK 6 - Evaluation of Existing Hydraulic Models

We will perform an evaluation of the utility's existing water system model. A well designed and accurate model of the utility's distribution system is an invaluable tool for evaluating current and future service levels; analyzing alternative capital improvement strategies for improving service in the existing service area or expanding the service area; evaluating water quality changes in the distribution system based on actual or projected water use; and assisting with vulnerability assessments and emergency response planning.

Revisions to the Enhanced Surface Water Treatment Rule-LT2, the Disinfection Bi-Products Rule and the Lead and Copper Rule are scheduled for implementation in early 2006 and impose new requirements for monitoring and control of distribution system water quality. Therefore, developing an appropriate model to evaluate and predict distribution system water quality performance will continue to be important to water utility managers. We will evaluate the existing models to assure that effective decision support tools are available to the utility to adequately manage operations now and in the future.

We will evaluate the existing model to determine if its level of detail is sufficient for accurate evaluations of system hydraulics and water quality under varying, existing and future operating conditions. We will determine how the existing model was calibrated and if additional calibration or field data validation is needed to produce accurate results. Our work will discuss the strengths and weaknesses of existing models and generate a list of recommended improvements for future modeling work.



Using state-of-the-art analytical tools prioritizes capital investments to achieve customer service goals.

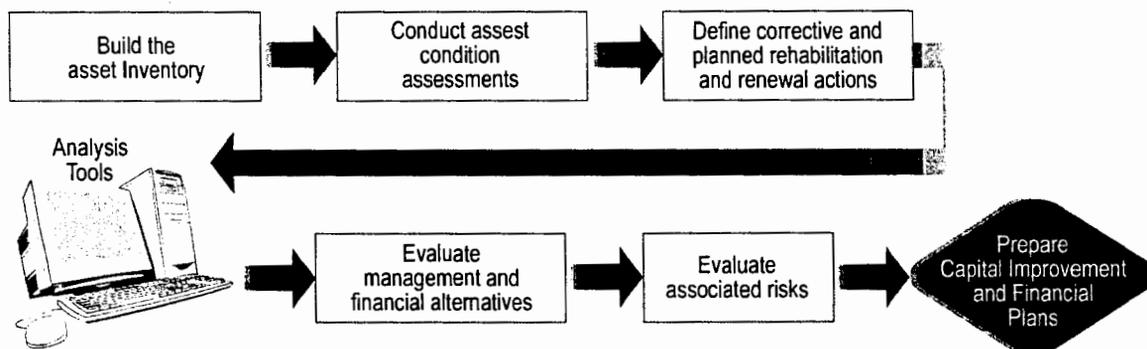
We will evaluate the existing model software in comparison to other available modeling software to determine which package best meets the utility's current and future needs. We will collaborate with the O&M contractor and utility staff to identify the appropriate modeling objectives. Our staff has experience with a number of modeling software, including Kentucky Pipe, WaterCAD, H2ONet, Haestad, and EPA Net among others.

Once the existing models have been evaluated and the modeling objectives have been determined, a report will be prepared summarizing the conclusions and recommendations of the modeling evaluation and to guide future system modeling work.

INITIAL TASK 7 - Conduct Long-Range Planning

Long-range planning is critical to utility operations for several reasons:

- Strategy and tactics are developed to assure the financial integrity of the utility
- Customer service goals are set to achieve the needs of the ratepayers and the community
- Priorities are set for investment in the utility through a multi-year CIP for the continuous renewal and replacement needed to achieve customer service goals
- Annual operating budgets are set considering the long-term plans for system renewal and growth.



Early long-range planning should focus on the fundamentals: preserve acquired assets to protect the investment.

It is important that the utility grow and develop strategically to properly serve its customers. Creating the new community-owned utility will result in many dynamic challenges for its leaders. Priority

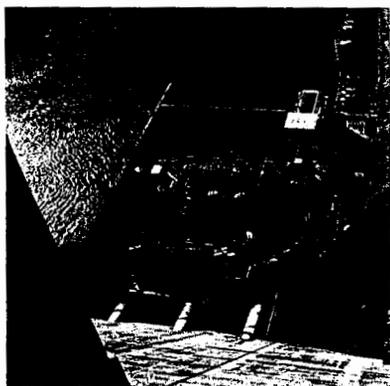
challenges for the City and MVRWD early on are likely to include: implementing effective watershed management; obtaining debt financing for the acquisition and possible system renewal resulting from deferred maintenance; fostering public acceptance and support of the new community-owned utility; implementing effective management policies and procedures, particularly fiscal controls; recruiting and training key (leadership) staff; and maintaining fair, equitable and affordable rates which adequately cover the true cost of expected service levels – now and in the future. The new community-owned utility must build a strong foundation to successfully manage these challenges. Effective long-range planning will be critical to the success of the new utility.

The utility's Long-Range Plan is an important legacy document which can provide overall, general guidance on the most pressing issues facing the new utility. Creating a good Long-Range Plan, and keeping it current from year to year, is an important priority for utility leadership. The Long-Range Plan must address many issues including those related to system growth, water resources management, regulatory compliance, maintaining appropriate customer service and asset renewal and replacement.

R.W. Beck will work closely with the O&M contractor and key staff from the City and MVRWD to create a Long-Range Plan that sets an affordable course of action. We suggest that the initial plan focus on near-term priorities over the first five years. An important feature of the Long-Term Plan is the CIP needed to renew and replace assets to maintain the established and planned levels of service. We discuss our recommendations for Capital Improvement Planning under Recurring Task 9.

INITIAL TASK 8 - Review Security Plans and Proposed Practices

R. W. Beck subcontractor Tetra Tech is the largest contractor supporting EPA's emergency preparedness, response, and counter-terrorism programs. Tetra Tech has also supported FEMA and the Department of Homeland Security in disaster planning and mitigation programs nationwide for three years. Tetra Tech has also supported many other clients with relevant work which include the Army Corps of Engineers, National Park Service, six port facilities, and many state, county, and local government agencies across the United States. Tetra Tech's direct emergency response experience allows them to develop workable solutions, plans, tools, training materials, policies, and procedures to help government agencies and communities mitigate risks and respond to events efficiently.



R. W. Beck team experience with security plant review and system design will help protect critical assets.

We will review the existing Vulnerability Assessment (VAs), Emergency Response Plan (ERP), risk assessments, and other appropriate security plans or programs required by state and federal law. These documents will be benchmarked against EPA Office of Water's "*Instructions to Assist Community Water Systems in Complying with the Public Health Security and Bioterrorism Preparedness and Response Act of 2002*"; "*Emergency Response Plan Guidance for Small and Medium Community Water Systems to Comply with the Public Health Security and Bioterrorism Preparedness and Response Act of 2002*", good Water Utility Practices and Tetra Tech's experience with VAs and ERPs across the country.

Our approach to reviewing and/or preparing VAs and ERPs entails quantitative assessments of the reduction of risk through increasing levels of protection, and the assessment of whether proposed additions to security systems would be cost-effective. We will employ a rigorous evaluation of configuration control (defining assets and threats), protective effectiveness (deterrence, detection, delay, and response techniques), and emergency management (mitigation planning) to identify recommended security enhancements to protect the utility's assets, workers and the public.

Our staff is experienced (and certified where applicable) in the use of vulnerability and risk methodologies including: the Risk Assessment Methodology for water utilities (RAM-W) developed by Sandia National Laboratories and the modified RAM-W version for medium to small water systems. Our staff is also familiar and certified to use the Risk Assessment Methodology for Dams (RAM-D); for chemical facilities (RAM-CF); and vulnerability self assessment tool (VSAT) for wastewater systems. We will review the existing VA and ERP for the water system and will prepare a memorandum detailing the completeness and practicality of the existing plans and will make recommendations to enhance, improve and strengthen the existing plans, such as:

1. The feasibility and value of real-time raw water and distributions system water quality monitoring.
2. The value and need for any security upgrades to expand detection, delay and response such as fencing and video upgrades.
3. The cost and value of baseline assessment of cyber threats.
4. The value and need for reviewing threats with local law enforcement when possible.

OUR APPROACH TO RECURRING TASKS

Recurring Task 1 - Represent the Owner in Negotiations

Contract development and negotiations are signature strengths for R. W. Beck. We are broadly recognized in the water utility industry for our expertise advocating for owners as agent for contract development and negotiations for a wide variety of services related to utility operations, maintenance and management. Owners trust R. W. Beck to do the right thing because of our status as an Independent Engineer. By company mission, we are committed to this Independence, and, therefore, we avoid conflicts of interest:

- R.W. Beck does not perform contract operations for clients,
- R. W. Beck does not complete design/build or construction projects for clients, and
- R. W. Beck does not regularly perform detailed design for clients.

This is unique, and others cannot make such definitive 'no conflicts' declarations to the City and MVRWD.

Rather, R. W. Beck is the owner's advocate to go to the marketplace and find and contract for the best services that meet the utility's needs at least cost. Procurement, contract development and negotiations are our specialty. Owners find high value in our approach, because we are expert at leveraging the power of the free market to find the best, most valuable ideas and services for our clients.



"We consider R. W. Beck to be an industry leader in procurement and contractor oversight in the water industry."

*Kenneth R. Herd, P.E.,
Director of Operations and Facilities
Tampa Bay Water*

R. W. Beck's procurement and contract negotiations expertise will provide high value to the City and MVRWD for whatever assistance might be needed as the community-owned water utility becomes a reality. We can find you the best value for detailed design engineering and water resources planning as important examples, when the utility is prepared to focus on these priorities in the future.

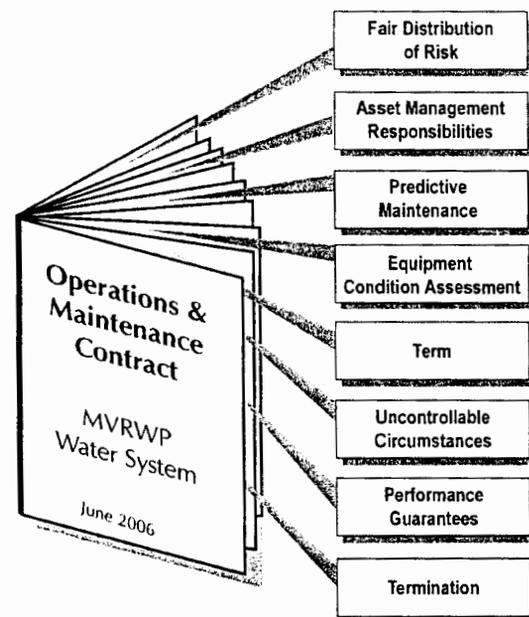
Meanwhile, a more urgent priority for transitioning the water system to public control and private contract operations is to negotiate an O&M contract with precisely stated terms that are specific in nature and unambiguous in their intent. A clearly crafted agreement gives the utility strong control over the O&M activities of a private operator. In the early private operations contracts, terms were poorly written and, in a many cases, were unenforceable. This led to the perception that public officials lost control over private contract operators that managed public systems. Over the past decade, O&M contracts have reached a high degree of sophistication by considering past lessons learned. R. W. Beck has led the way.

The R. W. Beck Team provides the City with a seasoned group of professionals that are highly regarded in the negotiation of tightly-framed O&M contract terms and conditions that protect the municipality. This type of contract gives the utility the control it seeks, while obtaining affordable service from the contractor.

We are available to join the City's O&M contract development team, if it is viewed that we could be of assistance. We have negotiated numerous private operations contracts and have:

- experience in risk posturing, partnering approaches and scope development,
- expertise in performance security issues (parent company guarantee, letter of credit, performance bond for O&M and capital construction, appropriate insurance protection)
- detailed, first-hand knowledge of usual vendor position on the major contract terms,
- experience negotiating with engineering firms that support O&M contractors for engineering,
- extensive "at the table" negotiating experience with the larger private contractors (several of which may submit proposals to the City) namely, Veolia Water North America, American Water, Earth-Tech, Connecticut Water, and OMI, Inc.
- negotiated water quality and other private operator performance issues, and
- significant experience writing technical contract exhibits, critical to enforcing performance criterion.

Typically, a variety of complex issues associated with the contracted O&M of a water system are incorporated into the O&M contract. Example terms and conditions of an O&M contract that help achieve community-owned utility goals are as follows:



Our member governments and their customers are assured an even better value than originally anticipated, as the contract provides higher guaranteed water quality and several project enhancements at a lower price than specified in the original proposal."

*Charles Carden, Project Manager
Tampa Bay Water*

1. ***“Adherence to Applicable Law”***. All responsibilities of the O&M contractor, and its subcontractors, must be performed in accordance with Applicable Law.
2. ***“As-is” Equipment and Structures Risk***. The O&M contractor assumes the “as-is” risk of the condition of the water system assets in agreeing to its obligations under the contract. In addition, the O&M contractor assumes the “as-is” condition for Capital Improvements that are made during the term of the contract, whether or not the O&M contractor was responsible for the work.
3. ***“Term of Service”***. The City has decided that the initial term of service will be for a period of six years, with three options for two-year renewals. The City may wish to consider changing the initial term to ten years with two options for five-year renewals. When negotiating this provision, consideration is given to the correlation between the length of the agreement and the contract price. From our experience, a longer term allows the O&M contractor to amortize the costs associated with the procurement of the agreement, capital investments made or to be made, and costs associated with the transition of the existing labor force over a longer period of time. This can reduce the overall cost of service. A longer term can also provide opportunities for improved operational performance and additional cost savings and efficiencies over time, particularly if financial incentives to the operator are provided.
4. ***“Contract Standards”***. The standards, terms, conditions, methods, techniques and practices imposed or required by: (1) Applicable Law; (2) the Performance Guarantees; (3) Prudent Industry Operation and Maintenance Practice; (4) the water system operation and maintenance manual and standard operating procedures; (5) applicable written equipment manufacturers’ specifications and operation and maintenance standards; and (6) applicable Insurance Requirements.
5. ***“Uncontrollable Circumstances”***. Any act, event or condition that is beyond the reasonable control of the party relying on this definition as justification for not performing an obligation or condition of the contract, and materially causes an expanded scope, interferences with or delays or increases the cost of services. O&M contractors can claim excessive changes to the contract due to uncontrollable circumstances (UC) if performance criteria are loosely defined. Contract changes due to UC are mitigated by defining what constitutes an UC and, and more importantly, defining exclusions to UCs. Typical inclusions are: (1) naturally occurring events (except weather conditions normal for the area and season) and (2) changes in Applicable Law not related to the negligence or fault of the O&M contractor. Typical exclusions are: (1) an event or circumstance that would not have occurred but for the O&M contractor’s failure to comply with the contract and (2) changes in general economic conditions.
6. ***“Asset Management”***. The O&M contractor provides complete asset management of the assets to include computer asset management software implementation, equipment renewal, repair or replacement decisions, integrated capital improvement and financial management decisions.
7. ***“Warranties”***. The O&M contractor maintains manufacturer’s warranties on equipment installed before and at any time during the term of the contract and enforces, on behalf of the City, all warranties.
8. ***“Performance Guarantees”***. Some typical guarantees are: law compliance, finished water quality, finished water quantity, environmental guarantee, water pressure, water production efficiency, unaccounted-for water, distribution system water quality, treated water storage and, if the City desired, an electrical usage guarantee.
9. ***“Termination for Convenience” and “Cooperation Upon Termination”***. The City maintain the right, at anytime during the contract to terminate the contract after providing 30 days written notice and payment of a negotiated convenience termination fee. The termination fee can be a stipulated amount that decreases as the term progresses.

10. "Condition of Returned Assets". Upon termination or expiration of the contract, the O&M contractor returns the water system assets to the utility in an equal to or better condition as they were made available to it at the commencement of the contract.

The utility may also wish to consider certain contracting innovations which can save money by sharing risks. Examples are incentive terms for reduced fuel, chemical, and electricity use.

We have deep expertise in all facets of utility operations, maintenance and management that can be brought to bear on behalf of the utility to procure and negotiate good contracts for whatever good or service it might need to achieve its customer service objectives.

Recurring Task 2 - Audit Performance of Contractor Planned Maintenance Activities

Planned maintenance activities are proactive and performed to prevent, minimize or delay asset failures or shutdowns resulting in unplanned maintenance. We will review the O&M contractor's compliance with contract terms requiring adequate planned maintenance which usually include: preventive maintenance, predictive maintenance testing, and corrective maintenance.

In monitoring the O&M contractor's maintenance routine, we will look for an appropriate level of planned maintenance that strikes a balance between responding to unplanned maintenance--which can drive unbudgeted costs up--and routine maintenance at an appropriate level of effort to preserve the assets. To help determine an optimum balance of planned and unplanned maintenance, we would consider the following:

1. Are the planned maintenance activities appropriate considering historic failure modes, manufacturer's recommendations and experience of operating staff?
2. Are the intervals of planned maintenance appropriate in length?
3. Are the impact analyses of failure well thought out and sound? Should corrective maintenance be allowed?
4. Has a Computerized Maintenance Management System been implemented?

Annual Updates of Asset Registry. We propose that the O&M contractor update the Asset Registry once per Contract Year, including updates of any material changes in mission critical equipment status. All newly added assets would be entered in the Asset Registry together with evaluation information, installation date, and installed cost. All assets that are removed from service shall be deleted from the Registry. We would audit the contractor's compliance with this requirement to help ensure that the database is current. Maintaining the database will ensure that good information is always available for updating annual operating budgets and the CIP.

A final inspection of the acquired assets would be conducted by the O&M contractor and the City at the end of the contract term to verify compliance with the Maintenance Plan and Renewal, Repair and Replacement Plan.

Recurring Task 3 - Review O&M Contractor Unplanned Maintenance Requests

Our recommended Maintenance Management Program, described earlier in Initial Tasks 2 and 4, minimizes costly and disruptive unplanned maintenance. Therefore, unplanned maintenance activities will mostly be associated with uncontrollable circumstances, only.

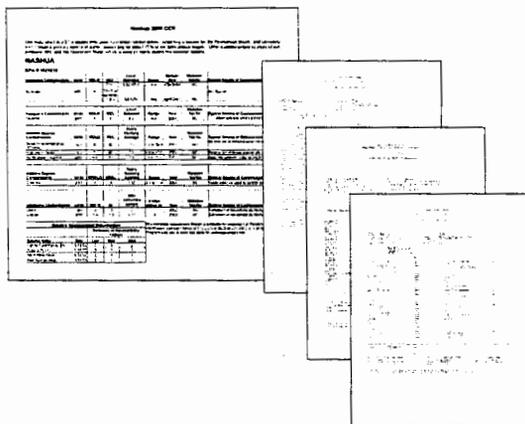
We would perform a detailed evaluation of all unplanned maintenance requests to ensure that they are reasonable and appropriate. We would evaluate the conditions leading up to the unplanned maintenance event to determine if the events are traceable to O&M contractor non-performance of its contract obligations and contract conditions, or if the contractor failed to properly and faithfully execute the approved Maintenance Plan. Unplanned maintenance would only be approved if it results from circumstances beyond the control of the O&M contractor.

The situation would also be reviewed considering the approved CIP to determine the least-cost alternative plan of action based on a life-cycle cost analysis of the asset. The contractor would be directed to proceed with the least-cost option of maintenance, asset replacement or renewal, depending on the life-cycle cost analysis.

Recurring Task 4 - Review and Evaluate Operational Data

Water Treatment Plants generate volumes of data and statistics to monitor performance and are required to regularly report to the state regulatory agency, New Hampshire Department of Environmental Services. Typical data collected includes:

- Raw Water Quality and Quantity
- Finished Water Quality and Quantity
- Chemical Use Data
- Filter Backwash Water Quality and Quantity
- Waste Backwash Water Quality and Quantity
- Recycle Water Quality and Quantity
- Residuals Production Data
- Filter Run Times and Unit Filter Run Volumes
- Other Process Performance Parameters.



We use Statistical Process Control Strategies to assure high quality water production at least cost.

We will review this data and work closely with the O&M contractor to assess its completeness and accuracy. This will include reviewing and checking the O&M contractor's QA/QC procedures for analytical tests and calibration of devices and instruments used to collect and record data. Close attention will be given to all operating data as they pertain to regulatory requirements, design limits or license to make sure that the facility is operating as required.

We will work with the O&M contractor to prepare and use Statistical Process Control (SPC) tools to optimize the treatment plant operations for the least cost of operation and consistently high quality potable water.

These analytic tools allow operators to identify significant trends much faster and direct appropriate process changes that are proactive and effective at maintaining optimum performance. These are powerful control tools used by many major industries, including the local Anheuser-Busch facility, to optimize process performance.

Recurring Task 5 - Review and Evaluate Test Results for External Reports

Every water utility is required to prepare and submit monthly and annual reports to comply with federal and state regulations. Included are monthly reports on water quality leaving the water treatment plant and in the distribution system. The reports provide the regulatory agency with verification that the water treatment system is being operated within the regulatory requirements. Monthly reports are required for each chemical used to treat the water, turbidity reports and a report showing the adequacy of disinfection. Monthly bacterial, chlorine residual, disinfection by-products and lead and copper reports are also required to demonstrate that the water produced is meeting all the drinking water quality regulations and standards throughout the distribution and storage system. In addition to the routine monthly reports, there are comprehensive annual statistical reports, which summarize operational data on every aspect of the supply, treatment, distribution and storage system within the utility.

The Enhanced Surface Water Treatment Rule – LT2, the Stage 2 Disinfection By-Products Rule (DBP) and the Lead and Copper Rule (LCR) all have different requirements for specifically designed sampling, monitoring, and reporting programs to make sure that the water quality leaving the water treatment plant remains consistent throughout the distribution and storage facilities. We will review reports prepared for submittal to the regulatory agencies, the owner and the public to be sure that appropriate data is accurately collected and reported. We will work closely with the O&M contractor to implement a QA/QC program for analytical tests and calibration of devices and instruments used to monitor and record process performance and water quality.

We will provide oversight review of the sampling and monitoring programs to make sure that they are designed to best monitor the performance of the treatment facilities and water quality within the distribution system and storage facilities. We will also monitor the data collection process to make sure that the O&M contractor is collecting all of the required data and using the proper sampling and analytical procedures. Real-time raw water and distribution system water quality monitoring will be assessed as part of the security reviews. The security needs and recommendations will be incorporated in the design of these sampling and monitoring programs.

Each water utility is also required to prepare and distribute an annual water quality report to all of their customers called a Consumers Confidence Report. This annual water quality report summarizes the overall system performance related to required drinking water quality standards. A properly designed Annual Water Quality Report can be a significant communications tool for a utility to keep the general public aware and supportive of the utility's performance. We will provide technical and public relations input to these Consumer Confidence Reports to help build public confidence in the utility.

Recurring Task 6 - Review and Test Security Plan

We will conduct continuing reviews of the O&M contractor's and the Owner's Security Plans. On an annual basis, we will review and assess the number and type of incidents and prepare a summary. We will evaluate the response to each incident to determine if it was in accordance with the Security Plan

We have considerable experience in utility asset hardening to improve security including conducting mock drills.



and if the response required by the plan was appropriate. When necessary, we will propose modifications to the Security Plan or improvements to the facilities to enhance and strengthen security and to provide appropriate responses to each incident.

As an optional service, we could also develop and implement specific procedures that will test the O&M contractor's response to controlled but unannounced hypothetical incidents. Examples of possible incidents could include:

- Breaking and Entering (B&Es)
- Spill Response to Hazardous Materials in the Watershed
- Response to Hazardous Materials in the Raw Water
- Response to a Compromise of a Critical Asset (storage tank, service pump, chemical feed, transmission mains)
- Chemical spill or other sabotage by disgruntled employee
- Response to Regional Power Outage
- Cyber Attack.

We will assess the appropriateness and timeliness of the O&M contractor's response and provide recommendations on ways to improve the detection, delay and response to various threats.

Recurring Task 7 - Coordinate Construction

Construction coordination will be on an "as-needed" basis throughout the term of the O&M contract. We will develop, prepare and submit to the City, a Construction Administration Plan (CAP) for project organization and the performance of oversight of future construction. We would be responsible for construction administration of the capital improvements in accordance with the approved CAP.

During construction, we would oversee and monitor the work for compliance with the contract documents; prepare the procedures for and oversee the start-up tests; supervise acceptance testing; and through a resident project representative, represent the utility according to industry standards for construction administration services, so that the construction work is completed in conformance with the requirements of relevant contract documents.

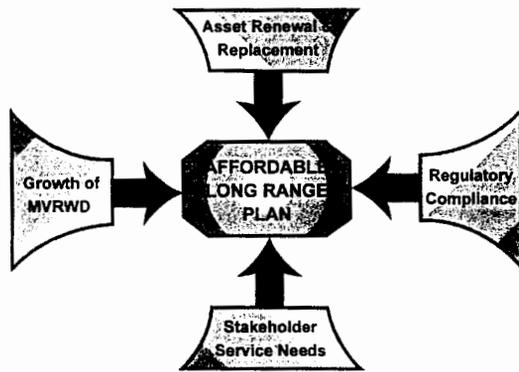
We would work with the O&M contractor to coordinate the construction work to minimize interference with normal operation of the water system. We would observe the construction work and conduct specific quality assurance testing to confirm that the



Minimizing the impact of construction on the community is a priority.

contractor is completing construction work according to specified requirements. We would perform construction oversight and coordination tasks to industry standards as defined by the National Society of Professional Engineers.

Recurring Task 8 - Long-Range Planning



The long-range plan balances many issues to set an affordable course of action.

As the new utility gets its legs after a year of operation, its long-range priorities will come into sharper focus. After the urgent needs of year one are addressed, the utility will likely begin to concentrate on longer range issues such as service area expansion; on-going watershed protection; regional water resources management; staff expansion and development; inter-governmental relations; business process enhancement such as procurement systems development; grantsmanship and external funding; and continuous customer service improvement. It might also be appropriate to complete a Strategic Plan for the utility at that time. We discuss our approach to strategic planning in the following subsection as an optional task.

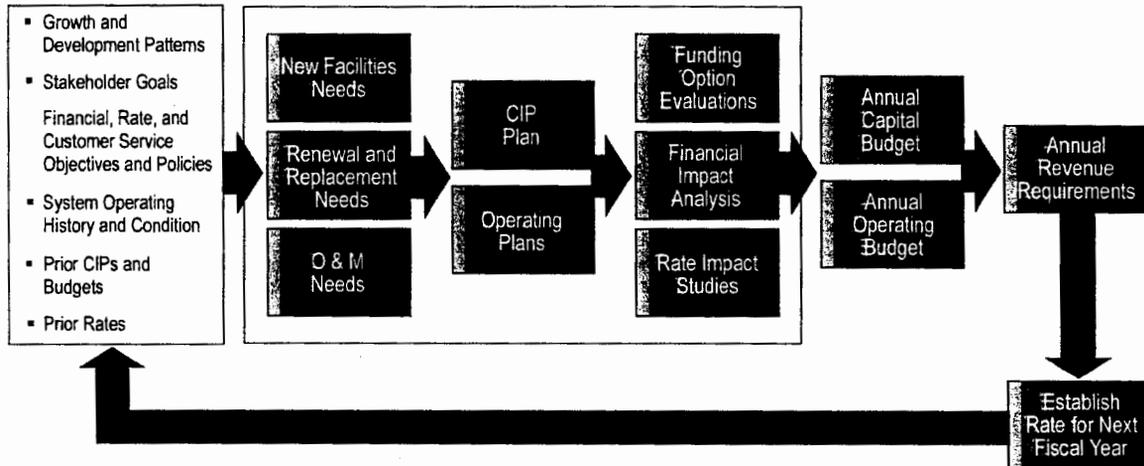
As the utility matures, we will support it with ongoing, annual updates to the Long-Range Plan. We envision a highly collaborative process with key stakeholders to assure that the Long-Range Plan remains current with the highest priorities of the utility's leadership. As an engineering-based management consultant, with deep experience with water utility municipalization and operations, R. W. Beck is well suited to assist the City and MVRWD in providing excellent service to its customers at the least cost, while enhancing the local environment.

Recurring Task 9 - Review Capital Improvement Plans

Effective management of the capital improvement planning process is critical to successful utility operations. The new community-owned utility must continuously invest in the creation of new assets, and the renewal and replacement of existing assets, in order to achieve present and future customer service objectives. Well-run utilities conduct diligent, on-going capital improvement planning in order to maximize the leverage of the limited capital available; prioritize needs to assure adequate service levels; and to stabilize rates. We view a utility's CIP as a business system, which combines important organizational, financial and political issues together into an integrated action plan. The approved CIP must be affordable within the selected rate structure, address deferred and ongoing asset renewal and replacement, and anticipate the future needs of the utility by providing the new assets that might be required by service area population growth, changing regulations, or system expansion. Specific inputs to the CIP will come from the results of the Condition Plan Evaluation (Task 4); the Hydraulic Model Evaluation (Task 5); and the Security Plan Review (Task 8).

The O&M contractor's condition study of fixed assets is perhaps the most critical input to the new utility's Capital Improvement Planning in the near term. As presented in our Initial Task 4 discussion, we recommend that the O&M contractor develop a comprehensive asset register of all major fixed assets of the utility. When complete, the asset register database will be a powerful tool for Long-Range Planning related to capital improvements for renewal and replacement of existing assets. If completed according to our recommendations, the O&M contractor's condition plan will provide a comprehensive summary of the condition of all of the utility's equipment and structures upon the taking of the assets.

The new utility will know the current condition of all equipment and structures, their remaining useful life, and what is not “fit for purpose” and must be upgraded or replaced. Furthermore, a relative ranking of all mission critical equipment will be identified so that the utility knows where to spend limited capital most effectively to manage operations risks.



A comprehensive capital improvement planning process achieves customer service goals at least cost.

We propose that the O&M contractor assess the impact of asset failure to determine if an asset is mission critical and the consequences to the utility if the asset becomes non-operational. Similarly, the O&M contractor determines the utility impact of an asset that is operating at a sub-standard level, has defects (a condition in an asset that may prevent it from operating as intended), is in poor condition or has a low Functional/Structural Evaluation.

With this information in hand, capital improvements needed to maintain established customer service levels can be prioritized and scheduled. The result is a time-scaled list of improvements that O&M staff can agree are necessary. These data would be the basis of the utility’s Capital Improvement Planning related to existing assets.

SOME OPTIONAL TASKS YOU MIGHT WISH TO CONSIDER

As an engineering-based management consultant, R. W. Beck is a national leader in the creation of municipal utilities and related operations contract oversight. As such, our staff is comprised of Subject Matter Experts offering broad qualifications and experience in a variety of areas related to utility creation and operations. The deep qualifications of some of our specialists are briefly described in Section 2. Should the new utility wish to call upon the expertise of the R. W. Beck team more broadly than required by the scope of work included in the RFP, some of the optional tasks that might be considered are described in this section of our Technical Approach. It is important to note, that all of these capabilities are available to the new utility through the staff of R. W. Beck, Inc. and Tetra Tech Inc. We are specialists in utility creation, management and oversight. Therefore, we have not had to create a cumbersome team of numerous affiliates to achieve your goals. The benefit to you is efficient project management and delivery of superior work products.

On the following pages, we describe some of the priority activities that we believe might be of value to the new community-owned utility as it faces the many and significant challenges of starting up. Our suggested additional, optional scope of work items, which are offered for your consideration are:

- Community Outreach
- Comprehensive Watershed Planning
- Financial Consulting
- Strategic Planning
- Grant Funding Assistance

OPTIONAL TASK 1 - Community Outreach

The City and MVRWD have engaged in a prudent but locally uncommon process of acquiring the assets of the private company that has been the local water supplier for generations. The acquisition has turned rancorous with the parties now involved in contentious public proceedings. The private utility has embarked on a directed publicity campaign to personalize the debate, and to discredit the obvious merits to the community of the municipalization of the private water company.



Diverse stakeholder interests must be considered in a successful Public Outreach Program.

Successful start-up of the new community-owned water utility will require the support and involvement of a number of local governments, the state, and the general public. It is important, therefore, for the new utility to consider implementing a proactive public outreach program to help achieve rapid and deep community support. Positive community relations occur most successfully using a variety of media and approaches over an extended time period. It requires a directed strategy, coupled with skills in publicity and promotion. To positively position the utility in the community, a specific public outreach campaign could be created and implemented. It would target the audience; establish the desired impact and message; educate the public; and actively promote positive intergovernmental relations.

A successful community outreach program is designed to reach the target audience including community leaders, elected decision-makers, merchants, City and MVRWD employees, special interest groups, and concerned citizens of all ages. The goal is to reach everyone, understanding that different audiences respond to different approaches and styles.

Establishing the message is the result of teamwork – a core group of selected stakeholders from the City and MVRWD would meet periodically in a workshop-type meeting, facilitated by the R. W. Beck team, to create and refine information that the differing audiences need to know.

Educating the public requires using public relations and publicity tools. Samples include newspaper listings; news releases, and feature articles; publicity photos; direct mail; live meetings; local cable television; brochures; spokesperson interviews and testimonials; and bulletin board flyers. Selection of

the appropriate tool(s) is based on the target audience, the image created, the message, the timing, and the available budget.

The budget determines the quantity, frequency, and type of positioning campaign. Note that very effective campaigns can be implemented with huge success on a limited budget. Greater results are achieved when well-defined positioning activities occur over a specified time period. If requested by the utility, we would design a public education campaign based on objectives established by the chosen message. The theme, message, and style will be tailored to make the desired impression. A plan can also be prepared for immediate implementation in case the utility experiences an emergency.

Effective Intergovernmental Relations is a key element of successful public outreach programs. The City and MVRWD must assure the participation and buy-in of all government entities and agencies that affect the acquisition, start-up and operation of the new community-owned water utility. It is essential for local and state lawmakers to be kept apprised of progress to assure their on-going support for key decisions that the new utility will make early on.

Sensitive to the critical importance of effective intergovernmental relations to the creation and commissioning of the community-owned utility, the R.W. Beck team includes several important New Hampshire thought leaders with many years of experience as public servants in local, state and federal government. Their collective knowledge, insight, integrity and effective working relationships at all levels of government could be invaluable to the City and MVRWD. Their experience and relationships would be valuable in both the regulatory and grant funding areas, should you wish to engage them.

Highlights of R.W. Beck's Government Relations team staff follows:

John A. Clements, P.E., Vice President Tetra Tech, Inc., former Commissioner New Hampshire Public Works and Highways; former Chairman, New Hampshire Republican Party; Director, American Public Works Association; former Associate Administrator Federal Highway Administration; former President and Board Member, Business and Industry Association of New Hampshire; New Hampshire Industrial Development Authority, Board Member and Treasurer.

Jeffery H. Taylor, President Jeffrey H. Taylor and Associates; former Director, New Hampshire Office of State Planning serving Governor's Gregg, Merrill & Shaheen.

Individually and collectively, these veterans of New Hampshire state government have enviable reputations for trustworthiness and uncommon track records for consensus and coalition building on any number of important state initiatives. The community-owned utility will find no better advocacy, either locally, at the State House, or in Washington, D.C., for issues of import to the City and MVRWD, than these highly accomplished former public servants.

OPTIONAL TASK 2 - Comprehensive Watershed Protection Planning and Management Program

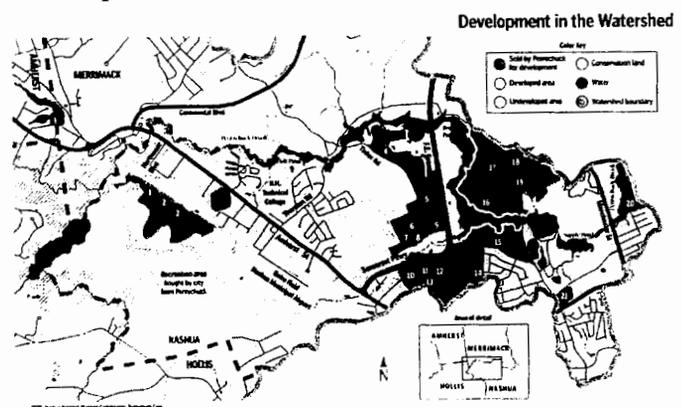
The water utility industry and the Safe Drinking Water Act prioritize "source protection" for the control of drinking water quality. Research shows that the quality of treated drinking water, compliance with the Stages I and II Disinfection By-Products Rule, the Interim Enhanced Surface Water Treatment Rule and the Long-Term 1 and Long-Term 2 Enhanced Surface Water Treatment Rules of the Safe Drinking Water Act is directly related to the quality of the source water.

MVRWD Watershed Protection --- Overdue Priority within the Region. Based on review of readily available information, we believe that the quality of the source water of the watershed within MVRWD, risks further decline unless active watershed protection and management measures are undertaken.

At the time the PWW Assets are acquired, we recommend the City conduct the required investigations to begin remediation of existing water quality problems in its source water and the prevention of future water quality degradation within its watershed. We propose that the new utility develop a multi-faceted watershed source protection program to protect its drinking water sources within MVRWD.

The first step in establishing such a program is to extensively revise the PWW Watershed Management Plan to be in compliance with the latest water industry model watershed protection plans. The PWW Watershed Management Plan, as evaluated in the 2003 Comprehensive Review of the Pennichuck Water

System, is deficient in several areas. For example: non-point source pollution studies were conducted within the watershed without implementation of their recommendations, acquisition of conservation and buffer zone land within the watershed is essentially non-existent; a coordinated deicing program should be completed; and emergency response procedures for spill control within the watershed, along with appropriate drills, need to be shaped and validated.



Watershed protection must become a regional priority to maintain drinking water quality.

The second step is to aggressively implement the recommendations of the revised watershed plan among all of the stakeholders within the region with vigor. A watershed management plan produced merely to satisfy regulatory intervention that just “sits on the shelf” is not beneficial.

We recommend that upon acquisition of the PWW assets, the utility immediately begin to develop and implement an aggressive source protection program, inclusive of the following:

- an accurate technical basis for setting source protection priorities;
- participation of local communities in stewardship and public education about drinking water supplies;
- sustain a highly visible presence throughout MVRWD to foster local community participation;
- coordination with key elected officials, planning and zoning commissions, economic development commissions, conservation commissions and inland wetlands commissions, the Nashua Regional Planning Commission, regarding development issues, site plan reviews, and subdivision regulations;
- adopt regulations and ordinances framed to protect the watersheds within MVRWD;
- inspect existing land uses for compliance with local and state water quality protection regulations;
- cooperation among municipalities within MVRWD to control land uses in critical areas;
- cooperation among municipalities within MVRWD to purchase or acquire additional land for source protection;

SECTION 3

- support the return of the remaining Southwood properties to watershed protection or obtain conservation easements, per the New Hampshire Forest Program;
- support additional New Hampshire water source supply protection regulations;
- comprehensive monitoring of water quality in the watersheds and aquifer recharge area;
- maintenance of accurate maps that delineate watershed boundaries along with land use;
- coordination with state and local agencies in investigating contamination incidents;
- inspection and patrols of watershed resources;
- implementation of security measures on a priority basis;
- implement Best Management Practice to remediate non-point source contamination; and
- development of an emergency spill response protocol.

We also suggest that the new utility establish active watershed field inspection and procedures to mitigate the negative impacts of watershed land uses. These should include:

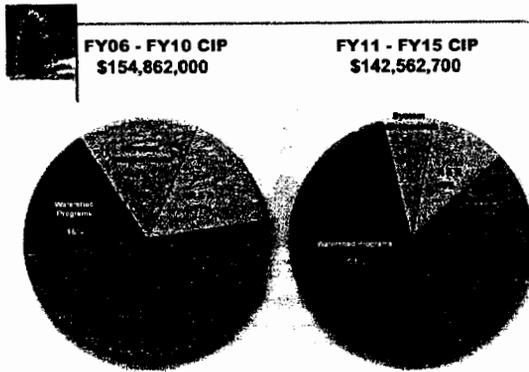
- Identify violations of state and local water supply protection regulations and inform land owners and appropriate enforcement agencies when violations occur.
- Recommend best management practices for unregulated land use that affects water supplies.
- Maintain records of chemical use and potential contaminant routes at specific sites for use in water quality investigations and land use risk assessment.
- Educate property owners and the employees of business establishments on the watershed about water supply protection issues.
- Ensure that land management techniques used at the utility's facilities and properties are exemplary and in compliance with all applicable State and Federal regulations to serve as a model for others.

The R. W. Beck team, including Tetra Tech, has in-depth experience in watershed management and is recognized locally and nationally for its technical and policy leadership in this critical area. Should the new community-owned utility wish to proceed urgently with development of the Resource Plan required by MVRWD Charter, we are very well suited and poised to do it.

OPTIONAL TASK 3 - Financial Consulting

Water utilities under government ownership have distinct financial advantages over investor-owned utilities (IOU) including no liability for dividend payments to shareholders, income taxes, or sales tax, and a significant advantage for lower cost capital borrowing, given current tax law.

Each of these advantages results in lower operating expenses or reduced debt service requirements when compared with an investor-owned system, which reduces the cost of service to water users. Also, the assets are owned by the community; as debts are paid down over time, equity accrues to the customers.



The new utility's Capital Improvement Plan must balance multiple needs including deferred maintenance.

Given these advantages, why do government-owned systems often struggle after acquisition of an IOU? R. W. Beck has observed several reasons why this occurs:

1. Initial capital needs under government ownership are underestimated upon acquisition.
2. Political pressures limit rate increases needed to sustain financial stability and cover debt.
3. Limited due diligence prior to acquisition leads to an incomplete condition assessment, so more capital investment is needed to correct deferred capital and maintenance problems unknown at acquisition.

4. Regulatory changes are not anticipated and built into the capital program or O&M cost structure.
5. Optimistic growth projections lead to higher projected future revenues than are realized.
6. Governments are sometimes out-negotiated by the IOU, resulting in a high purchase price.
7. The total cost of selling bonds, including consultant fees, bond counsel, underwriters and bond insurance, are not accounted for as part of the purchase price and debt structure.
8. Customers expect better customer service from a government-owned and operated system.

The 2003 report by Tetra Tech subsidiary Rizzo and Associates entitled, *Summary Report- Comprehensive Review, Pennichuck Water System, Nashua, New Hampshire*, provided a comparison of the system under IOU and City ownership. Based on their analysis, they predicted: *"Excluding inflation, rate increases under City ownership are projected to be 28% over the 20-year projection period. Rate increases under PSC ownership are projected to be 49.5%, almost twice the City scenario"*.

While one could argue the specifics of the projected rates, the City's lower cost of capital alone will result in a lower debt service payment to fund the utility's capital program, with reduced rate increases resulting. Nevertheless, the City must carefully construct a financial model for the utility prior to final acquisition. In preparation for this business modeling, the City may wish to take the following steps before taking possession of the utility:

1. **Initiate detailed engineering due diligence on system assets.** The City has been provided very limited access to the PWW sites and records. Prior to a final commitment to purchase price, the City should conduct site visits, condition assessments and record review to better understand deficiencies and capital needs. The previously referenced Rizzo report outlined a \$40 million 5-year capital need compared with \$24 million contained in the PWW annual reports with limited information. Our experience suggests that digging deeper will uncover more problems and higher capital needs.
2. **Engage a certified utility appraiser.** Appraisals of water systems should not be based on a single method of valuation, such as Replacement Cost New Less Depreciation (RCNLD), Comparable Sales, or an Income Approach. Rather, each of these methods should be investigated under the direction of a Certified Utility Appraiser, who can represent the City in final pricing negotiations and possible testimony in condemnation proceedings.

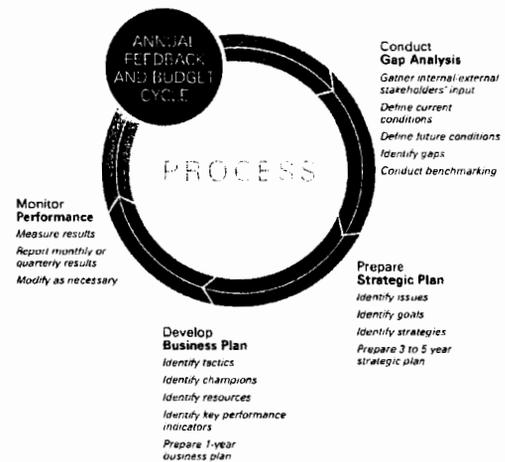
3. **Evaluate O&M costs and renewal and replacement needs.** Experienced plant operations personnel should review the existing O&M costs and R&R allowances. These costs should be reviewed considering likely increases resulting from enhanced treatment to meet new regulations.
4. **Review/revise CIP.** The PWW CIP should be reviewed to ensure compliance with regulatory changes, customer growth and infrastructure replacement needs. Population growth in Nashua and surrounding communities is significant. Accounting for the growth and establishing appropriate connection charges will be important to the new utility's future financial stability.
5. **Develop financial planning model.** Given the inputs from Items 1 through 4 above, a financial model is constructed to help calculate debt service coverage and projected rate increases. These tools allow the utility to analyze "what if", with input variables such as interest rates and timing of capital expenditures. Once developed, ongoing models become important planning tools for the utility's annual budgeting, rate setting and managing capital.

The figure on Page 3-19 summarizes how capital and operating costs can be incorporated into a financial planning system to develop an integrated asset management program and achieve financial equilibrium.

OPTIONAL TASK 4 - Strategic Planning

Many organizations fail to achieve their full potential because they lack organizational consensus on its mission and the strategy to achieve it. Conversely, organizations thrive when all stakeholders agree on and are energized about a clearly-defined strategy to achieve a common mission. Young organizations, such as the soon to be formed community-owned water utility to server greater Nashua, are particularly challenged to gain consensus on critical issues if only because of the lack of institutional history. These challenges can slow critical decision-making and prevent efficient governance and utility operation.

We are regularly involved in facilitating the strategic planning of major water utilities across the country. In the past few months alone, R. W. Beck completed strategic planning consultancies for utilities in San Diego, Kauai, and Nashville. As shown in the accompanying figure, our planning process follows a simple business model that promotes continuous improvement.



Our strategic planning process drives continuous improvements in utility operations.

The City and MVRWD may wish to complete a strategic planning process as an early action item once the community-owned utility is created and begins operations in earnest. The benefits to the utility would include: organizational alignment and stakeholder agreement on key challenges that face the utility in the near term and into the future; understanding the available core competencies and priority areas to close competency gaps to assure key performance requirements; establishing clear, consensus goals for the utility within the planning horizon; and documenting a consensus plan among all stakeholders of the strategic direction of the utility, along with the supporting tactics to achieve the planned strategy.

It is important that the utility grow and develop strategically to properly serve its customers. A key to the success of the process is staff involvement and support. The challenges faced by the City and MVRWD

will be dynamic as a result of creating the new community-owned utility. Key challenges include: the need for effective watershed management; debt financing for the acquisition and possible system renewal resulting from deferred maintenance; community acceptance and support of the new community-owned utility; implementation of effective management policies and procedures, particularly fiscal controls; recruiting and training key (leadership) staff; and maintaining fair, equitable and affordable rates which adequately cover the true cost of service. The new customer-owned utility must build a strong foundation to successfully manage these challenges.

The overall strategy of the utility must be integrated with day-to-day activities. It is important that these activities are developed as specific tactics, are measured to ensure completion and most of all, are budgeted as part of the business planning cycle so that strategic activities are, in fact, completed in the normal course of day-to-day business. The key to a successful strategic and business planning process is developing a document that has value and will be adopted and used. Our approach is to develop a simple but operative process, which integrates the strategic plan with the utility's annual budget cycle. This connection helps to insure that short- and-long term business strategies are accounted for in the City/District's annual budget planning process. It is recommended that the management of the new community-owned utility update and drive the strategic plan forward one year at a time and revise it on an annual basis. This will keep the plan current and responsive to changing economic, technical, and/or political conditions.

We offer the City and MVRWD a planning process that produces practical, flexible, and useful strategic and business plans. This process has been adopted by a number of leading water utilities across the country, including the Santa Clara Valley Water District and the Orange County Water District.

OPTIONAL TASK 5 - Grant Funding Assistance

The new utility will be faced with a variety of investment needs including addressing deferred maintenance, planning for system growth, and dramatically improving watershed management. The ratepayers may not be able to afford all of the investments that the utility leadership might recommend. Obtaining grants, special funding considerations and low cost loans are some of the ways public utilities use to address their capital requirements and stabilize rates.

We understand the financial needs of its public sector clients and has been very successful assisting utilities with procuring financing and grant funds. Our staff is experienced in all phases and types of State and Federal programs, including the Drinking Water Revolving Fund (DWRWF) loan programs; State Revolving Fund (SRF) loan programs; Community Development Block Grant (CDBG) programs; Rural Development Water and Waste Disposal grant and loan program; EPA's Environmental Programs and Management (EPM) Grants Program; Special Appropriations Projects (SPAPs) administered under EPA's State and Tribal Assistance Grants (STAG) Program; and many others.

EPA's current Environmental Programs and Management (EPM) account is funded at \$2.3 billion for the development of environmental standards; monitoring and surveillances of pollution conditions; direct Federal pollution control planning; technical assistance to pollution control agencies, and organizations; preparation of environmental impact statements, enforcement and compliance assurance, and assistance to Federal agencies in complying with environmental standards. The EPA's State and Tribal Assistance Grants (STAG) account is funded at \$3.9 billion. The STAG account funds grants to support the state revolving fund programs; state, tribal, regional, and local environmental programs; and special projects to address critical water and waste treatment needs.

R. W. Beck's subcontractor Tetra Tech has been very successful obtaining grant funding for its utility clients over the years. Grant applications prepared by Tetra Tech staff have been well received by State and Federal reviewers. Tetra Tech's grants staff is led by Nate Zill who has over 25 years of experience assisting clients by preparing grant application packages and providing guidance on regulation affecting grants programs.

We have developed and maintained good working relationships with the managers and staff of many of the funding program reviewing agencies. Tetra Tech has received recognition from the EPA and several State Departments of Environmental Protection or Quality for their role in the successful completion of complex projects, where multiple sources of funding were received that involved the construction of road, water, and sewer system improvements.

Most of the direct grant money will come from Federal Agencies and Congressional special amendments to Congressional Water legislation which will best be facilitated through personal contacts with New Hampshire's Congressman Charlie Bass, Senator Judd Gregg (a Nashua native and Chairman of the Congressional Budget Committee) and Senator John Sununu. Our team, including John Clements and Jeff Taylor, is uniquely well-positioned and experienced working both locally and federally to secure grant and loan funding. John, as previous President of the Highway Users Federation in Washington, D.C. and Principal Manager for Governmental Affairs for the Central Artery (Big Dig) Project has extensive experience negotiating the federal funding maze and knows the legislative staff that can best help achieve federal funding objectives.

Much of Mr. Taylor's success in implementing New Hampshire planning projects over the past 30 years has been his ability to attract grant funds. In Berlin, New Hampshire, Jeff successfully secured Community Development Block Grants and funds from the U.S. Economic Development Administration for the upgrade of Berlin's water distribution systems and storage facilities, for the construction of new roadways and bridges, and for the construction of an industrial park. While the Director of the New Hampshire's Office of State Planning, Jeff supervised the distribution of some \$12 million in grant funds annually, many of which were used to upgrade municipal water and other utility system. As a result of Mr. Taylor's experience within New Hampshire, he has developed an extensive network of connections within the executive and legislative branches of state government, as well as personal relationships with all four members of the Congressional delegation. These connections and personal relationships will serve the new utility well whether working to seek permits, licenses, or supportive pieces of legislation, as the community-owned utility moves forward.



R. W. Beck team staff has been active in government relations and funding for major projects in the region, including the Central Artery/Tunnel Project in Boston.

APPENDICES



A

APPENDIX A
CLIENT LETTERS
OF REFERENCE

In this appendix, we are providing client reference letters. We encourage you to contact the following client references, who can speak to our ability to exceed project objectives while maintaining budget and schedule.



South Central Connecticut Regional Water Authority
90 Sargent Drive, New Haven, Connecticut 06511-5966 203.562.4020
<http://www.rwater.com>

July 7, 2005

The Honorable Bernard A. Streeter
City of Nashua
229 Main Street
Nashua, NH 03061-2019

Re. Regionalization of Local Water Utility Assets – Recommendation for R.W. Beck

Dear Mayor Streeter,

Congratulations on your leadership working to take public control of the local water system. It takes courage, foresight and tenacity to regionalize these assets in order to provide the most cost effective and reliable water supply to the citizens in the greater Nashua area. I have followed your progress to a limited degree since my visit with you.

As you may know, this year marks the 25th anniversary of the South Central Connecticut Regional Water Authority. The Authority acquired the assets of the former New Haven Water Company in 1980 and it has been one of a very small number of successful water system regionalizations in the northeast in the past 25 years. Similar to the current situation in Nashua, local leaders had concerns about the cost and quality of service, governance of the utility and a particular concern about watershed protection as we undertook the Authority's creation and assumed control of the local water company.

As a charter member, I have served continuously on the Authority's governing board since its inception. I am writing to you at the request of R. W. Beck to confirm their involvement in the creation of the Authority and their continuous assistance ever since. An engineering based management consulting company, R. W. Beck began their involvement in the authority's regionalization process with valuation reports and engineering analyses in 1977. R. W. Beck consulted on a wide variety of engineering, financial, and business aspects of the regionalization. Subsequently, they advised us on the issuance of the municipal revenue bonds we secured to fund the acquisition, including the necessary certifications as our 'Independent Engineer'. R. W. Beck has continued these responsibilities for each of the subsequent 19 bond issues by the Authority to fund its capital program.

Over the years, the Authority has come to know R. W. Beck as a trusted business partner. As an Independent Engineer, it is clear that they always endeavor to put the needs of the Authority first. They don't compete for our design work and have never created a conflict of interest in this way. R. W. Beck's reputation in the bond market is excellent. This has been helpful to us in placing our bonds in the most favorable way. Their advice is sound, straightforward and timely. Furthermore, we have been fortunate to have the same staff involved for over 25 years. Jeff Clunie has provided us sound advice for all these years, and we commend him to you.

South Central Connecticut Regional Water Authority
90 Sargent Drive, New Haven, Connecticut 06511-5966 203.562.4020
<http://www.rwater.com>

If you have any questions about R. W. Beck, or if I can help you in any way with your regionalization, please call me.

Very truly yours,



Claire C. Bennitt
Chairperson

Board of Directors Ted Schrader, Susan Latvala, Rick Baker, Ann Hildebrand,
Pam Iorio, Mark Sharpe, Robert Stewart, Ronda Storms, Dan Tipton

General Manager Jerry L. Maxwell

General Counsel Donald D. Conn

2535 Landmark Drive, Suite 211, Clearwater, FL 33761-3930
Phone: 727.796.2355 / Fax: 727.791.2388
www.tampabaywater.org



July 11, 2005

Bernard A. Streeter
Mayor
City of Nashua
229 Main Street
Nashua, NH 03061-2019

Re: Regionalization of Local Water Utility Assets – Utilization of R.W. Beck, Inc.

Dear Mayor Streeter:

I was asked by R.W. Beck to prepare a letter of reference regarding their performance on Tampa Bay Water projects. I also understand that you are moving forward with ownership of local water supply facilities. From our own experience, we know of the many challenges you and the several governments in the area face to regionalize these assets in order to provide the most cost-effective and reliable water supply to the citizens in the greater Nashua area. Good luck with your on-going efforts in this regard.

As you may know, Tampa Bay Water was created as a regional water authority in 1998 to address pressing regional water supply issues for over two million citizens in the greater Tampa area. This is an alliance of six local governments: the counties of Hillsborough, Pasco and Pinellas, and the cities of New Port Richie, St. Petersburg and Tampa. With limited water supply in the area, and a rapidly growing population, it was critical for the local communities to come together to collaborate—rather than compete—to assure safe and adequate water for everyone in the region. It took over two years of active governance discussions to create this new Authority from the predecessor agency (West Coast Regional Water Supply Authority). But, seven years later, it is clear that the creation of Tampa Bay Water is successfully achieving the goal of assuring a safe and abundant water supply for the entire Tampa Bay region, at a fair price.

Since the inception Tampa Bay Water, R.W. Beck has provided us with a variety of engineering based management consulting services and has advised us on procurement strategy, assisted with the development of all key procurement documents, assisted with contract negotiations, and provided oversight of some major design, construction, commissioning and operations contracts valued at over \$75,000,000.

We consider R.W. Beck to be an industry leader in procurement and contractor oversight in the water industry. They don't compete for our design work and don't team with operations vendors on other projects. Therefore, they have never created a conflict of interest in this way. We value R. W. Beck as a trusted business partner. Their advice is sound,

Kenneth R. Herd
July 11, 2005
Page 2



straightforward and timely. Furthermore, we have been fortunate to have the same staff involved on our projects since the Authority's creation. In particular, Neil Callahan and Joe Dysard have provided excellent contractor oversight for us. They are former utility executives; their hands on experience operating water utilities make them invaluable advisors.

If you have any questions about the performance of R.W. Beck on our projects, or if I can help you in any way with your regionalization, please call me.

Sincerely,

A handwritten signature in cursive script that reads "Kenneth R. Herd".

Kenneth R. Herd, P.E.
Director of Operations and Facilities

OFFICE OF THE
SUPERINTENDENT



THE CITY OF WATERBURY
Bureau of Water

21 EAST AURORA STREET

WATERBURY, CONNECTICUT 06708

The Honorable Bernard A. Streeter, Mayor
Office of the Mayor
City of Nashua
229 Main Street
Nashua, NH 03061-2019

July 11, 2005

**Re: Oversight Services for Private Contract Operations of New Water Utility
Reference Letter for Paul B. Doran, P.E.**

Dear Mayor Streeter:

I have been made aware of your executive leadership in the City of Nashua's aggressive efforts to pursue public ownership of the privately-held water system, through the legal mechanism afforded by New Hampshire Law. It takes a great deal of courage and tenacity to navigate the many obstacles that are ever-present in creating a public utility.

I understand that the City's intention is to add a minimum number of City employees when the water system is ultimately publicly acquired. The City has chosen to manage and operate the City's new water utility with the use of a private operations firm. In addition, the City is procuring a contract oversight firm that will act as the City's auditor, management and owner's advisor regarding the private operations contract.

The City of Waterbury, through its locally controlled Bureau of Water, is responsible for providing high quality water to its citizens, with sufficient volume and pressure for fire protection. As the Superintendent of Water in charge of the Bureau of Water's activities, I am writing you at the request of Mr. Paul B. Doran, P.E. of R.W. Beck, Inc.

The Bureau of Water has used private contractors to operate and maintain its water treatment plant for 16 years. In March of 2003, four months prior to the existing operations contract expiration, the Bureau of Water began the process of re-procuring a private operator. The Bureau of Water retained the services of Mr. Doran as an independent owner's advisor to provide expertise in: developing a re-procurement process, reviewing and rating proposals received, performing the interviews and conducting contract negotiations with the selected private contractor. Employed by another firm at the time, Mr. Doran always conducted himself in a professional manner, was instrumental in the success of the re-procurement and offered sound guidance throughout the process.

Working with Mr. Doran, I found him to be proficient in the many complex issues of private operations and maintenance services, in the technical and engineering aspects of operations and highly responsive in serving the needs of the Bureau of Water. I would wholeheartedly endorse Mr. Doran services for oversight services in Nashua.

If you have any questions about the specific services Mr. Doran provided or if I can offer my personal experience with private contract operations, please contact me at your convenience at (203) 574-8250.

Very truly yours,

Kenneth R. Skov
Superintendent of Water

cc: Brian S. McCarthy, Board of Aldermen

Office of
SEWER & WATER DEPARTMENT
ROBERT TOZESKI
SUPERINTENDENT



TELEPHONE
(508) 841-8506
FACSIMILE
(508) 841-8497

TOWN OF SHREWSBURY

SHREWSBURY, MASSACHUSETTS 01545-5398
Richard D. Camcy Municipal Office Building
100 Maple Avenue
Shrewsbury, Massachusetts 01545-5398

July 8, 2005

City of Nashua
229 Main Street
Nashua, NH 03061-2019

**Re: Letter of Recommendation
City of Nashua
Water Utility Oversight Services**

Mayor Streetcr:

Over the past 15 years, the Town of Shrewsbury has experienced some of the highest population growth rates of any community in Massachusetts. Back in the mid 1980's we were facing this projected growth with an aging and inadequate water supply and distribution system. Jack Henderson led a team of engineers that evaluated the adequacy of our existing system and identified the critical weaknesses and deficiencies in our supply and distribution system. Under his direction, we rehabilitated several existing well supplies and installed a new high yield well to serve as a redundant supply for our single largest well, the Home Farm well. Mr. Henderson also led the design and permitting team for our new state-of-the-art Home Farm Water Treatment Plant which today is the backbone of our water supply system.

Mr. Henderson also prepared a computerized model of our distribution system which includes four different pressure zones, three major water booster pumping stations and three pressure reducing valves to control the flow of water between the various pressure zones. The distribution model generated a comprehensive and prioritized list of capital improvement projects totaling approximately \$28 million including pumping and piping improvements. This Capital Improvements Plan (CIP) has been the road map for the Town of Shrewsbury's system improvements for the past decade.

Jack always provided the Town of Shrewsbury with responsive, cost-effective and technically sound services. Based on our experience working with Jack and my understanding of the City of Nashua's need for a team to provide water utility oversight and engineering services, I would recommend him to the City of Nashua.

Very truly yours,

A handwritten signature in cursive script that reads "Robert Tozeski".

Robert Tozeski
Superintendent of Water and Sewer



B

APPENDIX B
RESUMES OF
PROJECT TEAM

In this appendix, we have placed summary resumes of our project team. Upon request, we would be happy to furnish detailed resumes for each individual.

The table on the next page highlights our project team members' experience.



APPENDIX B

| Name | Project Role | Years of Experience | Education |
|--------------------------|----------------------------|---------------------|---|
| Paul Doran, P.E. | Project Manager | 30 | B.S., M.S. - Civil Engineering |
| Stephen Gates, P.E., DEE | Principal-in-Charge | 29 | B.S. - Civil Engineering |
| Jeffrey Clunie | Finance & Administration | 32 | B.A. - History M.B.A. - Financing |
| Joe Dysard, II | Operations & Maintenance | 34 | B.A. - Business Administration A.S. - Computer Science |
| Jack Henderson, P.E. | Planning & Engineering | 20 | B.A. - Geography B.S. - Civil Engineering |
| John Clements | Govt & Community Relations | 40 | B. S - Engineering |
| James Huiting | Security | 23 | B.S. - Civil & Env. Engineering |
| Ian Catlow | Hydraulic Modeling | 15 | B.S. - Civil Engineering |
| Richard Sperandio, P.E. | Construction Management | 30 | B.S. - Civil Engineering |
| Neil Callahan | Procurement | 27 | B.S., M.S. - Environmental Science |
| Edward Wetzel, Ph.D. | Regionalization | 25 | B.S. - Civil Engineering M.S. - Civil and Sanitary Engineering Ph.D. - Sanitary Engineering |
| David Jochim, P.E. | Strategic Planning | 30 | B.S. - Civil Engineering M.S. - Hydraulic Engineering |
| Kyle Rhorer | Business Modeling | 16 | B.A. - Quantitative Economics MBA - Environmental & Natural Resources Management |
| Edward Ionata | Permitting | 30 | B.S. - Natural Resources M.S. - Forest Science |
| Andrew Woodcock, P.E. | Asset Evaluation | 15 | B.S., M.S. - Engineering M.B.A. |
| Jeff McGarvey | Cost of Service / Rates | 10 | B.S. - Finance |
| Nathan Zill | Grants & Loans | 28 | B.S. - Natural Resources |
| Leslie Shoemaker | Water Resources Management | 20 | B.A. - Mathematics M.E., Ph.D. - Agricultural Engineering |
| Jeffrey Taylor | Govt & Community Relations | 31 | B.A. - Geography Graduate Study - Architecture |

Paul B. Doran, P.E.

Mr. Doran joined R. W. Beck in 2004 and serves as a Senior Water Consultant in the National Owner Advisory Services Practice. Having over 30 years of consulting experience in sanitary, environmental and general civil engineering, Mr. Doran has served in the roles of a Project Manager, an Associate Engineer, a Director and a Principal Engineer. In these various roles, Mr. Doran designed, managed construction and managed major projects in municipal wastewater treatment, industrial wastewater pretreatment, municipal and industrial wastewater collection systems, pumping stations, water distribution systems, water treatment, sewer system evaluation surveys, stormwater abatement, combined sewer overflow abatement, sewer separation, and evaluated the applicability of public/private partnerships through procurement of private industry responses to RFP's. Prior to joining R. W. Beck, Mr. Doran was the Director of Engineering for a management consulting firm that specialized in independent engineering reviews and procurement of municipal Design/Build (D/B) and Design/Build/Operate (D/B/O) alternative delivery projects

PROJECT EXPERIENCE

Procurement for Operations and Maintenance of 25-MGD Water Treatment Plant; Preparation of an RFP, Evaluation of Proposals and Contract Negotiations for Private Operations

Waterbury, Connecticut

Project Manager. A private contractor had operated the City of Waterbury's water treatment plant since it was constructed. Prior to the expiration of the existing contract, Mr. Doran served the City, through its Bureau of Water, by providing technical and financial assistance in preparing an RFP for continued private operation and maintenance of the plant for a period of an additional five years. Mr. Doran also assisted in evaluation of private proposals received, negotiated and prepared the draft service contract for continued private operations and maintenance of the plant.

Preparation of RFP, Evaluation of Proposals and Contract Negotiations for Design, Construction and the Long-Term O&M

Plymouth, Massachusetts

Project Manager. Mr. Doran assisted in several aspects of their procurement to design, build, operate and maintain a new wastewater treatment plant, and operate and maintain a new pump station and force main for a 20-year term. Provided strategic guidance for this public/private partnership on technical, business, and contract issues to aid in structuring the RFP; assisted with RFP preparation, review of proposals, design review, construction monitoring, and operations monitoring of the D/B/O and D/B private contractors; and served as Program Manager, overseeing the work of all parties during the design and construction of the new plant.

Northeastern University
B.S. in Civil Engineering
M.S. in Civil Engineering

KEY EXPERTISE

Innovative Procurement of Design/Build, Design/Build/Operate and Contract Operations Alternative Project Delivery Options

Negotiation/Monitoring of Private Vendor Service Contracts

Asset Management Programs for Municipalities and Utilities

Technical and Business Assessments/Reviews of Water/Wastewater Facilities

Independent Engineering Reviews of Water /Wastewater Utilities

Optimization of Water/Wastewater Facilities

Design and Construction Management

Adjunct Faculty in Civil/Environmental Engineering

Project Role:
Project Manager



Innovative Procurement of Design/Construction Administration/Operation of Wastewater Treatment Facilities and Collection System Pump Stations for 20 Years

Sioux, City, Iowa

Project Manager. Mr. Doran managed an innovative design-operate (D/O) procurement for the City that integrated a number of professional services: preparation of an equipment evaluation report that identified the treatment plant and pumping station upgrades necessary for the next 20-year design period, preparation of an operations evaluation report, and preparation of a feasibility study for a new treatment plant to replace the existing plant. Mr. Doran developed an engineering and economic assessment of needs to upgrade the existing 30 MGD wastewater treatment plant and comparing that to an alternative for the relocation, design, and construction of a new facility within the regional service area. The study concluded it would be more economical to upgrade the existing plant and to use its remaining useful life. Coordinated the efforts of and worked with the Mayor, the City Manager, the Director of Environmental Services, the City Attorney, the Citizen's Advisory committee and a local engineering firm.

Preparation of RFP, Evaluation of Responses, and Contract Negotiations for Long-Term (20-years) Contract Operations, Sale or Lease of Wastewater Treatment Plant and Pump Stations, and Design/Build for CSO and Other Capital Improvements

Taunton, Massachusetts

Program Manager, Construction Manager, Project Manager. As one of the first D/B/O projects in Massachusetts and the United States, Mr. Doran prepared a comprehensive Request for Proposals for either the 20-year contract operations, or sale or lease of the City's 9 MGD wastewater treatment plant and collection system pump stations. In addition, Mr. Doran also solicited proposals from private contractors to continue the existing City practices of short-term private contract operation. The RFP presented a unique "menu" approach to provide the City with a choice of multiple proposals. Private contractors were to be responsible for financing, design and construction of capital improvements, a portion of which were CSO projects. Once into construction, Mr. Doran provided the City with design review, construction monitoring, construction management and service contract monitoring and oversight services. Mr. Doran monitored and recommended approval of the start-up services and acceptance testing of the completed facility. He also reviewed the first seven years of the private operator's operation and maintenance practices and prepared yearly detailed reports summarizing the performance of the private vendor. Annually, Mr. Doran prepared the year-end financial summary and met with the private contractor to approve the annual settlement statement for operation and maintenance costs.

Design/Build Procurement, Contract Negotiation, Project Management and Contract Monitoring for Wastewater Treatment Plant and Air Pollution Control Upgrade of the Sludge Incinerators

Upper Blackstone Water Pollution Abatement District, Millbury, Massachusetts

Project Manager, Construction Manager. Mr. Doran was the Project Manager and Construction Manager for the District's upgrade project at its 56 MGD wastewater treatment plant, the first public/private D/B wastewater project in the Commonwealth of Massachusetts. The project, under a strict DEP Consent Order, included major air pollution retrofits and upgrade to the solids handling/incineration complex. Mr. Doran conducted the following activities: permitting, developing a procurement strategy, preparing requests for proposals, assisting in proposal evaluation, contract negotiations, design review, construction monitoring, and monitoring of acceptance testing. Responsibilities included managing the efforts of a consulting engineering firm that provided the detailed resident engineering and construction management services. Facility start-up was successfully completed and acceptance testing has been completed. All requirements of the Consent Order were met.

Stephen R. Gates, P.E.,
DEE

Tufts University
B.S. in Civil Engineering, Cum Laude

Mr. Gates, who recently joined R. W. Beck as a Client Services Director for the Boston Office Water/Waste Practice, has 29 years of environmental engineering experience providing program management, management consulting, facilities planning, detailed design and construction management for a wide variety of environmental engineering projects throughout Northeastern United States and Canada. He has successfully planned, designed, and managed construction of environmental facilities for public and commercial clients valued well over US\$2 billion. He is highly experienced in alternative project delivery methods, including design/build contracting and program management.

Project Role:
Principal-in-Charge

EXPERIENCE

Public Sector Projects

Project Manager

Mr. Gates directed a wide variety of projects for federal, municipal and county governments. He managed projects, including master planning, facilities and feasibility studies, permitting, design and construction management for water supply and distribution; wastewater collection, conveyance and treatment; solid waste management-land filling and incineration; and hazardous waste management. Mr. Gates managed facilities permitting, including the then largest (3,000 TPD) mass burn solid waste incinerator ever built. He wrote program policy and guidance documents for EPA, COE and HUD.

MWH Global, Inc.

Program Management Global Practice Unit

Project Development

In select geography, Mr. Gates led MWH's Program Management Practice, providing vision, strategic direction, leadership and resources to create, acquire and support Program Management engagements. He worked to maintain MWH's highly regarded reputation and track record for successful program management engagements through team building, resource allocation, and the development and deployment of best practices among all MWH programs.

MWH Americas

Client Service Manager

New York City/President

Previously, as Corporate Officer-in-Charge, Mr. Gates directed all work performed by MWH for the NYC Department of Environmental Protection, including the East of Hudson Dams Rehabilitation; Hillview Reservoir Chamber Improvements; Facilities Planning for the Interim Upgrade of the Rockaway Water Pollution Control Plant; Citywide



Collection System SCADA System; and the Advanced Wastewater Treatment Program Management Assistance contracts. In this capacity, Mr. Gates directed all project activity and assured the focus of MWH's senior management on high quality service to NYC DEP through appropriate staffing, attention to established quality assurance protocols, and active oversight of project management and contract administration, to meet customer needs and to assure that project goals were met to the satisfaction of NYCDEP. With 9 million customers, NYC DEP is among the largest water utilities in the world. During this assignment, Mr. Gates directed a Needs Analysis and Functional Requirements Report for a comprehensive Project Management Information System (PMIS) to assist the Department with management of its US\$16.5 billion 10-year capital improvement plan, and the implementation of a proof of concept PMIS.

MWH Americas, Inc.

Northeast Region Manager

Until his assignment to serve the needs of NYC DEP on a full-time basis, Mr. Gates was responsible for MWH's operations throughout the Northeastern United States and Canada. He oversaw all project activity, including significant environmental engineering projects for the Massachusetts Water Resources Authority, the New York City Department of Environmental Protection, the Hartford Metropolitan District Commission, the Providence Water Supply Board and the cities of Trenton and Newark, New Jersey, Cambridge, Massachusetts and Ottawa, Ontario.

Collection System SCADA Master Plan

**Massachusetts Water Resources Authority
Project Director**

Mr. Gates managed completion of a comprehensive Master Plan for the implementation of a centralized system for automatic monitoring and control of all facilities owned and operated by the Sewerage Transport Division of the Massachusetts Water Resources Authority (MWRA). The Transport Division is responsible for the operation of all the Authority's Pumping Stations and CSO facilities. The Master Plan evaluated alternative means and defined the most appropriate level of centralized monitoring and control for MWRA's 1.2 billion gallon-per-day (GPD) wastewater collection and transport system, which serves approximately 2 million customers in and around Boston, Massachusetts. The Master Plan also provided detailed implementation recommendations for the proposed SCADA and computerized control system, considering organizational development and training needs, purchasing constraints, and technical requirements.

Central Artery/Tunnel Project

**Massachusetts Highway Department - Environmental Services Contract
Deputy Project Director**

Mr. Gates directed work plan development and managed permitting, engineering, design and construction tasks on a \$50,000,000 services contract for the Massachusetts Highway Department, Central Artery/Tunnel Project. He managed environmental audits, assessments, and remediation designs at 250 sites throughout Boston in support of highway construction involving excavation of 13 million cubic yards of urban fill. Mr. Gates also managed negotiations of Memos of Understanding (MOUs) on the requirements of federal, state and local environmental regulations with stakeholder agencies. Construction progress on the \$14.5 billion project remains largely unimpeded by environmental issues.

Jeffrey F. Clunie

Mr. Clunie is Chairman of the Board of R. W. Beck, Inc. He has worked at R. W. Beck since 1973. He is also Client Services Director of the Water/Wastewater/Waste Management Group. His areas of specialization include project development, vendor procurement, contract negotiations, risk assessment, and the preparation of consulting engineer's reports used in the financing of infrastructure projects. Mr. Clunie has served as Project Manager for more than one hundred solid waste management and water/wastewater projects, prepared for both public and private sector clients. He has also managed portfolio power project reviews and other independent power projects.

Mr. Clunie has served as the Project Manager for the preparation of more than 70 Independent Engineer's Reports used in the issuance of more than \$7.0 billion of revenue bonds, for infrastructure projects including waste management facilities, water and wastewater treatment facilities, hydroelectric projects and international power projects. The size of the financings has ranged from \$7 million to \$370 million. He understands potential investors' concerns regarding technology, environmental, contractual and financial issues. As part of his responsibilities during preparation of these reports, Mr. Clunie has made numerous presentations to the rating agencies and bond insurance companies. He has also played a leading role in helping with the creation and development of joint-action public utilities, including water authorities and solid waste authorities.

Mr. Clunie has published a number of papers addressing financial risk, risk sharing, and the elements necessary for a financeable project.

AREAS OF EXPERTISE

Mr. Clunie has served as Project Manager for the procurement of full-service vendors to either: operate; design, build and operate; or design, build, own and operate water/wastewater utility facilities.

Cranston Wastewater Treatment System

Banque Paribas, Cranston, Rhode Island

Project Manager. Mr. Clunie served as the Project Manager in preparing an Independent Engineer's Report, on behalf of the project lender, regarding the proposal by the City of Cranston, Rhode Island to privatize its 23 MGD wastewater treatment and collection system. The report included a review of technical, environmental, and economic aspects of the project; it also included: a review of the current condition of existing facilities; technical review of proposed capital improvements; the current status of all permits; prior violations of permit conditions; the prior experience of the selected operator and the EPC contractor; identification of replacement operators; the adequacy of performance tests; the reasonableness of liquidated damages payments; and a detailed review of the commercial terms, payment provisions, performance

Colby College
B.A. in History

Boston University
M.B.A. in Finance

Babson College
Graduate Studies in Federal Taxes

Project Role:
Finance & Administration



incentives and penalties, as well as the division of responsibilities between the parties to the agreement. R. W. Beck reviewed the capabilities of the Contract Operator to provide operations, maintenance, and repair and replacement over the 25-year contract life as projected in the Contractor Operator's bid. R. W. Beck also developed projected operating results over the term of the financing including a series of sensitivity analyses which addressed potential changes to the base case.

South Central Connecticut Regional Water Authority

Project Manager. Mr. Clunie has worked for SCCRWA on a regular basis since assisting in its creation in 1980. He has served as Project Manager in providing numerous services, including: periodic technical reviews for the purposes of financing and reporting to SCCRWA's bond trustee; expert testimony; property value appraisal services; and preparation of the Consulting Engineer's Report for SCCRWA's 16 revenue bond financings.

His first assignment for SCCRWA was a feasibility study of SCCRWA's acquisition of a major investor-owned water utility, the New Haven Water Company. The study included a technical review of all of the Company's major water system facilities and a survey of their operations and maintenance to ascertain the value and condition of each asset; the ability to finance the acquisition, and the impact on ratepayers. R. W. Beck prepared the Consulting Engineer's Report used for financing SCCRWA's purchase of the Company, and for initial capital improvements. Since the first assignment, R. W. Beck has served SCCRWA as its Consulting Engineer for each of its subsequent financings. In total, R. W. Beck has assisted SCCRWA in the issuance of approximately \$500,000,000 of revenue bonds since inception.

Tampa Bay Water Authority

Project Manager. Mr. Clunie is currently serving as the Project Manager for the development of an Independent Engineer's Report to be included as part of the financing of a seawater desalination project being developed on behalf of the Tampa Bay Water Authority. The project is to be capable of processing 25 million gallons per day of seawater into drinking water. The report addresses the technology to be employed (reverse osmosis), the capital cost of the project, status of permits, operating expenses, operating revenues and the development of projected operating results.

Independent Engineering Assessment

Town of Smyrna, Delaware

Project Manager. Mr. Clunie served as Project Manager for the preparation of an Independent Engineering assessment for a bond financing report to fund the Town's water and sewer facility capital improvement program. The report included a financial analysis of the Town's water and sewer revenues, operating expenses, operating and maintenance practices, capital improvement program, water and sewer facilities, and regulatory compliance.

Henrico County, Virginia

Mr. Clunie participated in the preparation of the Consulting Engineer's Report used in the financing of Water and Sewer System Revenue Bonds issued by County, Virginia in 1975 to help fund the capital cost of the County's improvement program. Included among the improvements were sewer collectors and extensions.

Joe A. Dysard, II

Mr. Dysard is a Senior Director in R. W. Beck's Infrastructure practice with over 32 years of experience in the water and wastewater industry. Prior to joining the firm in 1996, he spent over 25 years with a major investor-owned water utility holding company. While with the investor-owned water utility holding company, Mr. Dysard spent seven years as President of various companies under his direction in seven states. Mr. Dysard specializes in utility operations management, strategic planning, acquisitions and mergers, organizational restructuring, public/private/partnerships, and contract management.

In his executive role for the utility, Mr. Dysard played a key role in infrastructure planning, evaluation, scheduling, and implementation for treatment facilities, transmission and distribution systems, and collection systems throughout the Southeast, East, and Midwest United States. He supervised engineering personnel in the evaluation/cost-benefit analysis of individual capital projects ranging in size from \$100,000 to \$30,000,000 per project. He has managed multidisciplinary teams bringing together engineering, rates, planning, legal and outside contractors/consultants in the areas of systems consolidation, infrastructure improvement, unified pricing, and management audits.

Mr. Dysard has been involved with:

- 16 wastewater systems in 5 states
- 81 water systems in 15 states
- 15 wholesale sales water systems in 8 states
- Regulatory liaison for over 30 projects
- Project Management for Independent Engineering Reviews

Mr. Dysard has served on various committees for state and national industry associations such as AWWA, NAWC, NARUC, Capital Region Water Board, and PA Water Utility Council.

RELEVANT PROJECT EXPERIENCE

Operations & Maintenance Efficiency Review

City of Garden Grove, California

Lead Technical Advisor. As part of an overall financial master plan performed by Garden Grove Sewer District (GGSD), Mr. Dysard provided a detailed analysis of the GGSD Wastewater Maintenance Department programs, procedures and processes with recommendations regarding staffing, preventive maintenance, potential outsourcing and improvements in automated documentation control. Mr. Dysard also provided comparative benchmarks for similar wastewater collection systems.

Antioch College
B.A. Business Administration

Terra Tech
A.S. Computer Science

Project Role:
Operations & Maintenance



Management/Operations Review

City of Hamilton, Ohio

Lead Technical Advisor. R. W. Beck has been retained by the City of Hamilton, Ohio Department of Public Utilities to assist the City in reaching its goal of improving the provision of all aspects of utility services which include electric, water, wastewater and gas services. Mr. Dysard was responsible for conducting interviews of management and staff in the water and wastewater city support divisions and gas distribution division; evaluating responses and providing recommendations for improvement. He also facilitated strategic planning sessions and reviewed all organizational staffing requirements. Mr. Dysard was also responsible for conducting condition assessments of the water and wastewater plants and process reviews.

Cranston Public / Private Partnership

Banque Paribas, New York

Assistant Project Manager. Mr. Dysard provided technical assistance with respect to the privatization of Cranston, Rhode Island's 23-mgd wastewater treatment plant and collection facilities. This project involved a 25-year lease, operation, maintenance, and capital improvement program. Mr. Dysard evaluated existing facility conditions, private contract operators, predictive and preventive maintenance programs, O&M manuals, risk assessment, projected operating costs, staffing requirements, and division of responsibility between the parties to the agreement for the lenders.

Facility Condition and Valuation Assessment

Confidential Client, Orlando, Florida

Technical Advisor. Mr. Dysard was responsible for technical review of water, wastewater, and reclaimed water systems for a confidential entertainment industry client. The project was to perform an annual conditions review and provide a system valuation study related to a refinancing. This included on-site visual observation of facilities, O&M review, useful life determination, and an assessment of regulatory compliance.

66 MGD Surface Water Treatment Plant

Tampa Bay Water, Tampa, Florida

R. W. Beck's role has included procurement, negotiations, construction monitoring and contract administration. Went into service in August 2002 and is going through Acceptance Testing and R. W. Beck will continue to work with Tampa Bay Water through construction closeout. The project construction costs are approximately \$100 million.

Procurement and Negotiations

Tampa Bay Water, Clearwater, Florida

Project Manager. Mr. Dysard is providing project management direction for multiple capital improvement projects. This involves contract procurement and negotiation services for both traditional and alternative delivery projects. These include development and implementation of requests for qualifications, risk management strategies, requests for proposals, service agreements, selection of contractor and final negotiations. Individual projects vary in magnitude from \$10s of millions to over \$100 million per project. Mr. Dysard also assisted in the independent engineering review for project financing related to certain projects.

Mr. Henderson is a Senior Project Manager and water supply engineering expert in Tetra Tech's Infrastructure Practice with more than 20 years of experience in all aspects of planning and engineering for water supply, treatment and distribution networks for public water supply systems. His expertise ranges from the study, piloting, design, construction and startup of water treatment plants to water supply master plans and engineering reports. This experience includes groundwater and surface water management and development plans, distribution system modeling studies, and the design of distribution storage and large diameter transmission and pumping facilities. Mr. Henderson has played key roles in infrastructure planning, evaluation, design and implementation of water treatment and distribution system facilities throughout the United States, South America and the Middle East.

Mr. Henderson has a strong background in hydraulics for pumping and transmission systems, and for distribution system modeling. He has led engineering teams for municipal clients to develop and evaluate comprehensive and cost-effective Capital Improvement Plans (CIPs) ranging from \$28 million to more than \$450 million in prioritized system improvements. Furthermore, he has been the lead design engineer for many of the infrastructure improvements recommended by the CIPs.

Specific areas of expertise in water treatment and process design include Dissolved Air Flootation (DAF), membrane treatment, *Cryptosporidium* control, disinfection byproducts control, ozone and biologically active granular-activated carbon filters and all aspects of conventional treatment. Mr. Henderson has been a member of both UV and Desalination Strategic Initiative Teams. He currently serves as the Vice Chair of the New England Water Works Association Filtration Committee and was appointed to the Association's Ad Hoc Committee to provide comment to the EPA on the proposed Disinfection Byproducts Rule and the Stage 2 Long Term Enhanced Surface Water Treatment Rule. Mr. Henderson also serves as the Chairman of the Board of Health for his home community.

RELEVANT PROJECT EXPERIENCE

Water System Master Planning and Design

Water Facilities Master Planning and Improvement Project, Shrewsbury, Massachusetts. As the Project Manager for the water facilities improvement project, Mr. Henderson led a team of engineers which evaluated the water supply and distribution systems for this rapidly growing community. A computer model of the town's water distribution system was developed and used to analyze and identify major deficiencies and to develop a comprehensive \$28 million, prioritized CIP. Mr. Henderson was the Design Manager for a new 1.25-mg steel water storage tank, a new 1.25-mg pre-stressed concrete water tank and a new 1-MGD booster pumping station which were identified as priority projects in the CIP. As the Project Manager, Mr. Henderson

John M. (Jack) Henderson,
P.E

Middlebury College
B.A. Geography

Worcester Polytechnic Institute
B.S. Civil Engineering

Professional Associations

American Society of Civil Engineers

Chairman, 1998 ASCE National
Convention,

Local Organizing Committee
ACEC Environmental Affairs
Committee

Boston Society of Civil Engineers

- Management Committee, Chair

American Water Works Association

New England Water Works Association

Groundwater Committee

Filtration Committee, Vice Chair

Program Committee

Ad Hoc Committee on Stage 2

DBP/LT2 Rule

National Water Well Association

Project Role:

Planning and Engineering



was responsible for the design and construction of two large diameter gravel packed wells to augment the town's water supply and the design of a 4.4-MGD water treatment plant to remove volatile organic chemicals, control dissolved manganese, and lower the corrosivity of the water from the largest single groundwater production well in Massachusetts.

South Weymouth Naval Air Station Redevelopment Project, LNR Property Corporation, Weymouth, Massachusetts. Mr. Henderson is the project manager responsible for developing the water and wastewater infrastructure for the redevelopment of the former naval air station. The project is a sustainable, "smart growth" approach to development and is currently the largest single development project in the State of Massachusetts. The project requires the development of a regional water supply capable of meeting the average day base demand of 1.5 MGD of potable water, 0.5 MGD of irrigation water and an on-site wastewater treatment plant designed for a maximum day flow of 3.0 MGD and capable of treating the wastewater to reuse standards required for irrigation water. A membrane bio-reactor process has been proposed for the wastewater treatment facility. A 5-10 MGD seawater desalination plant with membrane filtration followed by Reverse Osmosis RO membranes has been proposed and is being studied as the most attractive water supply alternative capable of economically meeting the developments' demands as well as a thoroughly documented regional water supply deficit.

Blue Hills Covered Storage Facility, Massachusetts Water Resources Authority (MWRA), Boston, Massachusetts. Mr. Henderson is the project manager for the conceptual design and Owner's Representative Services for the design-build delivery of two 10 million gallon covered water storage tanks. Both cast-in-place and wire wound pre-stressed concrete (AWWA D10 Type III) tanks are being considered. The conceptual design included the siting, sizing and hydraulic design for the tanks and conceptual cost estimates as well as an evaluation of the pros and cons of the two basic construction methods for water storage tanks. The hydraulic evaluation included extensive Computational Fluid Dynamic (CFD) modeling of the distribution system and the storage tanks to determine the appropriate hydraulic elevation and tank design to promote fill and drain cycles and to recommend an inlet-outlet design to maximize mixing within the tanks to best maintain chlorine residual and water quality within the tank.

Walnut Hill Water Treatment Plant, Massachusetts Water Resources Authority (MWRA), Marlborough, Massachusetts. Project manager for the planning, site selection and conceptual design of a 405-million gallons per day (MGD) filtration facility and a 50-million gallon (mg) clear well for the MWRA. The process facilities included dissolved air flotation clarifiers, ozonation, biologically active carbon filters, and corrosion control. The conceptual design included the evaluation and optimization of process performance and design criteria, as well as facilities layout and control strategies. Mr. Henderson was also the Design Manager for final design of chemical feed systems, residuals treatment and handling systems, the intake systems and raw water transmission modifications and rehabilitation, and the plant waste systems. As Design Manager, Mr. Henderson was responsible for the evaluation and rehabilitation of the 100-year old Wachusett Aqueduct Intake. The project required the demolition of existing 48-inch gate valves and turbine generator piping in this historic landmark facility and the installation of new sleeve valves and piping designed to control flows from 25 MGD to 325 MGD and to burn more than 100 feet of excess hydraulic head without damage to the valves, piping or historic structure.

Water Facilities Master Planning and Improvement Project, Stoughton, Massachusetts. As part of an evaluation of the town's overall water supply system, Mr. Henderson conducted a computerized model study of the Town's distribution system which was used as the basis for developing a prioritized Capital Improvement Plan. Mr. Henderson was also responsible for the exploration testing, design, and development of the remaining groundwater supplies within the town. This work included a town-wide hydrogeology study, the testing, permitting and design of the required pumping and treatment facilities for the Cedar Swamp well field, and a fractured bedrock test well investigation program.

John A. Clements, P.E.

Yale University
B.S., Engineering

Project Role:
Government and Community Relations

Mr. Clements has extensive experience in executive management for both corporate and governmental organizations in New Hampshire, New England and the United States. He has served in government leadership positions at the local, state, national and international level where he has developed special talents in building public and private consensus in highly contentious and controversial projects. In addition he has held senior management positions in private industry. His financial responsibilities ranged from managing private sector corporate activity of \$20-\$100,000 million to Public Sector Mega Projects like the \$10 billion Central Artery/Third Harbor Tunnel Project (CA/THT) in Boston and the \$22.0 Million Ohio River Bridges FEIS Project in South Indiana and Louisville, Kentucky. Throughout his career, Mr. Clements has built a network of senior managers and administrators in both the public and private sectors and enjoys access to many key legislators at every level of government.

He is the recipient of several prestigious awards: The FHWA Public Service Award; The 1985 George S. Bartlett Award for outstanding Contributions to Highway Progress presented by the American Association of State Highway and Transportation Officials(AASHTO), The National Academy of Sciences - Transportation Research Board(TRB) and the American Road and Transportation Builders Association(ARTBA);Certificate of Special Appreciation, American Forestry Association "For Services to Conservation and the Advancement of Intelligent Management and Use of Forests and Related Resources of Soil, Water, Air, Wildlife and Natural Beauty", presented in recognition of his contributions in locating I-93 through the New Hampshire Franconia Notch State Park and the White Mountain National Forest.

RELEVANT PROJECT EXPERIENCE

Associate Administrator of the Federal Highway Administration, 1992 to 1996. Mr. Clements served in research positions in the United States for both Highway and Transit, on OECD in Paris, and in the Transportation Association of Canada's Research Council.

As Chairman of the National Academy of Sciences Transportation Research Board, his responsibility covered all modes of Transportation including the Transit Cooperative Research Program (TCRP).

Commissioner of the New Hampshire Department of Transportation. Successful in resolving the I-93/Franconia Notch controversy. Prior to becoming Commissioner, settled first and longest NEPA environmental dispute of its time, ahead of Overton Park and Glenwood Canyon (the dispute was widely acclaimed by environmental as well as highways interests). Continues to enjoy unique credibility with environmental interests like the Conservation Law Foundation.



Central Artery Program Management Team. Responsible for completion of the Draft Environmental Impact Statement (DEIS) through the record of decision (ROD), state and federal agency liaison, and the creation and operation of the community programs. Included work with the Boston Downtown Business Committee, 1,000 Friends of Massachusetts, and the Boston Harbor Islands Trust.

President of California Transportation Ventures. President of a joint venture created to design and construct a private toll road from San Diego, California to Tijuana, Mexico, which required extensive community public involvement with San Diego, Chula Vista, and Otay Mesa, California.

Louisville/Southern Indiana FEIS and Preliminary Engineering Project. Project Manager for this \$2 billion-estimated construction cost project for the Kentucky and Indiana Departments of Transportation, which involved a very extensive public involvement program over four years with more than 1,000 community meetings, with four regional advisory and a citizen advisory committees. The preferred alternative, two new bridges and a major rebuild of a three-interstate interchange affects the entire metro region. It is a project of congressional interest and one of five U.S. Department of Transportation National Priority Projects.

James T. Huiting

University of Wisconsin Madison
B.S., Civil and Environmental Engineering

Mr. Huiting has more than 23 years of experience in the civil and environmental engineering field, with a strong emphasis on hands-on water resources engineering and project management. Mr. Huiting has supplemented his engineering background with education and project experience in vulnerability analysis, emergency action plans, information technology (IT) applications, and grant applications. In addition to vulnerability and assessment projects, Mr. Huiting brings substantial experience in civil and environmental engineering: planning, design, and construction of water-resources infrastructure, regional planning, computer applications, and general project management.

Project Role:
Security

RELEVANT PROJECT EXPERIENCE

EPA National Homeland Security Research Center (NHSRC) to develop the RRATool. Mr. Huiting served as Water Resources Engineer and as Technical Editor in developing the model methodology for EPA's RRATool. The RRATool is a Web-based application that rapidly evaluates risks to human health as a result of exposure to a chemical or biological agent. The tool features a water dispersion model that authorized personnel can use to estimate the concentration of a threat agent in the drinking water supply. The water dispersion model uses several screens of simple queries to the user to run calculations that model the concentration of a threat agent from its entry into the water supply — whether in surface water, the water treatment plant, or the distribution system — to the tap of the nearest receptor. The goal is to provide a tool to water treatment plant staff to assist emergency responders or risk managers through estimates of exposure and quantified human health risk based on assumed threats.

Department of Defense, U.S.A. Chemical Materials Agency (CMA). Mr. Huiting served as Senior Engineer for on-site inspections and the engineering report for water system vulnerability assessments (WVAs) at CMA facilities in the Midwestern United States. These WVAs were conducted in response to Department of Defense Instruction (DoDI) 2000.18 guidelines that require these sites to conduct a WVA in accordance with Section 401 of the Public Health Security and Bioterrorism Preparedness and Response Act of 2002. Mr. Huiting characterized each installation's water utility and mission, identified and prioritized adverse consequences to avoid, determined critical assets, assessed the qualitative likelihood of malevolent acts, evaluated existing countermeasures, analyzed current risk, and developed prioritized plans for risk reduction. Each CMA VA involved a review of pipes and constructed conveyances, physical barriers, water collection, pretreatment, treatment, storage and distribution, electronics, and supervisory control and data acquisition systems (SCADA). In addition, each CMA VA evaluated the use, storage, and handling of various chemicals, and operation and maintenance of each system, as applicable. These CMA WVAs were incorporated into each installation's site wide



VA and Anti-terrorism and Force Protection Plan (AT/FP), and required integration and concurrence of assessment findings with existing emergency response plans (ERPs), memoranda of agreement, and military battle plans

Kansas Department of Health and Environment, Vulnerability Assessment and Emergency Response Planning for Small Public Water Supply Systems. Mr. Huiting provides on-site training in vulnerability assessments for a continuing series of Kansas Department of Health and Environment (KDHE) workshops. These workshops present information for conducting VAs and developing emergency response plans (ERP) for public water supply systems that serve less than 3,300 users. The training focused on the methodology for conducting the VA and the required components of an ERP, allowing participants to use existing KDHE's guidance documents including Simplified Vulnerability Assessment Tool for Drinking Water and Emergency Response Planning Guidance for Kansas Public Water Supply Systems. This \$325,000 work assignment will be completed over 20 months.

State of Colorado, North Central Region Emergency Preparedness Plan. Mr. Huiting served as Project Manager for Tetra Tech's contract with the Colorado North Central Region Emergency Preparedness Plan. In this role, he worked with counties; regional entities; and subject matter experts in law, medicine, and cyber-terrorism. In addition, he worked with national guidance documents and various stakeholders in developing a strategic vision that combines many plans, procedures, and guidelines into an integrated plan for emergency preparedness. The project encompassed development of a framework of an emergency preparedness plan. Key to the project was providing forums, workshops, and a secure website to coordinate among the various federal, state, and local groups to allow for the exchange of ideas, problems, and available resources. These groups included law, enforcement, fire fighters, and hazardous materials handlers; emergency management; the medical and health community; emergency medical services; public health and public works; and information technology (IT). Several surveys were designed and distributed to shareholders and subject matter experts within the region as well as to Tetra Tech's staff.

Colorado Department of Public Health and Environment (CDPHE), Independent Verification Project. Mr. Huiting served in a similar project management role for Tetra Tech's CDPHE Independent Verification and Validation project. In this capacity, he is coordinating both IT and physical security assessments for a number of facilities for CDPHE. The assessments included physical and IT inspections as well as coordinating alternatives around open public facilities, biohazards, and general building operations. Mr. Huiting personally inspected and assessed building security and developed recommendations for improvement.

Wisconsin Power Hydroelectric, Senior Civil Engineer. Mr. Huiting provided inspection and engineering services for a vulnerability assessment of nine dams in two states. The assessments evaluated the concrete arch, gravity and buttress dams, spillways, earthen and rock-fill dikes, fuse plugs, drainage galleries, penstocks, surge towers, turbine intakes, generators, motor-control centers, SCADA control, operator assess, and operating procedures. Dam break inundation maps and emergency action plans were reviewed for general consequence and risk analysis. The resulting reports detailed suggested improvements in site security, detection, response, and mitigation. .

Ian B. Catlow

Mr. Catlow is responsible for civil and environmental engineering design tasks, including the design of sanitary and storm sewers, groundwater modeling, and hydraulic modeling.

Worcester Polytechnic Institute
B.S. Civil Engineering

RELEVANT PROJECT EXPERIENCE

New England Diversified Enterprises, LLC, Wastewater Treatment Facility Hydrogeology and Groundwater Discharge Permit, Westford, Massachusetts.

As Project Engineer, Mr. Catlow is conducting a hydrogeologic evaluation to determine the wastewater disposal capacity of an undeveloped 63-acre site. The property requires an on-site wastewater treatment facility to accommodate future site development. The hydrogeologic evaluation is based on an extensive field program which includes the excavation of test pits, soil borings and monitoring wells. Soil and groundwater samples were collected and analyzed to determine critical aquifer properties and existing groundwater quality. The data which is also used to determine the potential impact of the discharge on downgradient receptors. In a subsequent phase of the project, Mr. Catlow will develop a preliminary design for the on-site wastewater treatment facility. Since the proposed point of discharge is located within a Zone II wellhead protection district the effluent from the plant must comply with Massachusetts' groundwater reuse standards. Mr. Catlow is responsible for preparing an Engineering Design Report, Permitting Plans, the Hydrogeologic Evaluation Report, and a permit application to satisfy the requirements of the Massachusetts' Groundwater Discharge Permitting Program. Mr. Catlow is currently working with the client to design a facility that will meet the standards while simultaneously providing an economical solution to the developer.

Project Role:
Hydraulic Modeling

Boston Water and Sewer Commission, Floatables Control Program.

Mr. Catlow served as a Project Engineer for the design of a baffle Floatable Control System for 15 Combined Sewer Overflow (CSO) regulators. The technical assessment was combined with construction, operational, and economic considerations to develop a cost-effective approach for floatable control for the BWSC.

Massachusetts Convention Center Authority, Infrastructure and Utility Design for the Boston Convention and Exhibition Center.

Mr. Catlow served as a Staff Engineer for the design of on-site water, stormwater, and wastewater utility systems for the Convention Center's 60-acre site. This effort involved design of approximately 1,500 linear feet of 30-inch water main relocation, 3,000 linear feet of sanitary sewer, and 2,000 linear feet of a 72-inch storm drain, including a new outfall to handle drainage from the facility's 45-acre roof – the largest roof structure in New England. The amount of stormwater runoff from the roof area for a 10-year storm is approximately 200 cubic feet per second.



Town of Southbridge, Massachusetts, Sewer Collection and Water Distribution System Design.

Mr. Catlow served as Project Engineer for the study and design of a number of sewer collection systems. He evaluated the existing systems and helped determine requirements for expansion to service new growth areas. The project will result in the installation of approximately 4,000 linear feet of 8-inch water main. The sewer collection system alternatives included traditional gravity collection, gravity collection with pumping systems, and low pressure sewer systems.

City of Waltham, Comprehensive Drainage Study of Chester Brook and West Chester Brook Watersheds, Waltham, Massachusetts.

Mr. Catlow, serving as Civil Engineer, is responsible for the development and implementation of a series of hydrologic and hydraulic models used in the study. The project deliverable will be a Stormwater Master Plan for the Chester and West Chester Brook Watersheds in the City of Waltham.

New England Patriots, New Football Stadium and Economic Development Complex, Preliminary Design and Permitting, Foxborough, Massachusetts.

Mr. Catlow served as Civil Engineer for the preliminary design and permitting of the new 250,000-gpd wastewater treatment plant at the New England Patriots' Gillette Stadium. He was also involved in the design of the water reuse system on the site. This system is currently the largest greywater reuse system in the state.

JPI Apartment Development, LLP, Permit Preparation, Bellingham, Massachusetts.

Mr. Catlow led the hydrogeologic investigation and permit preparation tasks in support of a 54,000-gpd wastewater treatment plant. The proposed wastewater treatment plant is located within a Zone II Wellhead Protection District. Mr. Catlow has been instrumental in ensuring state and local regulators that the proposed plant will provide high quality recharge to a protected aquifer.

Pleasant Bay Health & Living, LLC, Wastewater Treatment Plant, Brewster, Massachusetts.

Mr. Catlow performed a hydrogeologic evaluation in support of a proposed 27,000-gpd wastewater treatment plant.

The Rivers School, Wastewater Treatment Plant, Weston, Massachusetts. Mr. Catlow prepared the hydrogeologic evaluation and preliminary design of a 15,000 gallon-per-day wastewater treatment plant at the Rivers School.

Boston Water and Sewer Commission, Dorchester 090 Combined Sewer Separation Project, Boston Massachusetts.

Mr. Catlow is serving as Civil Engineer for the design of separate storm drains and sewers to reduce the occurrence of combined sewer overflows (CSOs) from Boston's 090 combined sewer outfall into Dorchester Bay. During the first phase of the project, Mr. Catlow was responsible for producing basemaps that accurately depicted the location of existing utilities within the project area. In subsequent phases of the project, Mr. Catlow was involved in the design and preparation of plans and construction documents for more than 69,000 feet of storm drain piping.

Boston Water and Sewer Commission, East Boston Combined Sewer Separation Project, Boston Massachusetts. As Civil Engineer, Mr. Catlow evaluated existing hydrologic conditions and developed preliminary piping schemes for the approximately 50-acre area tributary to the Massachusetts Water Resources Authority (MWRA) 207 combined sewer outfall. He was also involved in the final design of storm drains and the development of construction documents.

Mr. Sperandio is a Vice President with Tetra Tech, Inc. With 30 years of experience, he has been involved in a variety of program management and construction management projects, as well as numerous projects involving the planning, design and construction of commercial, municipal, and military facilities, airfields, runways, taxiways, aprons, roads, and infrastructure involving water distribution and treatment, wastewater collection, pumping and treatment, and stormwater systems.

Mr. Sperandio also has extensive experience in procurement including preparation of contract scope of work documents, management of subcontractors, and change orders.

RELEVANT PROJECT EXPERIENCE

Massachusetts Water Resources Authority, Blue Hills Owner's Representative Services, Quincy, Massachusetts. As Project Manager for the Owner's Representative Services to the Massachusetts Water Resources Authority (MWRA), Mr. Sperandio is managing the delivery of the Blue Hills Covered Storage project using the design/build delivery approach. The Blue Hills Reservoir is an existing open distribution storage reservoir located in the Metropolitan District Commission's (MDC) Blue Hills Reservation in Quincy, Massachusetts. Tetra Tech is serving as prime consultant with support from CH2M Hill, Project Management Associates (PMA) DMC Engineering and Haley & Aldrich. Prior to providing Owner's Representative Services to the MWRA, Tetra Tech successfully completed the Environmental Impact Report (EIR)/Conceptual Design for the MWRA Blue Hills Covered Storage facilities. Tetra Tech was responsible for evaluating alternatives, siting of storage facilities, conceptual design of storage facilities and large diameter connecting water mains, environmental permitting, landscape design and development of wetland habitat mitigation.

City of New York, Department of Environmental Protection, New Water Treatment Plant Design. Mr. Sperandio served as Project Director for the preliminary design of a 290-MGD water treatment facility. This water treatment plant to treat the Croton water supply system, due to its location within a City Park, was to be constructed in a single underground nine-acre facility.

City of New York, Department of Environmental Protection, Wastewater Treatment Facilities Rehabilitation. Mr. Sperandio served as Project Director for the Jamaica Wastewater Pollution Control Plant. This 100-MGD plant, originally constructed in the 1940s, was in need of substantial upgrade and improvements. Mr. Sperandio directed the development of a multi-phased, long-term design and construction program for this facility. In addition, Mr. Sperandio served as Project Director for the final phases of the Owls Head Water Pollution Control Plant upgrade program, which spanned a period of more than 20 years.

Tufts University
B.S., Civil Engineering, 1973

Project Role:
Construction Management



Pollution Control Department, Samut Prakarn Wastewater Management Project, Thailand.

Mr. Sperandio served as Project Manager during the initial year of project start-up for the Samut Prakarn Wastewater Management Project in Thailand. This project included design and construction of 125 km of pipeline from 300 mm (12") to 3,000 mm (10') in diameter, five major pump stations, a crossing of the Chao Phraya River using horizontal directional drilling techniques, and a 125-MGD treatment plant with an outfall to the Gulf of Thailand.

U.S. Army Corps of Engineers Afghanistan Engineer District, Design/Build of Regional Afghan National Army Base, Gardez, Afghanistan. Chief Design Engineer responsible for directing the master planning, and wastewater, civil, site, structural and geotechnical engineering associated with the design and construction of a 300-acre regional army base for 6,000 soldiers of the Afghan National Army.

U.S. Army Corps of Engineers, Transatlantic Program Center for the Pol-E-Charkhi 1st Brigade Army Base, Afghanistan. The Mr. Sperandio was the Chief Design Engineer for the Perini Corporation/Tetra Tech design/build team on the Pol-E-Charkhi 1st Brigade Army Base project. This \$24-million fast-track design/build project, which began in January 2003, was ready for the Afghan National Army to occupy the barracks by the end of June 2003. Temporary utility services were provided until the entire base and infrastructure was completed in September 2003. The scope of work included designing infrastructure to support housing for 6,000 Afghan soldiers, as well as design for new permanent barracks and dining facilities. Mr. Sperandio was responsible for directing the civil, site and water/wastewater engineering, including a wastewater treatment plant and water distribution system. The planning included coordinating new well sites, water storage and pumping requirements, a wastewater collection, pumping and treatment system, a power supply building and complete electrical and communications distribution system. Tetra Tech also assisted in coordination with the United Nations Mine Action Center to address land mine and unexploded ordinance issues.

United States Air Force Space Command, Ground Based Mid-Course Defense (GMD), Upgraded Early Warning Radar (UEWR), Design and Construction of Facility Modifications. Mr. Sperandio is currently serving as the Project Manager for the design of all facility modifications to support the GMD UEWR Program at Beale Air Force Base in California, Cobra Dane Facility at Eareckson Air Station in Shemya, Alaska and RAF Fylingdales in England. Tetra Tech, as part of a joint venture, is teamed with Perini Corporation as part of a design/build team for the delivery of this project. Perini and Tetra Tech are providing support to Raytheon Integrated Defense Systems. The facility modifications include major interior architectural changes along with revisions and upgrades to the facility mechanical and electrical systems to support the UEWR system.

U.S. Air Force, Peace Shield Air Defense Facilities Program, Saudi Arabia. Mr. Sperandio served in a variety of key roles on this \$1.6-billion program to design and construct the state-of-the-art Peace Shield air defense facilities for the Kingdom of Saudi Arabia. This project included five underground hardened sector command centers, a central command operations center, 17 long-range radar facilities, and a centralized maintenance facility. The project involved site investigations, site selection, master planning, analysis of existing utility systems, new and renovated facilities, new and upgraded utility systems, roadways, and other infrastructure support facilities.

Neil V. Callahan

Rutgers University
B.S. in Environmental Science
M.S. in Environmental Science
Graduate Studies in Water Resources

Mr. Callahan joined R. W. Beck in 1997 and is a Principal and Senior Director for the Infrastructure Practice. He has 27 years' experience in the water and wastewater industry. He has participated as Project Manager or Senior Operations Consultant in over a dozen major Public/Private Partnership procurements in nine states, Canada, the Caribbean and Mexico.

Mr. Callahan has served as project manager for utility planning, permitting and construction projects with values ranging from \$50,000 to \$108 million, drawing on his comprehensive knowledge of state and federal regulations, project development, scheduling and contract management. Mr. Callahan was a principal consultant for an engineering firm specializing in the troubleshooting and design of treatment processes, utility operations, facilities planning, permitting and facility start-up. Mr. Callahan has been responsible for the construction management of over \$25 million of water and wastewater utility assets. Further, he has been the Project Manager for the successful start-up of five advanced biologic nutrient removal wastewater plants, including the development of all operational, management and maintenance management systems.

Project Role:
Procurement

AREAS OF EXPERTISE

Public/Private Partnerships

Mr. Callahan has participated in the public/private partnership arena from the privatizer's perspective. He has been a corporate decision-maker, senior technical strategist and/or project manager on over a dozen major national and international procurements. Neil has been a team leader for identifying and implementing innovations that make utilities competitive.

Mr. Callahan has been the Project Manager for multiple contract operating projects and for the development of seven proposals for a public/private partnership with total revenues in excess of \$165 million.

Strategic and Business Planning/Change Management

Mr. Callahan has managed and assisted water/wastewater utilities throughout periods of change caused by competitive or compliance-driven initiatives. In one project he directed, the utility had been consistently non-compliant, was being fined heavily, and had two employees convicted of federal water pollution law violations. After sixty days the facility was compliant; after two years it received an award for its performance.



Independent Engineer's Reviews

Mr. Callahan has served as Technical Manager and or Project Manager for Independent Engineering Reviews of water/wastewater facilities in support of financing and, for some projects, privatization.

Performance Enhancement/Operational Efficiency Studies

Mr. Callahan has a decade of experience with water/wastewater utility assessments of management systems, business processes, treatment effectiveness, safety, and employee skill and performance. Neil has developed and successfully implemented programs that have yielded significant measurable savings or performance improvement to the utility.

SELECTED EXPERIENCE

Contract Procurement and Negotiations Services for Supply Development Program Projects

Tampa Bay Water – Clearwater, Florida

R. W. Beck has been retained as member of Tampa Bay Water's System Engineering team to provide expert assistance to Tampa Bay Water with the development of alternative procurement programs including: Design-Build-Operate, Design-Build and Build- Own-Operate-Transfer procurements. The work has included the following: development of a nationally prominent procurement program, procedures and schedule; develop DBO terms and conditions and procurement documents; assistance with development of terms and conditions and documents for BOOT procurement; development of risk allocation methodology, preparation of a Risk Matrix, and risk-based cost impact analysis for DBO procurement; develop and assist with the pre-qualification, evaluation of contractors and proposals for DBO; assist with the negotiations of the DBO procurement.

Tampa Bay Seawater Desalination Project

Tampa Bay Water – Apollo Beach, Florida

Mr. Callahan has been the R. W. Beck Project Manager for the landmark Tampa Bay Seawater Desalination Project. The project consists of the development, design, permitting and construction of a 25 MGD seawater desalination plant. R. W. Beck has provided design review, contract development assistance, contract negotiations, Independent Engineering reviews, bond reports and construction management services for the project.

Gulf Coast Seawater Desalination Project

Tampa Bay Water – Pasco County, Florida

Mr. Callahan has been the R. W. Beck Project Manager for the development of Tampa Bay Water's second seawater desalination project. The proposed project is a Design/Build/Operate project delivery for a 25 to 35 MGD seawater reverse osmosis desalination plant co-located with a power plant. The Gulf Coast Project involves the overall project planning, development of the procurement documents, permitting, public relations, design review, contract development assistance, and contract negotiations.

Carlsbad Desalination Project

San Diego County Water Authority – San Diego County, California

Mr. Callahan has served as the Project Manager for the feasibility evaluation of the Carlsbad 50 MGD seawater reverse osmosis desalination plant proposed to be co-located with a power plant. The project involved evaluating the contracts, project risk, project costs and energy concerns.

Edward D. Wetzel

Dr. Wetzel has served in a variety of academic, technical, project, marketing and management roles over his 25 years of service to water, wastewater and environmental clients. With an emphasis on relationship building and customer satisfaction, he has profitably grown every operation he has been associated with in his career. Dr. Wetzel's experience in utility acquisitions, systems planning, alternative project delivery and program management make him uniquely qualified to provide management and consulting services to the public and private water sector.

Lehigh University
PhD, Sanitary Engineering

Lehigh University
MS, Civil and Sanitary Engineering

Lafayette College
BS, Civil Engineering

TECHNICAL EXPERIENCE

Dr. Wetzel has managed a variety of projects for municipal clients. Projects include water treatment process studies, water quality investigations, privatization studies, utility acquisitions, rate and connection fee studies, bond reports, resource recovery facility feasibility study, manhole rehabilitation, sewer system modeling, wastewater reuse and wastewater treatment plant design and performance evaluation. He is contributing author to the Water Environment Federation's Manual of Practice No. 8, *Design of Municipal Wastewater Treatment Plants*.

Dr. Wetzel has represented various governments in due diligence investigations and negotiations for the purchase of private utilities. Acquisitions have been both by negotiated agreement and condemnation, with settlements ranging from \$3 million to \$136 million.

Dr. Wetzel has served client sponsor and led Quality Assurance teams for numerous water and wastewater planning and design projects, including:

- Brunswick County Water and Sewer Authority - \$35 million sewage collection and treatment program
- Elizabeth City, NC - \$25 million water and sewer improvements
- Gwinnett County, GA - \$200 million advanced water reclamation facility design
- City of Chattanooga, TN - \$30 million Moccasin Bend wastewater treatment plant wet weather expansion to 260 MGD
- Palm Beach County, FL – improvements at six water treatment facilities, including a new 28 MGD membrane softening plant and the addition of ozone disinfection at a 16 MGD lime softening plant
- Fulton County, GA – Comprehensive sewer system evaluation survey and rehabilitation program.

Water and wastewater master plans have been prepared for Elizabeth City, NC; Palm Beach County, FL; Royal Palm Beach, FL; Town of Palm Beach, FL; Port St. Lucie, FL; Seacoast Utility Authority; Charlotte County, FL; South Brunswick Water and Sewer Authority; Spartanburg County, SC; and Chattanooga, TN.

Project Role:
Regionalization



AFFILIATIONS

American Society of Civil Engineers

American Water Works Association

- Chair, SCAWWA Program Committee
- Consulting Engineers of South Carolina, Environmental Committee

Water Environment Federation

- Member, Task Committee on Aerated, Fixed-Film, Biological Treatment
- Author, Wastewater Treatment Plant Design, MOP8.

HONORS AND AWARDS

Elected to Phi Beta Kappa and Tau Beta Pi

Outstanding Civil Engineering Student Awarded by Lehigh Valley Section of ASCE

Brinks Fellowship

Outstanding Young Man of America

Clifton P. Mayfield Outstanding Young Alumni Award

Clarkson University, Department of Civil and Environmental Engineering Advisory Council.

PUBLICATIONS AND REPORTS

Wetzel, E. D., and R.L. Johnson, 1983, "Net Energy Production in Wastewater Treatment," *Proceedings of the 1983 Environmental Engineering Division Specialty Conference, ASCE, 577.*

Wetzel, E.D., 1983, "Users Manual for NEPWATR," *Fritz Engineering Laboratory Report No. 354.485, Lehigh University.*

Contributing author to *Fluid Mechanics: Exam File*, S. Klemetson, ed., Engineering Press, 1985.

Wetzel, E.D., W.I. Fisher, and J.P. Creedon, 1986, "Pilot-Scale Evaluation of A/O vs. Conventional Activated Sludge for High-Strength Industrial Wastewater," *Proceedings for the Industrial Wastes Symposium. 59th Annual WPCF Convention, Los Angeles.*

Wetzel, E.D. and S.B. Murphy, 1987, "Guidance Manual for Preventing Interference at POTWs," *U.S. Environmental Protection Agency, Permits Division, Office of Water Enforcement and Permits.*

Contributing author to *Design of Municipal Wastewater Treatment Plants. Vols. I and II*, Water Environment Federation (MOP8), 1992, 1998.

Wetzel, E.D., Osterman, H.C. and Elia, A.L., 1994, "The Value of Regional Authorities in Managing Environmental Facilities," *Proceedings: Management of Environmental Problems for Public Officials.*

Wetzel, E.D., 1996, "Introduction to Contract Operations and Privatization," *Proceedings: 1996 Advanced Topics in Wastewater Treatment*, Greensboro, North Carolina.

Wetzel, E.D., 1996, "Privatization – The Value of Water and Wastewater Utility Systems," Presentation to the 1996 South Carolina Environmental Conference, Myrtle Beach, South Carolina.

David A. Jochim, P.E.

Montana State University
B.S. in Civil Engineering
M.S. in Hydraulic Engineering

Project Role:
Strategic Planning

Mr. Jochim has more than 30 years of consulting experience associated with implementation of large capital facilities and systems for both public and private clients. His experience encompasses strategy development for implementation and project delivery strategies, community involvement, capital projects prioritization, and decision process formulation. Mr. Jochim facilitates discussions for public utilities with senior management and technical staff to obtain input, identify issues, develop strategies to address issues, and to obtain feedback resulting in plan endorsement from management and staff. He has assembled and managed complex project teams, requiring coordination among multiple project stakeholders and alignment with diverse regulatory, scheduling, budgetary, and technical requirements.

RELEVANT PROJECT EXPERIENCE

Strategic and Business Plan

Department of Water Supply, County of Hawaii

Project Manager. In conjunction with development of a water master plan for the Department of Water Supply (DWS), Mr. Jochim facilitated multiple workshops with DWS senior management, key staff, and DWS opinion leaders to prioritize strategic objectives for the Department and identify potential organizational enhancements, performance metrics, and process improvements. Throughout these work sessions, team members learned ways of enhancing their listening, communication, and strategic skills. All-hands meetings were held during the planning process to seek input and feedback from staff and to gain endorsement of strategic issues, goals, and actions. Core planning team members also engaged board members to solicit input and feedback. The board adopted the Strategic and Business Plan in June 2004 and is in the process of implementing the strategic initiatives identified for the FY 2004–2005.

Capital Improvement Program Independent Oversight Review

San Francisco Public Utilities Commission/California

Task Lead. As part of the independent review of the PUC's \$3.6 billion Capital Improvement Program, Mr. Jochim evaluated the local water system distribution program. The CIP includes the regional water system, local water system, and clean water system review.

R. W. Beck's findings and recommendations were presented to a Blue Ribbon Committee, as well as to the PUC Commissioners. The recommendations addressed program implementation issues, including project need, cost, and scheduling; program staffing and leadership; and the use of a program management consultant in executing the program. The voters passed bond funding for the program.



Freeport Regional Water Program

East Bay Municipal Utility District and Sacramento County Regional Water Authority. California

QA/QC Manager. Working directly with the general manager of the Freeport Regional Water Authority, Mr. Jochim had overall responsibility for QA/QC related to development of a delivery strategy for all technical aspects of this \$750 million water supply program. The program includes a 185 mgd water intake on the Sacramento River, 20 miles of pipeline, and coordination of project activities with local, State, and Federal regulatory agencies.

Water Comprehensive Plan

City of Everett, Washington

Principal-in-Charge. Mr. Jochim served as Principal-in-Charge for preparing a Comprehensive Water Plan for the City of Everett, the largest city in Snohomish County and the area's main wholesale water purveyor. In addition to basic elements of the water plan, the Everett plan addressed critical issues regarding the City's capital rehabilitation and replacement plan (CRP) to update water system facilities. In relation to the CRP, Mr. Jochim's key responsibilities included planning the development, installation and maintenance of a facilities inventory database linked to the City's GIS system and drafting a water utility financial plan.

Water System Plans and Capital Improvement Programs

Various Clients/Northwest United States and Canada

Project Manager. Mr. Jochim has been responsible for preparation of comprehensive water system plans, water system analyses, and capital improvement program development for many jurisdictions located in the Pacific Northwest. In conjunction with these projects, he has completed water distribution system hydraulic analyses, facilities condition assessments, feasibility analyses, capital projects prioritization, capital improvement programs development, environmental reviews, cost estimates, scheduling, implementation strategy development, and development of grant assistance strategies for the following jurisdictions:

- Bellevue, Washington
- Fairbanks, Alaska
- Highline Water District/Washington
- Hillsboro, Oregon
- Issaquah, Washington
- Port Townsend, Washington
- Portland, Oregon
- Redmond, Washington
- Salem, Oregon
- Skyway CWSP/King County, Washington
- Vancouver, B.C.
- Vancouver, Washington
- Vashon CWSP/King County, Washington
- Woodinville Water District/Washington.

Kyle B. Rhorer

University of California, Davis
MBA Environmental and Natural
Resources Management

University of California, San Diego
BA in Quantitative Economics

Kyle Rhorer serves as the Western Region Director for R. W. Beck's National Owner Advisory Services Group, where he specializes in the areas of strategic planning, capital financing, financial management and controls, and the development of public-private partnerships for utility infrastructure. Mr. Rhorer also has over 16 years of experience in marketing to municipalities, regulatory agencies, and publicly- and privately-owned drinking water, wastewater, solid waste utilities, and other environmental services providers.

PROJECT EXPERIENCE

Water Treatment Plant Design-Build-Operate (DBO)
Procurement Services

San Diego County Water Authority, California

Mr. Rhorer served as project manager of this comprehensive DBO procurement for the San Diego County Water Authority for the development of a public-private partnership for the design, construction, and long-term operation of a 50-100 MGD surface water treatment plant. A landmark project for the Authority, this project is the first treatment project it has undertaken and will be the largest DBO water treatment facility in California when completed in 2008. In addition to his project management responsibilities, Mr. Rhorer led the development of the procurement strategy, risk allocation and service contract terms, and solicitation documents. Mr. Rhorer currently serves on the Board of Senior Consultants for the Authority, overseeing the development of the overall public-private partnership.

Procurement of Design-Build-Operate (DBO) Services

City of Woonsocket, Rhode Island

Mr. Rhorer worked with the City to develop a public-private partnership strategy, including a long-term analysis of capital financing options and user rate impacts. He led the financial review of proposal finalists for the long-term DBO engagement and developed a cost-risk methodology to determine the financial implications of various risk allocations. Mr. Rhorer determined the ability of the proposers to provide financial considerations and competitive service fees, while maintaining a stable and affordable user-rate structure.

Water Utility Privatization Studies

Various

As water utilities across the country search for ways to improve efficiency and cut costs, many are turning to "privatized" operations. Working on behalf of municipalities across the country, Mr. Rhorer developed a number of economic feasibility models to present the cost implications of various privatization alternatives. As a crucial component to this modeling, he performed rate sensitivity analyses to

Project Role:
Business Modeling



provide public utilities with the answer to one of the most important questions: "What will this do to the rates?" Specifically, these projects required close analysis of operating budgets, and capital financing plans to determine the various impacts privatization may have on the utility's "true cost" of providing water and subsequently the impact on the user rate schedule.

Rate Study and Utility Formation/Sparks

City of Sparks, Nevada

Serving as project manager, Mr. Rhorer assisted the City of Sparks in improving the fiscal management of their sanitary sewer, storm water and reclaimed water utilities while promoting a fair and equitable allocation of costs to customers. The project had three main objectives: 1) Develop an organizational and financial structure for the City's storm water and reclaimed water utilities; 2) Determine the adequacy of the City's revenue recovery practices for sanitary sewer, storm water and reclaimed water functions; and 3) Develop an integrated, user-friendly financial model that will allow the City to determine fair and equitable user fees for the sanitary sewer, storm water and reclaimed water utilities in accordance with Title 13 of the Sparks Municipal Code.

Integrated CIP Financial Planning Model

City of Tempe, Arizona

Mr. Rhorer developed a comprehensive financial model for the City of Tempe that integrates the City's capital improvement program with its budget and revenue management systems. The spreadsheet-based model develops 20-year budget and rate projections for the City's drinking water, wastewater, and irrigation systems. The model allows the City to run an infinite number of "what if" analyses to determine the budgetary and user rate impacts associated with alternative capital improvement programs. The model also facilitates rate sensitivity analyses at the customer class level to determine appropriate rate making policy for the City.

CIP Strategic Business Plan

San Francisco Public Utilities Commission, California

Mr. Rhorer managed a high-level engagement to develop an overall strategy for SFPUC's implementation of a \$4-billion capital improvement program. Mr. Rhorer also served as key architect of the utility-wide planning process to develop a new organizational design and associated mission, vision and performance measures against which the large utility will evaluate the feasibility of implementing the largest CIP in the history of San Francisco. In addition to all day-to-day project management responsibilities, he developed an overall directional plan and strategy to involved all SFPUC stakeholders including customers, management, staff, and elected officials.

Performance Assessment

City of Midland, Texas

Mr. Rhorer served as project manager for a performance assessment of the City's Water and Wastewater Utility to identify potential alternatives to achieve cost reductions while maintaining or improving the current level of service provided by the Utility. Based on the results of the assessment, alternative service delivery opportunities for the City were evaluated. These alternatives include contract operations of all or some of the existing facilities; DBOF contracts for new capital facilities; outsourcing of selected management or administrative functions such as utility billing and customer service; sale of selected Utility assets or systems; or sale of the entire Utility system.

Edward Ionata

Yale University
M.S., Forest Science

University of Rhode Island
B.S., Natural Resources

Harvard University Extension
Land Development & Financial
Management

Mr. Ionata is a Senior Vice President at Tetra Tech, Inc. Mr. Ionata specializes in the management of multi-disciplinary projects from inception through design, permitting and construction. He is well versed in fast-track and design-build delivery methods and has managed environmental reviews, permitting, and compliance for two of the largest public infrastructure projects in the United States – the Massachusetts Water Resources Authority's Deer Island Treatment Plant and the Central Artery/Tunnel Project. Mr. Ionata directly manages multidisciplinary public and public-private partnership projects.

RELEVANT PROJECT EXPERIENCE

Massachusetts Water Resources Authority, Blue Hills Covered Storage EIR/Conceptual Design and Design/Build Services.

Mr. Ionata managed the completion of conceptual design, MEPA documentation and permitting for the placement of two 12.5 million-gallon, potable water storage tanks within the existing Blue Hills Reservoir. The project involves replacing eight acres of existing reservoir with a meadow/forest habitat covering the new storage tanks, and creating an 8-acre pond and wetland habitat in the remaining reservoir footprint. Based on the successful completion of this work, Tetra Tech has been selected as the owner's representative for the design/build construction of the Blue Hills Covered Storage facilities. Mr. Ionata is responsible for completing environmental permitting and assisting in selection and monitoring of construction contractors.

Massachusetts Water Resources Authority, East and West Spot Pond Supply Mains Rehabilitation Project. Mr. Ionata served as Technical Advisor for MEPA and state and local permitting efforts. The project included the evaluation, rehabilitation, and associated permitting of proposed improvements of 20 miles of 48-inch and 60-inch diameter cast iron and steel pipe. The pipe, constructed between 1896 and 1902, is located in seven communities including Boston, Cambridge, Medford, Malden, Melrose, Somerville, and Stoneham.

Massachusetts Bay Transportation Authority, Greenbush Commuter Rail, South Shore Massachusetts. Mr. Ionata is coordinating services provided to the Cashman/Balfour Beatty design build team constructing 18 miles of reclaimed heavy railway and seven passenger stations. Tetra Tech is providing design input to ensure environmental compliance, designing replacement wetlands, providing support to the owner (MBTA) in acquiring wetlands permits for the project, designing highway signals and construction detour routing, coordinating hazardous waste investigation and removal, and acquiring environmental permits for the design builder.

South Shore Tri-Town Development Corporation, Naval Air Station, South Weymouth, Massachusetts. Mr. Ionata managed the environmental and engineering studies, master plan refinements and

Project Role
Permitting



MEPA documentation for the ongoing redevelopment of the 1,400-acre Naval Air Station (NAS) in South Weymouth, Massachusetts. He oversaw field inspections to evaluate wetland resources in the study area. GIS technology was used to identify environmental constraints and review local population and land use data. Detailed transportation studies were performed to evaluate access and highway improvements. An innovative approach was used to fast-track early environmental approvals and to allow continued development to be reviewed and approved in phases keyed to an emerging master plan and responding to changing market conditions. Ongoing services are being provided to support master planning, engineer utilities, and ensure economic compliance.

New England Patriots, New Football Stadium and Economic Development Complex, Foxborough, Massachusetts. Mr. Ionata was the Deputy Project Director responsible for environmental and planning issues for the 68,000-seat stadium, and parking and infrastructure improvements to the 300-acre stadium site. The project involves construction within state and federal wetlands and floodplains, and includes major highway and site roadway infrastructure improvements and more than 14,000 parking spaces. Massachusetts Environmental Policy Act (MEPA) review used an expanded Environmental Notification Form (ENF) and a single Environmental Impact Report (EIR), which allowed a Phase I Waiver for stadium structure construction. In addition to extensive civil engineering and highway design, Tetra Tech designed and permitted an award-winning relocation of the Neponset River, creating a new $\frac{3}{4}$ -mile river course nine acres of riparian habitat and associated wetlands.

Massachusetts Convention Center Authority, Boston Convention and Exhibition Center, Boston, Massachusetts. Mr. Ionata managed environmental permitting and civil engineering services for the new Boston Convention and Exhibition Center. Design services included a large-diameter separated storm drain and direct outfall to Boston Harbor to handle roof drainage from the massive convention center structure, utility connections, and traffic and signage. Permitting services included MEPA documentation for project changes and preparation of project impact reports under the Boston Redevelopment Authority process.

Prior to joining Tetra Tech, Mr. Ionata served in the following capacities:

Parsons Brinckerhoff, Central Artery Project, Boston. Mr. Ionata served as Environmental Services Manager for the Core Management Team. He managed a 45-person environmental services group to provide environmental analyses required for a \$10-billion highway/tunnel/bridge project. He was responsible for acquiring all environmental permits, monitoring environmental compliance during construction, and facilitating regulatory agency relations. He was also responsible for the budget, scope, and schedule for environmental tasks and specialty subcontractors. He developed strategies for materials disposal and construction mitigation, and provided NEPA and state environmental impact documentation necessary to gain approval for project changes. Mr. Ionata managed preparation of a major supplemental impact statement examining tunnel/bridge design options for a river crossing. He supported an aggressive permit acquisition schedule, provided litigation assistance, and directed technical studies in multiple disciplines including air quality, odor control, water quality, landfill revegetation, marsh restoration, and noise control.

Massachusetts Water Resources Authority, Boston Harbor Clean-up – Deer Island, Nut Island, Fore River Shipyard, and Ocean Outfall Facilities. Mr. Ionata served as Construction Manager, developing strategies and leading the permitting team to acquire NEPA reviews and environmental permits for the construction of the \$3.28-billion Boston Harbor wastewater treatment facility and the barge and ferry facilities required to support its construction. Operating under court-ordered deadline pressure, he managed \$3 million of consultant resources to gain all required coastal, wetlands, solid waste, hazardous waste, and water pollution regulatory approval.

Andrew T. Woodcock, P.E.

Mr. Woodcock has special expertise in utility due diligence investigations, utility valuations, financial feasibility analyses and business plans. He has participated in over 60 water and wastewater utility valuations and acquisitions for utility systems located throughout the United States. The acquisition projects cover a wide range of utility system configurations and sizes and include engineering due diligence inspections, valuations, and financing activities associated with the transactions. Major projects include the City of Nashua, NH, Comprehensive Review of Pennichuck Water, the City of Peachtree City, GA acquisition of Georgia Utilities Company, the City of Winter Haven, FL acquisition of Garden Grove Water Company and the acquisition of the Deltona and Martin County systems from Florida Water Services Corp.

He is also experienced in the preparation and review of capital improvement programs, master planning and water and wastewater impact fees. Mr. Woodcock's water and wastewater utility planning experience includes several master plans and capital improvements programs. Recent planning projects include the City of Winter Haven Water Master Plan, the Town of Palm Beach Water Capital Improvements Program, and the Marion County Utility Consolidation Program.

Additionally, Mr. Woodcock has experience in the review and analysis of water and wastewater utility impact fees and utility financial feasibility studies in support of capital funding including studies for the Cities of Apopka, Brooksville, and Bartow, Pasco County and the Tohopekaliga Water Authority.

RELEVANT PROJECT EXPERIENCE

City of Nashua, New Hampshire, Comprehensive Review of the Pennichuck Water System. Mr. Woodcock was the principal analyst in Tetra Tech's comprehensive review of the Pennichuck Corporation, the largest investor-owned water utility holding company in New Hampshire. Pennichuck provides water to the City of Nashua and 22 other communities in southern New Hampshire and Massachusetts. Tetra Tech provided the overall project management and was responsible for the assessment of the water supply system, distribution system, safe yield, future supply and demand, capital improvements and watershed management components of this study. The project team investigated Pennichuck Corporation's assets and liabilities, water capacity, watershed management plan and the legal and regulatory issues relative to acquisition. The team prepared a sample portrait of the potential merger of Pennichuck Water and Philadelphia Suburban Corporation.

University of Central Florida
B.S.E., 1988

M.S.E., University of Central Florida
M.S.E., 1989

Rollins College
M.B.A., 2001

Professional Affiliations
Water Environment Federation
American Water Works Association

Project Role:
Asset Evaluation





Jeff J. McGarvey

University of Central Florida
B.S. in Finance

Project Role:
Cost of Service / Rates

Mr. McGarvey is a Senior Consultant and has been providing professional consulting services to municipal solid waste, water, wastewater, electric and natural gas utilities throughout the southeastern region for more than 10 years. Mr. McGarvey has a broad range of experience with municipal utility systems with special expertise in utility rate analyses; utility valuations and acquisitions; regionalization and consolidation studies; debt issuance support including the preparation of financial feasibility analyses associated with the issuance of revenue bonds; capital financing analyses; strategic planning, assisting with rate and regulatory matters, and instituting financial mechanisms to provide for sufficient recovery of operating and capital costs.

He has assisted clients in the preparation and presentation of public awareness and information programs related to municipal projects. He has developed procedures and supervised the preparation of extensive computer models for utility rate studies, financial control, data retrieval and analysis, financial feasibility studies, and capital financing alternatives. His relevant experience is listed below.

AREAS OF EXPERTISE

Rate and Cost of Service Studies

Mr. McGarvey has experience in utility rate and cost of service studies for solid waste, water, wastewater, electric, and natural gas systems located throughout the southeastern region. Such experience generally relates to performing budget analyses, customer and usage analyses, development of revenue requirements, cost of service allocations, and sensitivity analyses related to the implementation of rate structures designed to promote desired usage characteristics.

- **Solid Waste Rate Study – City of Panama City, Florida:** Mr. McGarvey provided assistance in the area of solid waste rate matters including a five-year financial plan and identified recommended changes and improvements to comply with current utility practice on behalf of Panama City.
- **Solid Waste Rate Study – St. Petersburg, Florida:** Mr. McGarvey is leading R. W. Beck's team in developing a revised rate structure for the City's solid waste utility. This work includes developing a 10-year projection of operating results assuming current year and future rate increases.
- **Strategic Plan and Cost of Service Study – City of Orlando, Florida:** Mr. McGarvey is assisting the City examine methods to improve the efficiency of their solid waste collection system as well as examine revenue enhancement mechanisms. Mr. McGarvey will utilize the City's existing system as well as potential system changes



to model a detailed five year cost of service study. The model will project annual capital and operating expenses for each alternative collection style and service level.

Additional clients include: City of Thomasville, NC; City of Highpoint, NC; City of Greensboro, NC; City of Gastonia, NC; City of Hickory, NC; City of Monroe, NC; The Greenwood CPW, SC; The Greer CPW, SC; French Broad Electric Membership Corporation, NC.

Revenue Bonds, Feasibility Analyses and Capital Funding

Mr. McGarvey has been involved in the preparation of capital financing plans and feasibility studies associated with the issuance of several hundred million dollars in municipal revenue bonds and bond anticipation notes (BANs). The funding proceeds have been utilized for such purposes as utility acquisitions, expansion of facilities, and various other capital improvement needs. In addition, Mr. McGarvey has developed capital funding strategies utilizing various combinations of bonds, bank loans, government assistance loans (i.e. State Revolving Funds) and grants.

Acquisitions and Valuation Analyses

Mr. McGarvey has been involved in numerous acquisitions and valuation analyses for utility systems located throughout the southeastern region. The acquisition projects generally involve financial due diligence, valuations, negotiations, and financing activities associated with such transactions. Mr. McGarvey has performed valuation analyses utilizing various generally accepted methodologies including cost approach (value of the cash flows generated by the system), original cost less depreciation (book value), comparable sales (actual transactions for other systems), replacement cost new less depreciation and reproduction cost new less depreciation (value of system assets).

Some of the major valuation and acquisition projects Mr. McGarvey has been involved in include the acquisition of the Duke Energy's North Carolina water system by the Broad River Water Authority; the City of Anderson, South Carolina acquisition of part of Duke Energy's South Carolina water system; and Lexington County Joint Water and Sewer Commission, South Carolina investigation into the acquisition of select service territory of Carolina Water Services; Marion County, Florida's acquisition of several of the Florida Water Services systems. In addition to this water and sewer valuation experience, Mr. McGarvey has been involved in several studies regarding the feasibility of municipalizing the distribution assets of investor-owned electric utilities.

Nathan A. Zill

Colorado State University
B.S., Natural Resources, 1976

Mr. Zill has been responsible for the preparation of grant applications and grant amendments on behalf of municipalities for funding from State and Federal agency programs which include programs administered by the Michigan Department of Natural Resources, U.S. Environmental Protection Agency, Michigan Department of Commerce, U.S. Department of Agriculture – Rural Development Programs, Michigan Department of Transportation, Federal Highway Administration, etc., for water, wastewater and road projects. He has assisted partnership preparation of engineering contracts for projects receiving State and/or Federal funding for water, wastewater, and road projects, and has managed the administrative requirements associated with grants and loans.

Project Role:
Grants and Loan

RELEVANT PROJECT EXPERIENCE

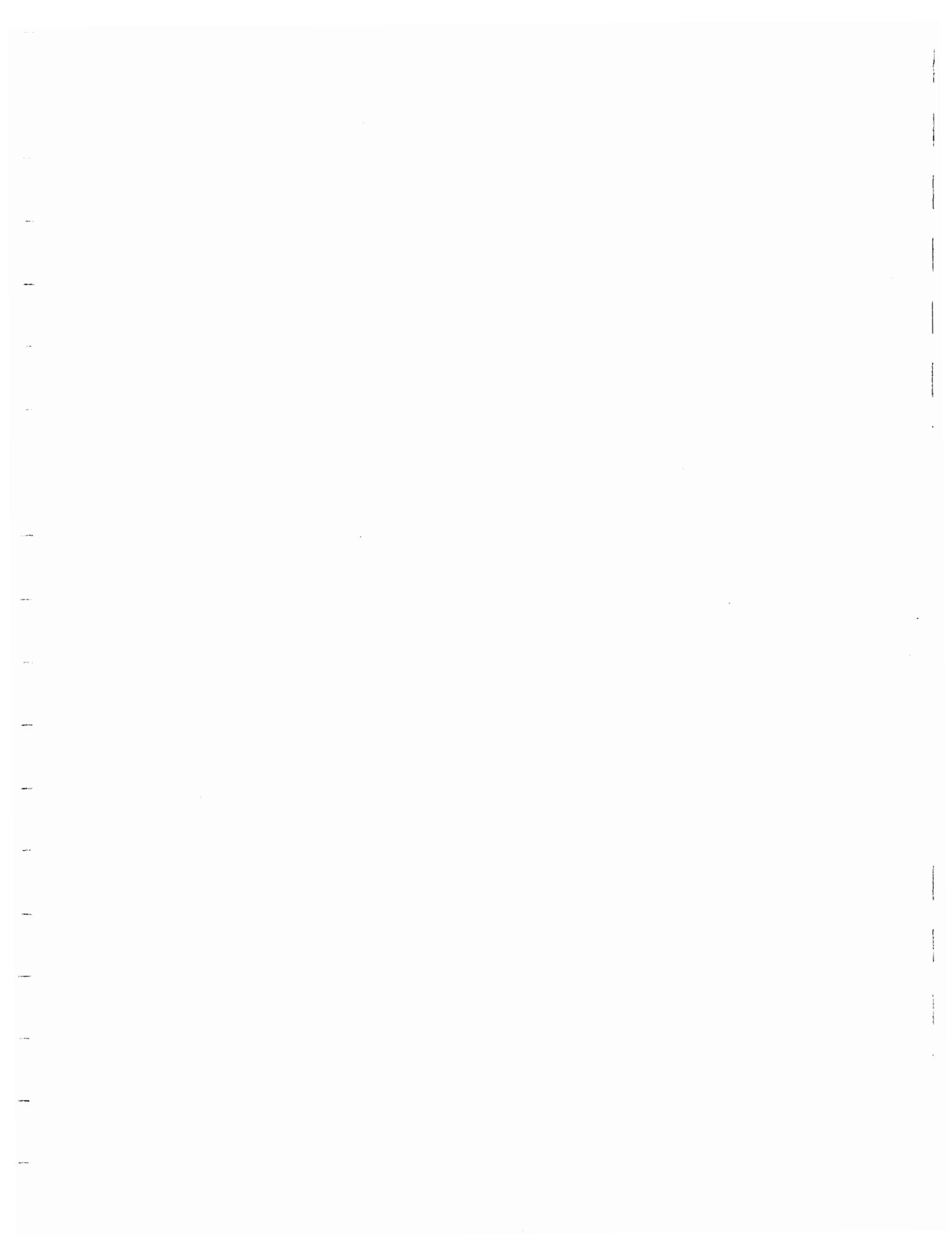
Recently, Mr. Zill has provided clients with information on the latest Drinking Water Revolving Fund (DWRF) Loan Program. Project plans have been prepared for the following communities: Algonac, Breckinridge, Manchester, Marine City, Mount Clemens, and Saline.

Previous wastewater State Revolving Fund (SRF) loan experience includes work in the following communities: Armada, Capac, Escanaba, Genoa Township, Oceola Township, Hamburg Township, Hartland Township, Lansing, Manchester, Marine City, Menominee, Milk River ICDB, Salem Township, Washtenaw County, Wayne County, Yale, Sault Ste. Marie, Frankenmuth, Mount Clemens, Warren, and Port Austin.

Mr. Zill also provides review and comment on proposed and adopted State and Federal regulations which impact Tetra Tech projects. He circulates pertinent regulations to appropriate staff personnel and maintains files of current regulations and guidance documents. His expertise and knowledge of regulatory and funding requirements, as they pertain to project planning and environment assessment, facilitates the preparation of Tetra Tech reports and planning documents to expedite the grant and funding process.

Mr. Zill has been responsible for preparation of Environmental Assessments for water, wastewater and/or road improvement facilities in Almont, Coldwater, Midland, Escanaba, Manchester, East Jordan, Bark River, Michigamme, Sault Ste. Marie, Marine City, Lansing, Grand Rapids, Genoa and Oceola Townships, Armada, Capac, Port Austin, Wayne County, Hamburg Township, Hartland Township, Brighton, Wixom, Walled Lake, Salem Township, Washtenaw County and Ann Arbor, among others.





Leslie Shoemaker

University of Maryland
Ph.D., Agricultural Engineering

Cornell University
M.Eng., Agricultural Engineering

Hamilton College
B.A., Mathematics

Project Role:
Water Resources Management

Dr. Shoemaker is a nationally recognized expert with over 20 years experience in the analysis of watershed and ecosystems and development of integrated modeling systems. She has authored dozens of technical papers on modeling watershed systems that have been published in leading scientific and trade publications. Dr. Shoemaker has directed numerous multi-disciplinary watershed management studies such as Lake Tahoe, Patapsco (Baltimore County, MD), Clermont County, and watershed assessment and BMP modeling system development for Prince George's County. She has provided planning, facilitation, and modeling for reservoir protection projects such as the Upper Patuxent watershed (Washington Suburban Sanitary Commission) and Loch Raven reservoir. For the Milwaukee area she is leading a large-scale HSPF modeling application (>1000 sq. mi.) study that will evaluate and recommend the combination of discharges, CSO, SSO, stormwater, and management practices that will best meet multiple water quality objectives.

Dr. Shoemaker supported the development and testing of the first version of GWLF, and application to reservoir management planning (NYC Cannonsville Reservoir) in 1983. Her Ph.D. work focused on the development and testing of models to evaluate surface-groundwater interactions. Dr. Shoemaker supported the development of early GIS-model linkages using ARC/INFO (WPS, Prince George's County). She helped formulate the initial design and development of the BASINS modeling system. Dr. Shoemaker currently oversees the development of the next generation integrated modeling system, the EPA TMDL Toolbox. Dr. Shoemaker is the principal investigator for research and development of an innovative system to locate, size and optimize BMP strategies, currently being tested in the Anacostia watershed.

Dr. Shoemaker is lead author of the EPA Model Compendium for Watershed Assessment & TMDL Development (Vers. 1 & 2), developed for EPA to support informed review and selection of modeling tools.

Dr. Shoemaker manages Tetra Tech's Water Resources and Modeling Division, which includes over 65 specialists in modeling, water quality assessment, and systems development throughout the United States.

RELEVANT PROJECT EXPERIENCE

Lake Tahoe TMDL Development. Principal Investigator for the development and execution of a comprehensive four-year plan to develop a watershed/lake study and TMDL including design of a modeling system, stakeholder involvement planning, data needs, and TMDL components. Currently overseeing the development of a watershed model for high alpine conditions, model testing, and collaboration with the interagency TMDL development group.

Patuxent Reservoirs Modeling, Monitoring Plan & HSPF Application. Washington Suburban Sanitary Commission (WSSC).



Developed Comprehensive Watershed Planning Strategy for the Upper Patuxent Reservoir system by facilitating a large interjurisdictional workgroup. This innovative plan encompasses the full range of monitoring evaluation and design analysis, water supply and water quality modeling, safe yield studies, cost allocation, and funding needs to implement an ecologically based watershed approach. The measures include a combination of terrestrial and aquatic habitat indicators, beneficial use support, and drinking water protection criteria. Habitat measures include assessment of forested and wetland areas for functional value, size, and continuity. Aquatic habitat and stream system stability are to be tracked using a variety of techniques.

Future Development Impact Study, Clarksburg, MD. Project manager for a study of the potential impact of future development on water and environmental resources in the Clarksburg planning area, near Washington, DC. The work includes the development of a large scale hydrologic and water quality stream and lake model for existing and future conditions within the basin. Existing conditions are primarily agricultural, while future conditions are expected to be low to medium density residential. GIS overlays were developed and used to define areas with potential environmental sensitivity. Potential for ground water contamination of the sole source aquifer was evaluated using the DRASTIC methodology. The project involved close coordination with county planners and engineers as proposed land use plans were developed. In each step of the process, cooperation ensured sensitivity to environmental opportunities and constraints. The resulting land use plans minimized adverse impacts by avoiding steep slopes, wetlands, and ground water recharge areas and maintaining buffer areas throughout the reservoir and stream valley system.

EPA Technical Guidance Development. For over 11 years, provided continuous support to EPA in developing guidance for modeling, model selection, and watershed and TMDL assessment techniques. Key author for the EPA Model Compendium for Watershed Assessment and TMDL Development (versions 1 and 2), TMDL Protocols for Pathogens, Nutrients, and Sediment, TMDL Guidance for the 2001 Rule, and the TMDL Case Study Series. Supported numerous other documents such as the BOD/DO Technical Support Document, and EPA Region 4 Monitoring and Listing Guidance. Most recently supported the development of the Watershed Handbook – EPA's new guide for procedures and analysis for the development of watershed management plans.

BASINS Development and Training. Provided original concept and design support for the BASINS modeling system, including linkage to the HSPF and development of assessment and targeting tools. Provided management and oversight of the development of the BASINS modeling systems (1.0, 2.0, 3.0) from the initial concept design through sequential updates to the present. Co-author of the BASINS modeling manual. Provided training to hundreds of state and federal practitioners at more than 15 locations throughout the country in the use of the modeling system.

Placement of BMPs in a Watershed to Manage Sediment and Protect Source Waters. EPA ORD. Principal Investigator. Identifying needs, available models and modeling systems, conceptual design, and system prototype for EPA ORD NERL Edison Laboratory. This integrated decision-support system will provide the needed link between management action, source loading, stressors, and water quality endpoints. Ultimately this system will provide tools to optimize watershed management activities and trade resources to meet identified water quality goals. The resulting system will be tested using case studies with extensive monitoring records. The system will be available to support of comprehensive studies for TMDLs, trading, storm water/MS4 management and planning.

JEFFREY H. TAYLOR

660 Hopkinton Road
Hopkinton, NH 03229
(603) 224-6555 (W)
(603) 228-4614 (H)

SUMMARY OF QUALIFICATIONS

Strong conceptual abilities, coupled with experience in practical applications. Ability to lead group discussions, and to keep all focused on the task at hand. Extensive experience in economic development and related land use planning issues. Able to foster inter-disciplinary communication.

WORK EXPERIENCE

2003 to Present PRESIDENT
Jeffrey H. Taylor & Associates, Inc.
Concord, New Hampshire

Upon leaving state service, formed a consulting company focused on community planning and economic development issues. Clients have included municipalities, non-profit organizations, and private entities. The connecting theme for all of this work has been the focus on community development. Projects have included master plans, development projects, the formation and/or improvement of non-profit entities, and related topics.

1989 to 2003 DIRECTOR
NH Office of State Planning
Concord, New Hampshire

Appointed by Governor Judd Gregg and re-appointed by Governors Stephen Merrill and Jeanne Shaheen. Supervised an office of 45, with an annual budget of \$15 million. Key program initiatives have included the use of community development block grant funds for economic development, the creation of a state-wide network of regional development corporations, the establishment of an annual training program for all local land use boards across the state, and the passage of several pieces of environmental legislation, including the Shoreline Protection Act.

A leader in Governor Shaheen's efforts to have communities and state agencies alike develop in patterns consistent with sound planning principles. Helped secure passage of legislation that more fully coordinates planning at the local, regional, and state levels. Brought a focus on implementation to the planning office.

1977 to 1989 ASSISTANT PLANNER, then
COMMUNITY DEVELOPMENT DIRECTOR, then
DEVELOPMENT DIRECTOR
City of Berlin, New Hampshire

Assignments in this northern community began with traditional planning activities and advanced to grant writing; then to project supervision, including oversight of road and bridge construction; and finally to economic development, including the construction of a 62 acre industrial park and the capitalization of a \$2 million loan fund.

EDUCATION

1974 to
1976 CORNELL UNIVERSITY
Ithaca, New York

Graduate study in the College of Architecture, Department of Urban and Regional Planning. Research efforts focused on community-based approaches to land use planning.

1966 to
1970 MIDDLEBURY COLLEGE
Middlebury, Vermont

Bachelor of Arts degree in geography. Senior thesis focused on the physical, economic, and social development of a Massachusetts coastal community.

MILITARY EXPERIENCE

1970 to
1974 US COAST GUARD

Lieutenant (Junior Grade). Deck watch officer aboard USCGC *Active*, a 210' medium endurance cutter. Instructor at Officer Candidate School, Yorktown, Virginia.

BOARDS/COMMISSIONS

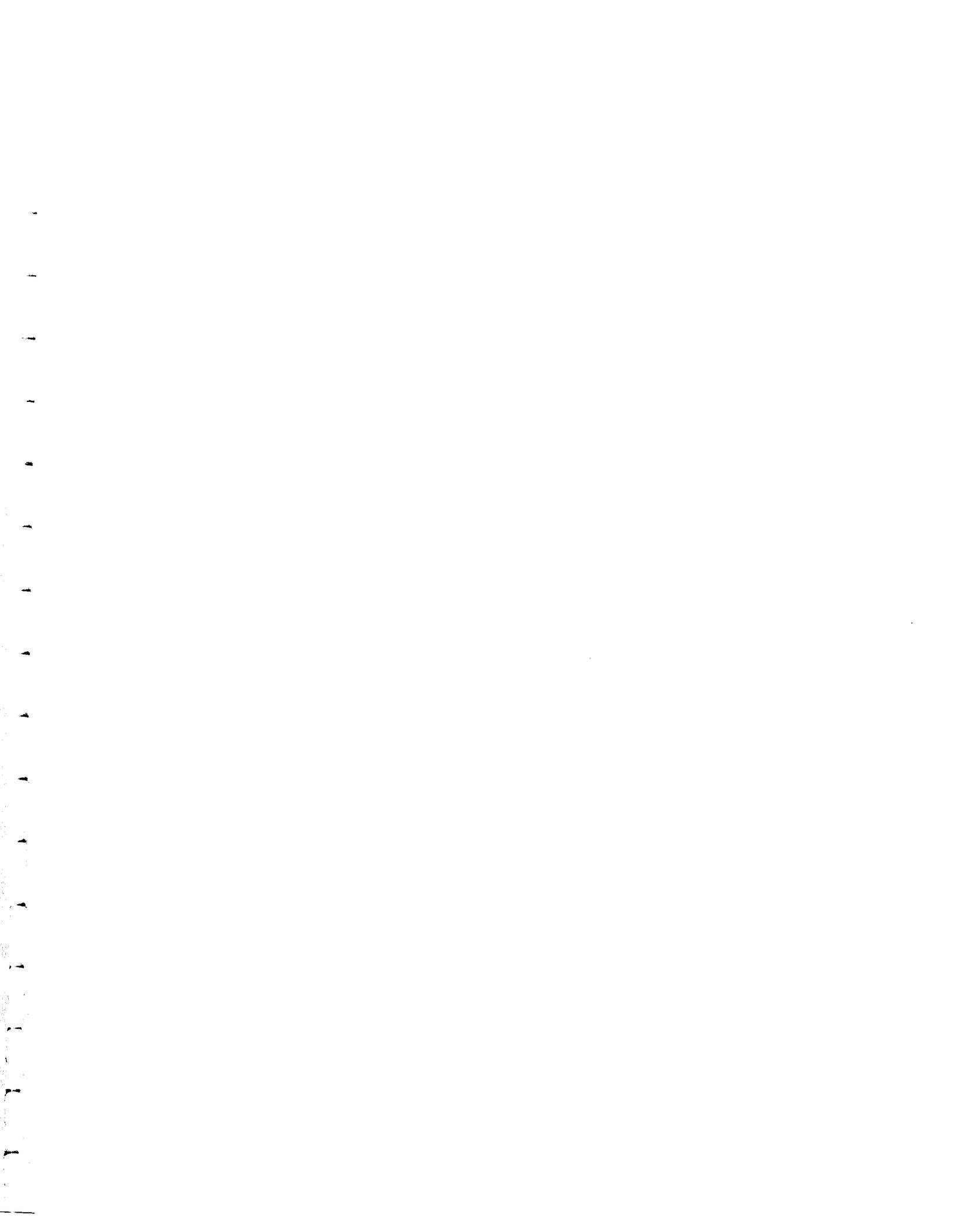
Plan New Hampshire, serving in numerous capacities since 1992, including chair of the Charrette Committee, which delivers design weekends to communities across New Hampshire each year to resolve problems of local concern.

New Hampshire Stories, served on the founding board and continued to serve on this project to promote local economic development through the sale of unique New Hampshire-made products from 1997 to 2003.

Gulf of Maine Council on the Marine Environment, served as one of New Hampshire's three representatives to this joint Canadian/US effort to monitor and maintain environmental quality in international waters from 1989 to 2003. Chairman 1994-5.

AWARDS, HONORS

2003 Achievement Award, NH Preservation Alliance
2003 Honorary Member, NH Chapter, American Institute of Architects
2001 Honor Award, NH Chapter, American Institute of Architects
1999 Clint Sheerr Award for Creative Leadership in the Built Environment, PLAN NH
1998 Fellow, Salzburg Seminar, Salzburg, Austria
1992 PLAN NH President's Award
1989 US/UK International Planners Exchange Participant
1987 Governor's Citation for Outstanding Community Development
1982 NH Planners Association Award for Planning Excellence



September 1, 2005



City of Nashua
Central Purchasing Office
229 Main Street
Nashua, NH 03061

Dear Community Leaders,

Subject: RFP1306-061505 - Water Utility Oversight Services

Per the August 31, 2005 letter from your procurement consultant, R. W. Beck is attaching its Revised Cost Proposal for Water Utility Oversight Services. Please replace our original Cost Proposal, submitted on July 14, 2005, with this Revised Cost Proposal.

We would welcome the opportunity to discuss the details with you to assure that you are provided the services you need, within the resources available.

Very truly yours,

R. W. BECK, INC.

A handwritten signature in black ink, appearing to read 'S. R. Gates'.

Stephen R. Gates, P.E., DEE
Client Services Director

A handwritten signature in black ink, appearing to read 'Paul B. Doran'.

Paul B. Doran, P.E.
Senior Associate

ESTIMATED PRICING AND BASIS



INITIAL TASKS

The estimated price to perform the Initial Tasks described in Section 3 of our Technical Proposal is \$230,000.00, including expenses directly chargeable to the services furnished. This price shall remain valid until December 31, 2005, after which the price will be escalated in accordance with the Consumer's Price Index (CPI) for the Boston-Brockton-Nashua area.

R.W. Beck, Inc. is available to support the City with contract preparation and negotiation. As a New Initial Task #9, R.W. Beck, Inc. proposes a Task allowance of \$35,000 to support the City's procurement consultant's preparation of the O&M Contractor's Service Agreement and applicable Technical Exhibits. This allowance is in addition to the proposed budget of \$230,000 for the Initial Tasks described in Section 3 of our proposal.

RECURRING TASKS

The estimated annual budget to perform the Recurring Tasks described in Section 3 of our technical approach is \$315,000.00, including expenses directly chargeable to the services furnished. This budget price shall remain valid until December 31, 2005. Pricing for Recurring Tasks for subsequent years would be calculated and presented yearly to the City at the time the services are to be performed and indexed in accordance with the CPI for the Boston-Brockton-Nashua area.

The estimated pricing above includes:

- *Labor of R. W. Beck personnel* calculated using anticipated hours of services to be furnished multiplied by R. W. Beck's current fixed hourly rates - see Page 3 for current fixed hourly rates. Rates are valid until December 31, 2005 at which time they are subject to revision as stated above;
- *Labor of Tetra Tech personnel* calculated using anticipated hours of services to be furnished multiplied by Tetra Tech's current fixed hourly rates - see Page 4 for current fixed hourly rates. Rates are valid until December 31, 2005 at which time they are subject to the revision similar to R.W. Beck, Inc. labor above;
- *Services of Subconsultants/Subcontractors* calculated using quoted costs plus 10%; and
- *Expenses* for anticipated types and quantities calculated using current rates and costs. Typical expenses include, but are not limited to: communications (postage, fax, long-distance telephone expenses); printing, reproduction, and binding; computers and automated drafting systems; rentals, communications, furnishings and utilities



for field offices; reasonable travel and living expenses for personnel; and other expenses directly related to services furnished.

Pricing for Optional Tasks 1 through 5 defined in Section 3 of our Technical Proposal, as well as any other additional services, will be calculated at the time the services are requested by the City.

BASIS OF PRICING

The pricing quoted above is based on the following criteria which is inherent in the calculation of our fixed hourly rates and general overhead costs.

- The City will reimburse R. W. Beck on a monthly basis for services performed and expenses incurred.
- The City and R. W. Beck will negotiate mutually agreeable contract provisions for:
 - Payment
 - Standard of Care and Reperformance of Services
 - Limitations of Liability, including no consequential damages
 - Use of Work Product
 - Indemnity and Insurance
 - Dispute Resolution.

INITIAL TASKS – COSTING ASSUMPTIONS

- Complete Initial Tasks over a 6- to 8-month period.
- Includes fourteen (14) City meetings over the Initial Task period.
- Includes two (2) meetings with Mayor and Board of Aldermen over the Initial Task period.
- Includes ten (10) full-day and five (5) half-day meetings with O&M contractor over the Initial Task period.
- Includes the review of the following O&M contractor deliverables:
 - One (the final) staffing plan
 - One (the final) maintenance plan
 - One (the final) initial inventory
 - One (the final) billing procedures SOP
- Single review of the existing Vulnerability Assessment and Emergency Response Plan.

RECURRING TASKS – COSTING ASSUMPTIONS

- Includes two (2) City meetings per month over the first year of service.
- Includes one (1) meetings with Mayor and Board of Aldermen each month over the first year of service.
- Includes three (3) full-day on-site meetings per month with O&M contractor over the first year of service.
- Single annual review of the Vulnerability Assessment and Emergency Response Plan for updates.
- Includes an allowance of \$20,000 for Recurring Task #1 representing the City in Owner Negotiations during the first year. This allowance is for R.W. Beck, Inc. to represent the City in any O&M Contractor Service Agreement Amendments that may become necessary due to changes in O&M scope of services, occurrence of Uncontrollable Circumstances, occurrence of Changes in Applicable Law, and the addition of engineering and/or construction projects.
- Includes an allowance of \$40,000 for Recurring Task #7 Construction Coordination during the first year based on the construction of improvements to the water treatment plant and the water distribution system needs. Acting as an extension of City staff, this allowance is for R.W. Beck, Inc. to represent the City's interest in any construction work for the newly acquired water utility, to include coordination with the various City agencies and departments impacted by pipeline and other construction projects.
- Includes an allowance of \$20,000 for Recurring Task #9 Review of the O&M Contractor's first year Capital Improvement Plan. This allowance is for R.W. Beck, Inc. to work with the O&M Contractor in the selection and prioritization of capital projects for the new utility in the first year of operations.

R. W. BECK CURRENT BILLING RATES (July 2005)

| Billing Rates \$/Hour ^(*) | | Category/Project Roles |
|--------------------------------------|----------|--|
| 12.00 | - 72.00 | Clerical, Administration, Junior Engineers and Technicians |
| 84.00 | - 120.00 | Staff Engineers, Consultants and Technicians |
| 132.00 | - 168.00 | Senior Engineers, Consultants and Technicians, and Project Managers |
| 180.00 | - 240.00 | Executive Engineers and Consultants, Senior Project Managers, and Principals |
| 252.00 | - 295.00 | Executive Engineers and Consultants, Executive Project Managers, and Senior Principals |

(*) - Billing rates are based on actual salary paid and inclusive of allowances for personnel benefits and multiplier. Rates are subject to review and annual adjustment in accordance with the Firm's salary administration plan.

Tetra Tech RAI, Inc. Fee Schedule

Effective December 2005

| Rate Category | Hourly Rate |
|---|--------------------|
| Principal | \$200.00 |
| Project Director | \$165.00 |
| Senior Project Manager/LSP | \$150.00 |
| Senior Project Manager | \$145.00 |
| Technical Specialist | \$135.00 |
| Project Manager/LSP | \$120.00 |
| Project Manager | \$120.00 |
| Senior Project Engineer/Environmental Scientist/Planner/Landscape Architect | \$100.00 |
| Construction Manager | \$95.00 |
| Project Engineer/Environmental Scientist/Planner/Landscape Architect | \$95.00 |
| Project Surveyor/Party Chief | \$70.00 |
| Engineer II | \$85.00 |
| Scientist/Planner II | \$85.00 |
| Engineer/Scientist/Planner I | \$72.00 |
| Designer | \$80.00 |
| Draftsperson/Cartographer | \$70.00 |
| Surveyor | \$55.00 |
| Technician | \$50.00 |
| Junior Technician | \$40.00 |
| GIS Analyst | \$65.00 |
| Administrative Assistant | \$50.00 |
| Word Processor | \$45.00 |
| Technical Trainee | \$30.00 |
| Computer-Aided Design and Drafting (per CPU hour) | \$5.00 |

Expenses

Direct expenses shall be billed as three percent of labor charges. Direct expenses include local routine transportation, in-house printing costs, postage, faxes, telephone calls, and minor delivery expenses. Subcontractor costs and other expenses will be billed at cost plus fifteen percent.

Payment

Invoices are issued monthly and are payable within 30 days of their issue date. In the event payment is delayed beyond 30 days from that date, interest shall be paid at 1.5 percent per month on the unpaid balance.

Expert Testimony

A surcharge of 50 percent shall be added for expert witness testimony or participation in hearings or depositions, including preparation time.